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Addressing Algorithmic Bias and Data Privacy in Human Resource Management

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ABSTRACT

Artificial intelligence (AI) has transformed Human Resource Management (HRM) by automating recruitment, enhancing performance evaluation, and enabling data-driven workforce planning. However, its adoption raises critical concerns related to algorithmic bias, data privacy, and employee trust, creating a significant gap in understanding how these technical and ethical dimensions interact. This study aims to synthesize current evidence on the impact of AI on HRM functions, the challenges associated with fairness and privacy, and employee perceptions of AI-enabled HRM systems. A Systematic Literature Review (SLR) was conducted following PRISMA 2020 guidelines and structured using the PICOC framework. Searches across major scientific databases identified 1,042 records, of which 35 peer-reviewed studies published between 2020 and 2025 met all eligibility criteria. The findings show that AI enhances HRM efficiency and decision quality but presents recurring risks of algorithmic bias, opaque decision-making, and weak data governance. Employee perceptions of fairness, transparency, and privacy strongly influence trust and acceptance of AI-based HRM systems. The review concludes that effective AI adoption requires socio-technical integration combining algorithmic capability with robust governance and ethical safeguards. The study introduces an integrated conceptual model linking AI capabilities, HRM functions, data governance, employee trust, and organizational outcomes—representing a key theoretical contribution and a novel synthesis of previously fragmented research.

1. INTRODUCTION

Artificial Intelligence (AI) is transforming the landscape of Human Resource Management (HRM) by redefining recruitment, performance evaluation, workforce planning, and employee development through automated decision-making and data-driven insights (Abasaheb & Subashini, 2023; Ali & Kallach, 2024; Venugopal et al., 2024). Organizations increasingly deploy AI-enabled systems to enhance efficiency and objectivity, positioning AI as a critical element in modern HRM strategies. This expansion is supported by rapid advancements in machine learning, analytics, and edge–cloud integrations that accelerate the processing of complex HR data (Bourechak et al., 2023; Kiran Deep Singh & Singh, 2024). As AI becomes more deeply embedded in HRM infrastructures, its role extends from automation toward augmentation, fundamentally reshaping how organizations attract, assess, and manage talent (Bastida et al., 2024; Madanchian, 2025). Nevertheless, these advancements introduce substantial risks concerning algorithmic bias, discrimination, and data privacy. Studies have shown that AI recruitment and performance prediction systems may unintentionally perpetuate or even amplify biases embedded in historical data or model architectures (Köchling & Wehner, 2020; Cossette-Lefebvre & Maclure, 2023). The opacity of AI systems further complicates the detection and remediation of such biases, creating challenges for fairness and accountability in HR decisions (Lo Piano, 2020). At the same time, increasing reliance on personal and sensitive data in HRM raises substantial privacy concerns, particularly regarding surveillance, consent, lawful processing, and the protection of employees’ digital rights (Serova & Shcherbakova, 2022; Jean-Quartier et al., 2024; Yan et al., 2023). These issues highlight the need for ethical and trustworthy AI

systems that uphold equity, transparency, and data governance requirements in HR practices (Alzubaidi et al., 2023; Capasso et al., 2024). Concurrently, the increasing reliance on personal and sensitive data in HRM raises considerable privacy concerns, particularly regarding surveillance, consent, lawful processing, and the protection of employees' digital rights (HR Digital Transformation Architect & Nyathani, 2023; Wang et al., 2025). Others document challenges in employee acceptance, fairness perceptions, and resistance arising from concerns about surveillance and job displacement (Majrashi, 2025; Upadhyay, 2025). Research on HR analytics has advanced the understanding of how data-driven decision-making influences public and private sector HRM (Cho et al., 2023; Imron et al., 2024), yet still lacks a comprehensive integration of algorithmic bias and data privacy perspectives. As a result, the literature has not adequately examined how these dimensions interact and jointly influence trust, engagement, and technology acceptance in AI-based HRM settings. This fragmentation indicates a substantial gap requiring a systematic synthesis.

Given these gaps, this study aims to provide an integrated understanding of how AI affects HRM by synthesizing evidence on algorithmic fairness, data privacy, and employee acceptance. A systematic literature review (SLR) is adopted to consolidate findings from diverse empirical and conceptual studies, address the fragmentation between technical and organizational perspectives, and clarify how fairness and privacy challenges shape the legitimacy and acceptance of AI-enabled HRM systems (Köchling & Wehner, 2020; Yan et al., 2023; Ali & Kallach, 2024; Upadhyay, 2025). Accordingly, this review seeks to answer three research questions: (1) How does the application of AI influence various HRM functions? (2) What challenges related to algorithmic bias and data privacy emerge in AI-enabled HRM? (3) How do employees' perceptions of these risks shape trust, engagement, and acceptance?

This study contributes to the current body of knowledge in three key ways. First, it consolidates fragmented findings from studies on AI-enabled HRM (Madanchian, 2024; Venugopal et al., 2024), algorithmic bias (Köchling & Wehner, 2020; Cossette-Lefebvre & Maclure, 2023), and data privacy (Serova & Shcherbakova, 2022; Yan et al., 2023), which have rarely been examined together. Second, by integrating these domains, the study provides a comprehensive perspective on how fairness and privacy risks influence employee trust, acceptance, and organizational legitimacy—an area still underexplored despite rapid global adoption of AI technologies in HRM (Majrashi, 2025; Mwita & Kitole, 2025). Third, the review proposes an integrated conceptual model linking AI capabilities, HRM functionalities, and data governance requirements, responding to calls for more holistic and ethically grounded frameworks in AI-driven HRM research (Bastida et al., 2024; Capasso et al., 2024). The following section outlines the systematic review methodology used to conduct this study.

2. RESEARCH METHODS

2.1. Study Design and PICOC Framework

This study employed a SLR adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines. The SLR approach was selected to synthesize fragmented research on AI adoption in HRM, algorithmic bias, and data privacy, ensuring methodological transparency, replicability, and rigorous evidence integration. The Protocol was structured using the PICOC (Population, Intervention, Comparison, Outcomes, Context) framework to guide question formulation, search strategy, and screening criteria. The review was not registered, but all procedures and criteria were fully documented and followed consistently (Deeks et al., 2023). The PICOC framework was used to define clear boundaries for study selection: Population (P): Studies examining AI systems used in HR, enterprise decision-making, or organizational systems involving employees, stakeholders, or personnel data; Intervention (I): Implementation of artificial intelligence techniques including machine learning, predictive analytics, decision support systems, federated learning, explainable AI, or automated ranking systems; Comparison (C): Not applicable—the primary goal of this SLR is integrated synthesis rather than comparative efficacy; Outcome (O): Reported findings on algorithmic fairness, bias mitigation, privacy protection, employee trust, organizational acceptance, or HR performance outcomes; Context (C): Organizational settings including private companies, public sector institutions, enterprise information systems, healthcare environments, and digital governance ecosystems.

2.2. Data Sources and Search Strategy

This study utilized data primarily from the Scopus database, accessed on June 9, 2025. An initial search for "human resources management AND artificial intelligence AND data privacy" within Scopus yielded 212 records (Figure 1). To broaden the scope and enrich the research, publications from Sage, Emerald, and ScienceDirect, indexed by Scopus and relevant to algorithmic bias and data privacy interactions in human resource management, were also included. This selection process was guided by the PRISMA guidelines (Page et al., 2021). The search resulted in 1,042 total records across databases.

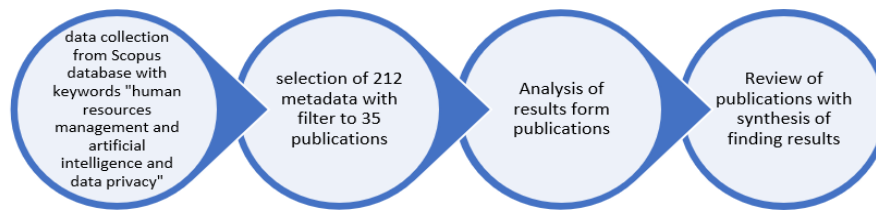


Figure 1. Data collection methods

2.3. Literature Inclusion and Exclusion Criteria

Articles were deemed eligible if they were peer-reviewed, published in English between 2020–2025, and explicitly addressed the interaction of AI/HRM with the ethical implications of algorithmic bias and/or data privacy. This included empirical studies, technical evaluations, or theoretical frameworks related to AI in HRM, and studies reporting data, analysis, models, or explicit discussion of fairness, privacy, or HR-based AI adoption. Exclusion criteria focused on removing secondary literature, technically focused studies lacking an HRM application context, non-AI automation research, commentary-only articles, and non-peer-reviewed material. Studies lacking an HR or organizational perspective, and publications without data implications for fairness, privacy, or employee perceptions were also excluded (table 1).

Table 1. Literature Criteria

Criteria	Inclusion	Exclusion
Subject	Research in human resources management, artificial intelligence and data privacy	Beyond human resources management, artificial intelligence and data privacy research
Source	Journals and research articles are accessible from Scopus sources.	Research articles or journals that are not fully accessible or are fee-based. Outside the Scopus sources.
Time period	Publication between 2020 and 2025	Published less than 2020
Journal content them	Articles or journals discussing human resources management, artificial intelligence and data privacy	Articles or journals that, after analysis, are found to be inconsistent with the research problem
Area	computer sciences, engineering, medicine, decision sciences, business, management and accounting, health professions, and interdisciplinary sciences, multidisciplinary	In addition to computer sciences, engineering, medicine, decision sciences, business, management and accounting, health professions, and interdisciplinary sciences, multidisciplinary
Language	English	Not in English

2.4. PRISMA Screening Process

Following PRISMA 2020 guidelines, the review employed a four-stage workflow (Figure 2): (1) Identification: 1,042 records retrieved across databases; (2) Screening: After removing duplicates ($n=276$), 766 articles remained; title and abstract screening retained 152 articles for full-text review; (3) Eligibility: Full-text assessment excluded 117 articles due to insufficient relevance to AI-HRM, lack of privacy/bias discussion, or weak methodological grounding; (4) Inclusion: 35 studies met all eligibility criteria for final synthesis.

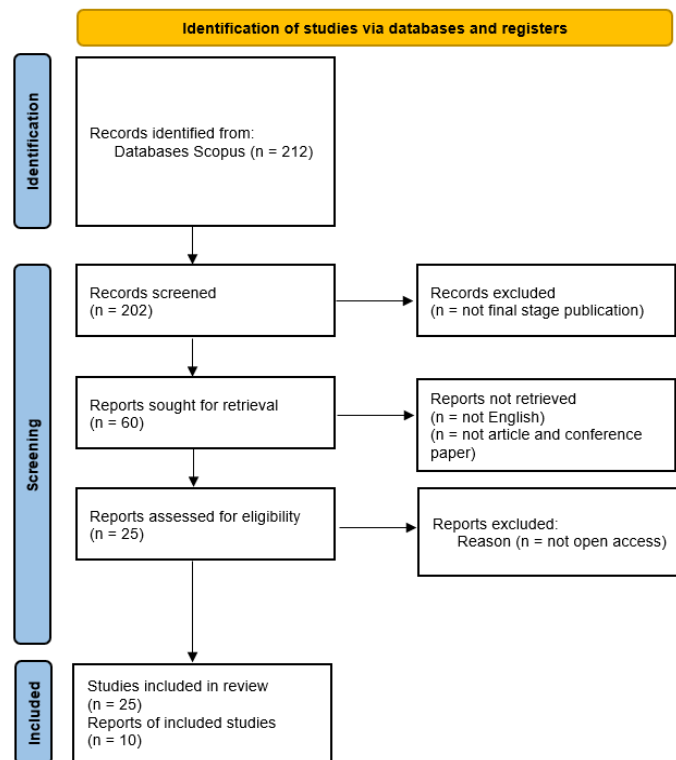


Figure 2. Flow chart according to the PRISMA declaration

2.5. Data Extraction and Synthesis

A standardized, structured data extraction form was applied to the 35 included articles. Data recorded included: bibliographic details, study methodology, primary research focus, specific findings related to algorithmic bias and data privacy, and proposed implications or governance models. Coding was conducted iteratively using thematic analysis to classify studies into three major categories: algorithmic bias (≈ 12 studies), data privacy and security (≈ 11 studies), and AI applications in HRM (≈ 12 studies). Themes were refined through constant comparison procedures to ensure consistency and minimize researcher subjectivity. The findings were synthesized using a narrative thematic synthesis approach.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Study Characteristics

A total of 35 studies published between 2020 and 2025 were included in the final synthesis (Table 2). Most studies originated from peer-reviewed journals in the fields of information systems, business management, HRM, digital ethics, and computer science. The research designs comprised conceptual frameworks, qualitative studies, quantitative surveys, mixed-method approaches, and systematic/scoping reviews. The included studies examined AI in a range of HRM functions, including recruitment (Ali & Kallach, 2024; Rahman et al., 2025), performance management (HR Digital Transformation Architect & Nyathani, 2023; Majrashi, 2025), workforce planning (Venugopal et al., 2024; Madanchian, 2024), and HR analytics (Cho et al., 2023; Wang et al., 2025). Additional studies provided critical insights on algorithmic fairness and discrimination (Köchling & Wehner, 2020; Cossette-Lefebvre & Maclure, 2023), and on data privacy and digital rights in organizational environments (Serova & Shcherbakova, 2022; Yan et al., 2023; Jean-Quartier et al., 2024).

Table 2. Dataset Publications Extraction

No	Title	Authors	Findings
1	Unlocking biomedical data sharing: A structured approach with digital twins and artificial intelligence (AI) for open health sciences.	(Jean-Quartier et al., 2024)	The research emphasizes the importance of FAIR (Findable, Accessible, Interoperable, and Reusable) sharing of sensitive biomedical data.
2	Transformative AI in human resource management: enhancing workforce planning with topic modeling.	(Venugopal et al., 2024)	The research emphasizes the need for robust governance frameworks to ensure transparency and fairness in AI-driven HR processes,

3	The rise of artificial intelligence: a concise review.	(Padmaja et al., 2023)	The paper identifies the importance of addressing data bias and algorithmic fairness to prevent the perpetuation of existing societal inequalities.
4	Discriminated by an algorithm: a systematic review of discrimination and fairness by algorithmic decisionmaking in the context of HR recruitment and HR development.	(Kochling et al., 2019)	The findings suggest that while algorithmic decision-making aims to enhance efficiency and objectivity, it may inadvertently perpetuate biases, necessitating further investigation into its ethical implications.
5	Navigating change: a qualitative exploration of chatbot adoption in recruitment.	(Rukadikar & Khandelwal, 2024)	The qualitative analysis of interviews provides insights into the experiences of HR professionals, revealing that strong data protection policies and open communication are crucial for addressing privacy.
6	Towards Risk-Free Trustworthy Artificial Intelligence: Significance and Requirements.	(Alzubaidi et al., 2023)	The paper emphasizes the necessity of integrating trustworthy AI across various industries, including banking and autonomous systems, to enhance data security and decision-making processes.
7	Human Resources Analytics for Public Personnel Management: Concepts, Cases, and Caveats.	(Cho et al., 2023)	The study also discussed potential challenges such as privacy, integrity, algorithmic bias, and the need for data management and staff capabilities in public organizations.
8	Generating synthetic mixed-type longitudinal electronic health records for artificial intelligent applications.	(Li et al., 2023)	EHR-M-GAN showed robustness against membership inference attacks, indicating negligible privacy risks while maintaining data utility.
9	From Recruitment to Retention: AI Tools for Human Resource Decision-Making.	(Madanchian, 2024)	The paper discusses the ethical challenges associated with AI in HR, including bias and data privacy concerns, which must be addressed to fully leverage AI's potential.
10	Fog Cloud Computing and IoT Integration for AI enabled Autonomous Systems in Robotics.	(Kiran Deep Singh & Singh, 2024)	The study highlights the importance of interdisciplinary collaboration and ethical considerations in the development of AI technologies to address challenges such as data privacy, and safety.
11	Role of AI in empowering and redefining the oncology care landscape: perspective from a developing nation.	(Goel et al., 2025)	The paper highlights that AI can significantly enhance cancer management by improving early diagnosis and prognosis.
12	Enhancing HR Efficiency Through the Integration of Artificial Intelligence and Internet of Things: A Study on AI Implementation in Human Resource Management.	(Abasaheb & Subashini, 2023)	The research highlights the necessity for organizations to invest in cybersecurity measures and data privacy policies to address challenges related to data security and privacy.
13	Employees' perceptions of the fairness of AI-based performance prediction features.	(Majrashi, 2025)	The findings highlight the importance of aligning predictive features with employee perceptions of fairness to develop fairer AI algorithms for employee performance prediction.
14	Artificial Intelligence in Operating Room Management.	(Bellini et al., 2024)	The review noted the lack of meaningful information in anesthesia records during certain surgery phases, suggesting areas for improvement in data collection.
15	Artificial Intelligence Enabled Human Resources Recruitment Functionalities: A Scoping Review.	(Ali & Kallach, 2024)	AI integration in HRM is noted to improve efficiency, reduce biases in decision-making, and enhance overall organizational effectiveness and employee satisfaction.
16	An Overview of Tools and Technologies for Anxiety and Depression Management Using AI.	(Pavlopoulos et al., 2024)	Limitations identified include concerns over data privacy, the potential for overreliance on technology, and the necessity for human oversight in therapeutic settings.
17	AI in Performance Management: Redefining Performance Appraisals in the Digital Age.	(HR Digital Transformation Architect, US Foods Inc. 2023)	The research highlights a significant shift in performance management due to AI, moving from retrospective evaluations to dynamic, data-enriched strategies that enhance employee development and engagement.
18	The role of human resource management (hris) in efficiency and effectiveness towards green business.	(Imron et al., 2024)	The findings indicate that the integration of HRIS with other systems can enhance workflow and reduce redundancies, marking a significant shift towards data-driven HRM approaches.
19	Advancing clinical decision support: The role of artificial intelligence across six domains.	(Khalifa et al., 2024)	Notably, the findings suggest that while AI can enhance healthcare systems, it should complement rather than replace human expertise, indicating a need for a balanced approach.
20	Insights into security and privacy issues in smart healthcare systems based on medical images	(Yan et al., 2023)	It aims to stimulate further interest in developing advanced algorithms and frameworks that address security and privacy issues in emerging smart healthcare applications.
21	The use of artificial intelligence-based innovations in the health sector in Tanzania: A scoping review.	(Sukums et al., 2023)	Among the AI-driven solutions, machine learning and deep learning were predominantly utilized for various applications, including disease prediction and vaccine stock optimization.
22	Designing and implementing SMILE: An AI-driven platform for enhancing clinical decision-making in mental health and neurodivergence management.	(Pesqueira et al., 2025)	The pilot study highlighted the importance of integrating user-centered design and privacy-preserving AI, aligning with existing literature while also showcasing unique contributions to mental health care.

23	Frameworks for AI Integration in HR and Workforce Adaptation.	(Madanchian, 2025)	It underscores the importance of addressing employee privacy and potential data misuse as critical ethical concerns in AI implementation.
24	Artificial Intelligence Enabled Human Resources Recruitment Functionalities: A Scoping Review.	(Ali & Kallach, 2024)	Automation of HR operations through technologies like AI and big data is expected to transform traditional HR into HR 4.0, necessitating new skills for HR practitioners. Ethical implications and challenges associated with AI in HRM practices were identified, including potential biases in AI algorithms, data privacy concerns, and the risk of over-surveillance of employees
25	The impact of artificial intelligence on human resource management practices: An investigation.	(Ncube et al., 2025)	Significant challenges identified include lack of expertise, data privacy concerns, high costs, and resistance to change, which hinder the effective implementation of AI in HRM
26	Potential benefits and challenges of artificial intelligence in human resource management in public institutions.	(Mwita & Kitole, 2025)	The research emphasizes the need for clear definitions of when algorithmic discrimination is considered wrongful to inform appropriate regulations for their use.
27	AI's fairness problem: understanding wrongful discrimination in the context of automated decision-making.	(Cossette-Lefebvre & Maclure, 2023)	The findings suggest that achieving fairness in algorithmic decisions is complex, as it may require unequal treatment across different demographic groups to mitigate biases
28	Ethical principles in machine learning and artificial intelligence: cases from the field and possible ways forward.	(Lo Piano, 2020)	The findings indicate that knowledge sharing between AI developers and HR managers can effectively mitigate biases in AI recruitment systems (AIRS).
29	Mitigating Cognitive Biases in Developing AI-Assisted Recruitment Systems: A Knowledge-Sharing Approach.	(Soleimani et al., 2021)	
30	Exploring and addressing AI challenges in HRM: Insights and evidence from the UAE workforce.	(Upadhyay, 2025)	It highlights critical challenges related to fairness, bias, and data privacy in AI-driven recruitment processes
31	Applications of Artificial Intelligence in Enterprise Human Resource Management.	(Wang et al., 2025)	The study demonstrates that AI integration in HR can significantly enhance efficiency, transparency, and employee engagement, contingent on strong data infrastructure and algorithmic transparency
34	Artificial Intelligence (AI) in Revolutionizing Sustainable Recruitment: A Framework for Inclusivity and Efficiency.	(Rahman et al., 25)	The findings suggest that organizations can leverage AI to align recruitment practices with broader environmental and social sustainability goals, providing a roadmap for future implementation
35	On the Right to Work in the Age of Artificial Intelligence: Ethical Safeguards in Algorithmic Human Resource Management.	(Capasso et al., 2024)	The research identifies three fundamental rights affected by algorithmic biases: the right to equality, the right to privacy, and the right to work

3.1.2. RQ1: Impact of AI Applications on HRM Functions

Across the reviewed studies, AI was found to influence HRM functions in four major ways: (1) Enhancing recruitment and selection: AI-driven recruitment tools improved candidate screening efficiency and predictive matching using machine learning and natural language processing (Ali & Kallach, 2024; Rukadikar & Khandelwal, 2024). Automated shortlisting, resume parsing, and chatbot-enabled pre-screening accelerated hiring processes and reduced administrative burdens. (2) Strengthening performance management and workforce analytics: AI-supported performance systems enabled continuous monitoring, objective scoring, and personalized performance prediction (HR Digital Transformation Architect & Nyathani, 2023; Majrashi, 2025). Workforce analytics also facilitated strategic planning through topic modeling and predictive modeling (Venugopal et al., 2024). (3) Improving training and development: AI systems, including intelligent tutoring, digital coaching, and real-time decision support, enhanced learning pathways and employee development efficiency (Madanchian, 2024; Xu, 2025). (4) Supporting HR operations and digital transformation: Studies highlighted AI's role in HRIS optimization, reducing administrative workload, and improving data-driven decision-making (Imron et al., 2024; Wang et al., 2025). Overall, the evidence shows that AI significantly increases efficiency, accuracy, and objectivity across HRM functions, although impacts vary depending on system design and governance maturity. The review confirms that AI enhances efficiency, accuracy, and decision quality across recruitment, performance evaluation, workforce planning, and training (Ali & Kallach, 2024; Venugopal et al., 2024; Xu, 2025). This reinforces the broader argument that AI is no longer a peripheral tool but a strategic enabler of digital HRM transformation (Abasaheb & Subashini, 2023; Madanchian, 2024).

3.2. RQ2: CHALLENGES RELATED TO ALGORITHMIC BIAS AND DATA PRIVACY

The included studies documented consistent and recurring challenges: (1) Algorithmic bias and fairness risks: Multiple studies underscored that AI models may replicate or amplify existing structural biases due to skewed training datasets, proxy variables, or opaque model structures (Köchling & Wehner, 2020; Cossette-Lefebvre & Maclure, 2023). Biased classifications appeared particularly concerning in recruitment and performance prediction. (2) Lack of explainability and transparency: AI systems often operate as "black boxes," reducing visibility into how decisions are made, making it difficult for HR professionals to justify or challenge outcomes (Lo Piano, 2020). This threatens both accountability and perceived fairness. (3) Data privacy vulnerabilities: Several studies highlighted significant privacy

concerns, including overcollection of personal data, insufficient consent management, and weak regulatory compliance (Serova & Shcherbakova, 2022; Yan et al., 2023). Employee monitoring technologies raised concerns of excessive surveillance and erosion of digital autonomy. (4) Security and data governance issues: Risks related to data leakage, unauthorized access, and inadequate safeguards in digital infrastructures were found across several studies, particularly in cloud- and IoT-integrated HR systems (Jean-Quartier et al., 2024; Shkarupylo et al., 2024). Although AI promises impartiality, the evidence shows consistent risks that AI systems replicate or amplify existing biases (Köchling & Wehner, 2020; Cossette-Lefebvre & Maclure, 2023). Bias emerges from historical training data, proxy variables, or non-transparent learning processes. Recruitment and performance prediction are especially vulnerable because they depend on past datasets that may encode gender, racial, socioeconomic, or educational disparities (Rahman et al., 2025; Majrashi, 2025). Even advanced AI models designed for scalability, such as cloud-based systems (Singh et al., 2025), remain susceptible to implicit bias if not governed carefully. The review highlights a critical insight: algorithmic fairness is less a technical issue and more an organizational governance challenge. Bias persists not because AI is inherently discriminatory, but because organizations often lack fairness auditing protocols, explainability requirements, or ethical oversight (Capasso et al., 2024; Bastida et al., 2024).

3.3. RQ3: EMPLOYEE PERCEPTIONS, TRUST, AND ACCEPTANCE

Findings across the reviewed studies demonstrate that perceptions of fairness, transparency, and privacy strongly influence employee trust and technology acceptance: (1) Trust depends on perceived fairness and transparency: Employees show greater trust in AI systems when they perceive decision rules as fair, consistent, and explainable (Majrashi, 2025). Conversely, perceived discrimination significantly reduces acceptance and legitimacy. (2) Privacy concerns lower acceptance: Concerns about surveillance, misuse of personal data, and lack of control negatively affect employee willingness to adopt AI-based HR tools (Serova & Shcherbakova, 2022; Yan et al., 2023). Employees resist systems that they believe compromise autonomy or confidentiality. (3) Organizational communication and involvement matter: Studies found that clear communication, employee involvement, and ethical guidelines improve acceptance and reduce anxiety (Mwita & Kitole, 2025; Upadhyay, 2025). Transparent policies enhance perceptions of procedural justice. (4) Cultural and organizational context influences acceptance: Differences in organizational ethics, digital maturity, and technology readiness shape employee attitudes toward AI-enabled HRM (Nanda Oktasavira & Ismanto, 2022; Imron et al., 2024). These findings indicate that employee trust is not solely technologically determined but socially and institutionally mediated. Employee trust and acceptance function as essential mediators linking AI functionality to organizational legitimacy. Employees are more likely to support AI systems when organizations communicate transparently, provide explanations for AI-generated decisions, and implement robust fairness and privacy protections.

4. DISCUSSION

4.1. Convergent findings

Across the reviewed articles, several strong points of agreement emerge. First, most studies confirm that algorithmic bias is structural rather than incidental. Bias commonly originates from imbalanced or historical datasets and opaque model architectures (Padmaja et al., 2023; Köchling et al., 2019; Majrashi, 2025; Xu, 2025). Many authors propose fairness auditing, model transparency, and debiasing techniques as practical responses (Goel et al., 2025; Lo Piano, 2020; Ali & Kallach, 2024). Second, data privacy appears as one of the most commonly recognized ethical challenges. Several studies emphasize privacy-preserving mechanisms such as federated learning, encryption, anonymization, and synthetic data generation to protect sensitive information (Li et al., 2023; Yan et al., 2023; Jean-Quartier et al., 2024; Pesqueira et al., 2025). Regulations such as GDPR and CCPA are often cited as important boundaries for AI implementation (Pavlopoulos et al., 2024; Rahman et al., 2025). Third, research generally agrees on the benefits of AI in human resource management. Organizational improvements are noted in recruitment, performance appraisal, and workforce analytics (Cho et al., 2023; Venugopal et al., 2024; Wang et al., 2025; Bastida et al., 2024). Across these studies, AI is typically described as augmenting, rather than replacing, human decision-making.

4.2. Divergent findings

Despite areas of agreement, the literature also contains clear differences. On algorithmic bias, some studies argue that explainable AI builds trust and mitigates bias (Goel et al., 2025; Lo Piano, 2020). Others dispute this position, showing that transparency alone does not correct underlying bias in training data (Cossette-Lefebvre & Maclure, 2023; Capasso et al., 2024). On data privacy, medical and clinical studies often conclude that federated learning is a practical solution (Li et al., 2023; Yan et al., 2023; Pesqueira et al., 2025). By contrast, HR-focused studies find federated learning costly, difficult to implement, or

unsuitable for fragmented organizational data (Madanchian, 2024; Abasaheb & Subashini, 2023; Rahman et al., 2025). On AI in HRM, positive studies highlight efficiency and objective analytics (Venugopal et al., 2024; Ali & Kallach, 2024; Cho et al., 2023), while critical research emphasizes surveillance, mistrust, and risk to employee autonomy (Ncube et al., 2025; Upadhyay, 2025; Capasso et al., 2024). These divergent findings suggest that AI implementation is highly context-dependent and shaped by sector-specific conditions.

4.3. Limitations

Several recurring limitations appear across the 35 studies: Heavy reliance on cross-sectional designs and small datasets, limiting generalizability (multiple HR and CS studies), Lack of standardized metrics for fairness, transparency, and privacy (Cossette-Lefebvre & Maclure, 2023; Pavlopoulos et al., 2024), and Limited evidence of long-term or real-world deployment, especially in HR systems (Upadhyay, 2025; Ncube et al., 2025). However, what counts as “the main limitation” differs by discipline: Computer science studies emphasize computational and model-performance constraints (Goel et al., 2025; Xu, 2025), Healthcare studies emphasize regulation, ethical approval, and security (Li et al., 2023; Jean-Quartier et al., 2024), and HR studies emphasize organizational resistance, lack of trust, and cultural barriers (Madanchian, 2024; Capasso et al., 2024; Bastida et al., 2024). Hence, limitations are not only technical but also ethical, social, and managerial.

4.4. Research Gaps and Future Directions

The review identifies three primary gaps: (1) No standardized quantitative metric for AI fairness in HRM systems; (2) Lack of longitudinal studies evaluating how acceptance changes over time; (3) Minimal empirical work evaluating AI governance effectiveness. Future research should focus on comparative evaluation of fairness auditing tools, applied case studies in public-sector HRM, and mixed-method approaches combining analytics and employee perceptions. Across studies, several common research directions emerge: longitudinal research on the long-term impact of AI on fairness, decision quality, and organizational behavior (Ncube et al., 2025; Upadhyay, 2025); development of standardized frameworks for bias auditing, privacy assessment, and explainability protocols (Cossette-Lefebvre & Maclure, 2023; Pavlopoulos et al., 2024); and interdisciplinary integration of technical, ethical, legal, and psychological approaches (Capasso et al., 2024; Ali & Kallach, 2024).

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

This systematic literature review synthesized evidence from 35 peer-reviewed studies to examine how artificial intelligence (AI) is transforming Human Resource Management (HRM), what risks emerge from algorithmic bias and data privacy concerns, and how employees' perceptions shape the acceptance and legitimacy of AI-enabled HRM systems. The findings demonstrate that AI significantly enhances HRM functions—particularly recruitment, performance evaluation, workforce planning, and employee development—by increasing efficiency, predictive accuracy, and decision consistency. However, the benefits of AI are counterbalanced by persistent challenges related to fairness, transparency, and the protection of personal data. Algorithmic bias remains one of the most critical risks, as AI models can reproduce or amplify historical inequities embedded in training data or model design. Data privacy concerns further erode employee trust when AI systems collect extensive personal information without clear safeguards or transparent processing mechanisms. The review also shows that employee trust and acceptance function as essential mediators linking AI functionality to organizational legitimacy. Employees are more likely to support AI systems when organizations communicate transparently, provide explanations for AI-generated decisions, and implement robust fairness and privacy protections. Therefore, successful AI deployment in HRM requires a socio-technical approach that integrates algorithmic robustness with ethical stewardship. Overall, this review concludes that AI should be understood and implemented as a socio-technical system, not merely a computational artifact. Technical innovation, ethical commitments, and organizational practices must evolve together to achieve responsible, trustworthy, and sustainable AI deployment.

5.2. Implications

5.2.1. Theoretical Implications

This review provides three key contributions to HRM, AI ethics, and digital governance scholarship: (1) Reframing AI-HRM as a socio-technical system, highlighting the interplay between algorithms, governance, and human perceptions; (2) Integrating fairness, privacy, and trust into HRM theory, elevating these constructs as central—not peripheral—determinants of HR legitimacy; (3) Clarifying the mediational

role of trust and perceived fairness, offering stronger theoretical explanations for AI acceptance in organizational contexts. These contributions set a foundation for future empirical models, theory testing, and validation across diverse organizational contexts.

5.3. Practical and Managerial Implications

For organizations adopting AI in HRM: (1) Implement fairness-by-design and privacy-by-design protocols, including algorithmic audits, bias detection, and transparent data governance; (2) Enhance communication strategies so employees understand how AI decisions are made and how their data are managed; (3) Involve employees in AI implementation processes, which increases perceived legitimacy and acceptance; (4) Strengthen HR-IT collaboration to ensure ethical and technical considerations are fully integrated into decision-making; (5) Build internal capability for AI literacy, enabling HR professionals to understand, evaluate, and govern AI-driven systems. These measures support ethical deployment while safeguarding employee trust.

5.4. Policy and Regulatory Implications

Policymakers and regulatory bodies should: (1) Develop clearer regulatory guidance for AI fairness, algorithmic accountability, and HR data governance; (2) Strengthen digital labor rights, particularly regarding consent, data minimization, and employee monitoring; (3) Encourage standards for transparency and explainability in AI used for high-stakes decisions such as hiring and performance assessment; (4) Support cross-sector initiatives to align organizational AI practices with ethical and legal norms. Such policies ensure that technological innovation progresses alongside worker protections.

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