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The Synergy of Artificial Intelligence and Emotional Intelligence in Human Resource Development: A Systematic Literature Review of Digital-Era Organizational Transformation

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Abstract: *This systematic literature review examines how Artificial Intelligence (AI) and Emotional Intelligence (EI) jointly shape Human Resource Development (HRD) in the digital era. Following PRISMA guidelines, we searched Scopus for peer-reviewed English-language journal articles and conference proceedings published between 2019 and January 2026 addressing AI, EI, and HRD/HRM. From 81 records, 14 studies met the inclusion criteria and were analyzed using thematic synthesis. Five themes emerged: (1) AI-driven HRD decision-making, (2) EI as a critical digital-era competency, (3) human–AI collaboration mechanisms, (4) ethical challenges including algorithmic bias and workplace dehumanization, and (5) emerging theoretical frameworks. Unlike prior studies that frame AI as substitutive, our findings advance a human–AI collaboration perspective, demonstrating that AI and EI operate as complementary capabilities. AI strengthens efficiency, scalability, and predictive accuracy, while EI provides contextual judgment, ethical oversight, empathy, and trust-building. In AI-driven recruitment, managerial EI is crucial for identifying and correcting algorithmic bias and for ensuring fair, transparent decision-making. Drawing on Socio-Technical Systems Theory, we argue that digital transformation requires joint optimization of technological systems (AI) and social capabilities (EI). We propose the AI–EI Synergy Framework (AIEIS-HRD), outlining four integration mechanisms: complementarity, augmentation, moderation, and mediation. Sustainable HRD transformation depends on balancing technological advancement with emotionally intelligent governance.*

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INTRODUCTION

The Fourth Industrial Revolution has fundamentally reshaped the landscape of Human Resource Development (HRD), introducing unprecedented opportunities and challenges for organizational learning, talent development, and change management [33]. At the forefront of this transformation is Artificial Intelligence (AI), which has evolved from a peripheral technology into a central enabler of HRD processes, including algorithmic recruitment, predictive performance analytics, personalized learning systems, and succession planning [7][34]. Simultaneously, the growing complexity and velocity of digital transformation have amplified the importance of Emotional Intelligence (EI) as a foundational competency for HRD professionals navigating technology-mediated organizational change [6][9].

Despite increasing scholarly attention to AI in HRM and EI in leadership development, these domains remain largely examined in isolation. AI research predominantly emphasizes technological efficiency, automation, and predictive validity, often treating human factors as barriers to implementation rather than strategic complements [20][21]. Conversely, EI scholarship highlights empathy, interpersonal sensitivity, and ethical awareness, sometimes portraying technological systems as potentially undermining authentic human connection [42]. This fragmentation creates a critical knowledge gap: insufficient understanding of how AI capabilities and EI competencies interact within contemporary HRD practice.

This gap becomes particularly urgent when considering the emerging risk of workplace dehumanization. Excessive reliance on AI-driven systems such as automated recruitment screening, algorithmic performance monitoring, and data-centric evaluation models—may reduce employees to measurable variables, weakening relational trust and diminishing perceived dignity [21][34]. When organizational decisions are mediated primarily through opaque algorithms, employees may experience alienation, emotional detachment, and erosion of organizational culture. Without deliberate human oversight, AI systems risk reinforcing bias, amplifying inequalities, and prioritizing efficiency over fairness [1][21].

In this context, Emotional Intelligence functions as a safeguard of human values within organizations. EI enables HRD professionals to interpret algorithmic outputs contextually, recognize emotional consequences of automated decisions, detect potential algorithmic bias, and communicate outcomes transparently and empathetically [2][29]. Rather than positioning AI and EI as competing forces, a more constructive approach views EI as the moderating and mediating capability that ensures AI deployment remains ethically grounded and socially responsible.

The paradox of digital-era HRD lies in balancing technological precision with relational integrity. While AI enhances scalability and analytical power, effective HRD depends on trust, empathy, contextual judgment, and ethical reasoning capabilities deeply rooted in emotional intelligence [38]. Therefore, successful digital transformation requires synergistic integration rather than technological substitution.

This systematic literature review addresses this gap by examining the synergistic relationship between AI and EI in HRD contexts. Synergy is defined as the interaction of elements producing outcomes greater than the sum of their independent effects [10]. Our central research question asks: How do AI technologies and emotional intelligence competencies interact to shape HRD practices and outcomes in digital-era organizational transformation? Sub-questions explore theoretical explanations of AI–EI interaction, empirical evidence of complementarity or tension, required competencies for HRD professionals, and ethical implications of AI-augmented systems.

This review contributes to HRD scholarship in three ways. First, it provides the first systematic synthesis at the AI-EI-HRD nexus, clarifying fragmented findings. Second, it proposes the AI–EI Synergy Framework for Digital-Era HRD Transformation (AIEIS-HRD), offering theoretical grounding for integrating technological and emotional capabilities. Third, it develops a forward-looking research agenda addressing methodological rigor, cross-cultural validation, and ethical governance. For practitioners, this review underscores that sustainable digital transformation depends not solely on advanced AI tools, but on emotionally intelligent leadership capable of preserving human dignity within increasingly automated organizational systems.

THEORETICAL BACKGROUND

1. Artificial Intelligence in Human Resource Development

Artificial Intelligence encompasses computational systems capable of performing tasks traditionally requiring human intelligence, including pattern recognition, natural language processing, predictive analytics, and autonomous decision-making [31]. In HRD contexts, AI applications span the entire employee lifecycle: recruitment (algorithmic screening, chatbot interviews), onboarding (personalized learning paths), development (adaptive learning systems, skill gap analysis), performance management (predictive analytics, sentiment analysis), and succession planning (talent pipeline modeling) [7][34].

Recent scholarship identifies both opportunities and challenges in AI-augmented HRD. Opportunities include enhanced efficiency through automation of routine tasks, improved decision quality through data-driven insights, personalization of learning experiences at scale, and identification of latent talent through pattern recognition [7]. However, significant challenges remain, including algorithmic bias that perpetuates historical discrimination, privacy concerns regarding employee data, limited transparency and explainability of AI decisions, deskilling of HRD professionals due to overreliance on automation, and ethical dilemmas in algorithmic management [21]. These concerns highlight that AI implementation in HRD is not merely technical but deeply organizational and ethical.

2. Emotional Intelligence in HRD Practice

Emotional Intelligence (EI), conceptualized as the ability to perceive, understand, manage, and utilize emotions effectively [32][15], has emerged as a critical competency in HRD scholarship. Mayer and Salovey's ability model defines EI through four branches: perceiving emotions accurately, using emotions to facilitate thinking, understanding emotional meanings and transitions, and managing emotions in oneself and others [24]. Goleman's mixed model integrates cognitive abilities with personality traits, emphasizing self-awareness, self-regulation, motivation, empathy, and social skills [16].

Theoretical foundations for EI in HRD include Social Cognitive Theory, which explains how emotional self-efficacy influences learning and performance [3]; Affective Events Theory, which links workplace events to emotional reactions and subsequent behaviors [41]; and Conservation of Resources Theory, which positions EI as a personal resource that helps individuals cope with workplace demands [17]. Meta-analytic evidence confirms positive relationships between EI and job performance, leadership effectiveness, and organizational citizenship behaviors [29], reinforcing its strategic importance for HRD practice.

3. The Case for AI-EI Synergy in HRD

The concept of synergy where combined elements produce outcomes exceeding the sum of individual contributions provides theoretical grounding for examining AI–EI integration in HRD [10]. We argue that AI and EI represent complementary capabilities that, when effectively integrated, enhance HRD outcomes beyond what either achieves independently.

Empirical support for synergy can be observed in adjacent domains. In healthcare, AI diagnostic systems demonstrate superior effectiveness when combined with physician judgment compared to either alone [36]. In education, adaptive learning systems yield improved outcomes when teachers use emotional intelligence to contextualize and

supplement algorithmic recommendations [18]. These findings suggest that HRD contexts may similarly benefit from structured AI-EI integration. However, systematic evidence within HRD remains limited—highlighting the necessity of the present review.

METHODS

This study employed a systematic literature review guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure transparency, rigor, and reproducibility [30]. Although the review protocol was not registered in PROSPERO due to its non-medical focus, core systematic review principles were applied, including predefined research questions, explicit inclusion and exclusion criteria, comprehensive search strategies, and transparent reporting.

The literature search was conducted in the Scopus database, selected for its multidisciplinary coverage and high-quality indexing of social and management journals. The search covered publications from January 2019 to January 2026, capturing recent developments in AI-enabled HRD transformation during the acceleration of digitalization. The search strategy integrated three concept clusters—artificial intelligence, emotional intelligence, and human resource development—using Boolean operators.

The inclusion criteria were:

1. peer-reviewed journal articles or conference proceedings;
2. published between 2019 and January 2026;
3. written in English; and
4. explicitly addressing the intersection of AI-related technologies, emotional intelligence competencies, and HRD/HRM contexts.

Studies were excluded if they:

1. focused solely on AI without EI integration;
2. discussed EI without technological context;
3. lacked HRD/HRM relevance;
4. were non-peer-reviewed documents; or
5. were published in languages other than English.

Study selection followed the PRISMA four-stage process [30], resulting in **14 eligible** studies from an initial pool of 81 records, with substantial interrater reliability (Cohen's $\kappa = 0.78$). Data extraction was performed using a structured template capturing bibliographic information, study characteristics, conceptual focus, key findings, and methodological quality indicators. Quality assessment was conducted using an adapted checklist from the Mixed Methods Appraisal Tool (MMAT) [19], evaluating clarity of purpose, methodological appropriateness, procedural transparency, coherence of results, and acknowledgment of limitations. Data synthesis employed a thematic synthesis approach involving line-by-line coding, descriptive theme development, and analytical theme generation [35]. Throughout the synthesis process, attention was given to methodological variation, consistency and contradictions in findings, and identification of research gaps, enabling an integrative understanding of AI–EI synergy in HRD within digital transformation contexts.

RESULTS AND DISCUSSION

Study Selection and Characteristics

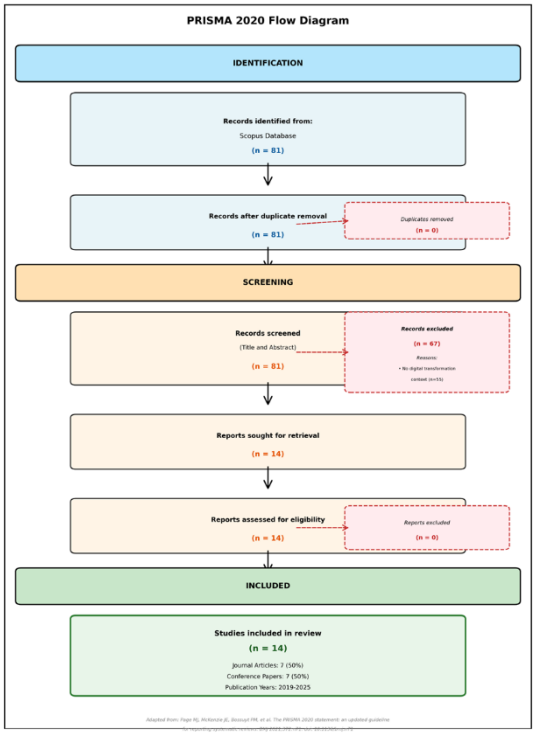


Figure 1 presents the PRISMA flow diagram documenting the study selection process. The systematic search identified 81 records from Scopus. No duplicates were detected, resulting in 81 unique records for screening. Title and abstract screening led to exclusion of 67 records that did not meet eligibility criteria. The primary reasons for exclusion were: absence of digital transformation context (n=55, 82.1%), non-peer-reviewed document type (n=26, 38.8%), insufficient focus on AI concepts (n=5, 7.5%), insufficient focus on EI concepts (n=2, 3.0%), and lack of HRD/HRM relevance (n=1, 1.5%). Note that individual studies could be excluded for multiple reasons, hence the sum of exclusion reasons exceeds the number of excluded studies.

Following eligibility assessment, 14 studies met all inclusion criteria and were included in the qualitative synthesis. These studies comprised 7 journal articles (50%) and 7 conference papers (50%), published between 2019 and 2025. The included studies accumulated 240 citations (M = 17.14, Mdn = 4, range = 0-175), with citation counts reflecting both research impact and recency of publication.

Table 1. PRISMA Flow Summary

PRISMA Stage	n
Identification: Records identified from Scopus	81
Screening: Records after duplicate removal	81
Screening: Records screened (title/abstract)	81

Screening: Records excluded	67
Eligibility: Full-text articles assessed	14
Included: Studies included in synthesis	14

Study Characteristics and Descriptive Analysis

Table 2 presents characteristics of the 14 included studies. Publication years ranged from 2019 to 2025, with notable increase in recent years: 2019 (n=1), 2020 (n=1), 2021 (n=1), 2022 (n=3), 2023 (n=1), 2024 (n=4), 2025 (n=3). This temporal trend reflects growing scholarly interest in AI-EI integration, likely accelerated by the COVID-19 pandemic's catalytic effect on digital transformation.

Studies were published across diverse outlets including Management Decision (n=2), Leadership and Organization Development Journal, Human Resource Development International, Advances in Developing Human Resources, and various conference proceedings. The methodological distribution revealed: computational/ML-based approaches (n=5, 35.7%), quantitative methods (n=3, 21.4%), conceptual/literature reviews (n=1, 7.1%), qualitative methods (n=1, 7.1%), and mixed or unspecified approaches (n=4, 28.6%). This diversity reflects the multidisciplinary nature of the research area, though the predominance of computational methods indicates a technology-centric orientation in current literature.

Geographic contexts, where specified, included India (n=2), Europe (n=2), Africa (n=1), and Middle East (n=1), with several studies not specifying geographic context or claiming global applicability. The limited geographic diversity suggests potential publication bias toward Western contexts and indicates need for cross-cultural research.

Regarding AI technologies examined, studies most frequently addressed: AI-driven HRM systems (n=6), machine learning algorithms (n=5), big data analytics (n=3), and automation/algorithmic management (n=2). Emotional intelligence was operationalized through various constructs: general EI (n=10), soft skills (n=2), empathy (n=3), and emotional competencies (n=4). HRD/HRM processes studied included: talent management and recruitment, learning and development, performance management, leadership development, organizational resilience, and change management.

ID	Authors	Year	Title	Document Type	Research Method	AI Concepts	EI Concepts	Leadership Concepts	Citations	DOI
1	Mwita, K.M.; Kitole, F.A.	2025	Potential benefits and challenges of artificial intelligence in human resource management in public institutions	Article	Quantitative	Artificial Intelligence (general)	Emotional Intelligence	Leadership (general)	7	10.1007/s44282-025-00175-8
2	Alwali, J.; Alwali, W.	2025	Linking AI-driven HRM and emotional intelligence to leadership effectiveness	Article	Conceptual/Literature Review	Artificial Intelligence (general)	Emotional Intelligence	Leadership Effectiveness; Leadership	3	10.1108/LODJ-05-2025-0358

ID	Authors	Year	Title	Document Type	Research Method	AI Concepts	EI Concepts	Leadership Concepts	Citations	DOI
			and employee performance					Development		
3	del Barone, L.; de Gennaro, D.; Buonocore, F.	2025	AI-driven HRM and managerial competencies: strengthening organizational resilience in Public Administration	Article	Qualitative	Artificial Intelligence (general)	Emotional Intelligence	Leadership Development	1	10.1108/MD-06-2024-1252
4	Manoharan, G.; Sharma, P.; Chaudhary, V.; Biswas, P.; Sharma, M.K.; Lourens, M.	2024	The Future of Work: Examining the Impact of AI/ML on Job roles, Organizational Structures, and Talent Management Practices	Conference paper	Computational/ ML-based	Machine Learning; Automation	Emotional Intelligence	Leadership (general)	4	10.1109/TQCEBT59414.2024.10545125
5	McLean, G.N.; González-Ortiz-De-Zárate, A.	2024	Revolutionizing HRD through digitalization	Article	Computational/ ML-based	Machine Learning	Emotional Intelligence (general)	Leadership (general)	3	10.1080/13678868.2024.2399492
6	Kumar, R.; Gupta, D.K.	2024	Restructuring of human resource development in IIT libraries of North India in new digital era	Article	Quantitative	Artificial Intelligence (general)	Emotional Intelligence (general)	Leadership Development	0	10.1108/GKMC-05-2023-0173
7	Murphy, A.; Alqassab, Y.;	2024	Knowledge Continuity in Space Organizations: Adaptive Strategies for	Conference paper	Not clearly specified	Artificial Intelligence (general)	Emotional Intelligence (general)	Leadership (general)	0	10.52202/078376-0014

ID	Authors	Year	Title	Document Type	Research Method	AI Concepts	EI Concepts	Leadership Concepts	Citations	DOI
	Chen, C.T.-B.; Laamoumi, O.; McKay, M.; Nogueira, N.; del Valle Pacheco, I.C.; Saijo, M.; Sordello, M.; Valentino, M.		Successful Intergenerational Knowledge Sharing							
8	Dehbozorgi, N.; Parizi, R.M.	2023	Enhancing Competency-Based Learning and Employability through a Course Recommender AI-Assisted System	Conference paper	Not clearly specified	Artificial Intelligence (general)	Emotional Intelligence (general)	Leadership (general)	3	10.1145/3585059.3611435
9	Bennett, E.E.; McWhorter, R.R.	2022	Dancing in the Paradox: Virtual Human Resource Development, Online Teaching, and Learning	Article	Not clearly specified	Artificial Intelligence (general)	Emotional Intelligence (general)	Leadership (general)	17	10.1177/15234223221079440
11	Achchab, S.; Temsamani, Y.K.	2022	Use of Artificial Intelligence in Human Resource Management: "Application of Machine Learning	Conference paper	Computational/ ML-based	Machine Learning	Empathy	Leadership (general)	15	10.1007/978-3-030-85365-5_20

ID	Authors	Year	Title	Document Type	Research Method	AI Concepts	EI Concepts	Leadership Concepts	Citations	DOI
			Algorithms to an Intelligent Recruitment System"							
10	Doucette, K.; Woo, J.	2022	BUILDING DIGITAL COMPETENCIES AND CULTIVATING INNOVATION IN AN INTEGRITY ENVIRONMENT	Conference paper	Computational/ ML-based	Machine Learning; Automation; Big Data Analytics	Emotional Intelligence (general)	Leadership (general)	0	10.1115/IPC2022-87051
12	Vijh, G.; Sharma, R.; Agrawal, S.	2021	The Heartfelt and Thoughtful Rulers of the World: AI Implementation in HR	Conference paper	Quantitative (ML/Computational)	Machine Learning	Empathy	Leadership (general)	5	10.1007/978-981-16-1480-4_24
13	Dantas, D.; Filgueiras, L.V.L.; Brandão, A.A.F.; Machado Domingues, M.C.; Ferreira, M.R.	2020	Detecting IoT Applications Opportunities and Requirements Elicitation: A Design Thinking Based Approach	Conference paper	Computational/ ML-based	Machine Learning; Big Data Analytics	Empathy	Leadership (general)	7	10.1007/978-3-030-50344-4_7
14	Caputo, F.; Cillo, V.; Candelo, E.;	2019	Innovating through digital revolution: The role of soft skills and Big Data in increasing firm performance	Article	Quantitative	Big Data Analytics	Soft Skills	Leadership (general)	175	10.1108/MD-07-2018-0833

ID	Authors	Year	Title	Document Type	Research Method	AI Concepts	EI Concepts	Leadership Concepts	Citations	DOI
	Liu, Y.									

Quality Appraisal Results

Quality appraisal revealed generally adequate methodological quality across included studies. All 14 studies (100%) clearly stated research questions or objectives. Thirteen studies (92.9%) employed methodologies appropriate to their research questions, with one conceptual paper lacking explicit methodological framework. Transparency of procedures varied: 10 studies (71.4%) provided sufficient detail for replication, while 4 studies (28.6%) offered limited methodological transparency, particularly regarding data analysis procedures. Coherence between data and conclusions was strong in 12 studies (85.7%), with 2 studies (14.3%) making claims extending beyond their data. All studies (100%) acknowledged at least some limitations, though depth of critical reflection varied.

Notably, quality challenges were more pronounced in conference papers compared to journal articles, likely reflecting space constraints and less rigorous peer review. The predominance of computational studies raised questions about theoretical grounding, as several focused primarily on algorithmic performance without substantive engagement with HRD theory. These quality considerations informed our interpretation of findings, with greater confidence placed in methodologically rigorous studies and caution exercised regarding claims from studies with quality concerns.

Thematic Synthesis: Five Major Themes

The thematic synthesis identified five key themes that illustrate the relationship between artificial intelligence (AI), emotional intelligence (EI), and Human Resource Development (HRD). These five themes overlap and collectively demonstrate patterns of technology integration and human competency in the context of digital transformation.

Theme 1: AI-Driven HRD Decision-Making and Digital Transformation

The first theme highlights the role of AI in transforming HRD decision-making through algorithmic recruitment, AI-based learning systems, predictive analytics, and automated performance evaluations. AI improves efficiency, decision quality, personalized learning, and workforce planning. However, key challenges include algorithmic bias, lack of transparency, the risk of deskilling, and employee resistance. The study shows that successful AI implementation relies heavily on the technical literacy and emotional intelligence of HRD professionals to interpret algorithmic results, manage change, and maintain trust. These findings support the complementarity thesis that AI provides analytical power, while EI provides contextual interpretation and relationship management.

Theme 2: Emotional Intelligence as a Critical HRD Competency in Digital Contexts

All studies emphasize EI as a core competency in digital-era HRD. EI serves to complement AI's limitations in understanding emotions, facilitating human-AI collaboration, maintaining organizational culture and employee engagement, addressing ethical dilemmas, and managing resistance to change. Research shows that EI becomes

increasingly valuable as AI adoption increases, as relational, ethical, and contextual dimensions cannot be replaced by algorithms. This confirms that EI is an increasingly strategic human capability in digital workplaces.

Theme 3: Human-AI Collaboration Mechanisms in HRD Practice

Only one study explicitly examines human-AI collaboration mechanisms, highlighting a significant research gap. Effective collaboration requires understanding AI's capabilities and limitations, assessing when to ignore algorithmic recommendations, translating AI results into HRD interventions, and empathetic communication of decisions. EI plays a crucial role in detecting bias, understanding the emotional impact of AI-based decisions, and maintaining human connections. The paucity of studies on the practical integration of AI and EI demonstrates the urgent need for more in-depth research.

Theme 4: Ethical Challenges and Trust in AI-Augmented HRD

The ethics theme highlights issues of algorithmic bias, privacy, transparency, accountability, and distributive justice. EI is seen as crucial for identifying potential harms to employees, considering stakeholder perspectives, and balancing efficiency with ethical principles. However, efficiency pressures, technical complexity, and organizational power dynamics often undermine the ethical role of HRD. Therefore, a formal governance framework that institutionalizes EI-based ethical assessments is needed.

Theme 5: Emerging Theoretical Frameworks for Digital-Era HRD

Nine studies developed conceptual frameworks that view AI and EI as complementary capabilities, influenced by contextual factors, and oriented toward organizational outcomes such as resilience and performance. While diverse theoretical perspectives enrich the discourse, theoretical fragmentation and a lack of empirical validation limit the accumulation of knowledge. This gap highlights the need for an integrative framework that unifies findings across studies.

Algorithmic Bias in Recruitment and the Ethical Role of Managerial Emotional Intelligence

Algorithmic bias in AI-driven recruitment refers to systematic discrimination embedded within automated hiring systems due to biased training data, flawed model assumptions, or historical labor market inequalities. AI-based recruitment tools—such as automated CV screening, predictive performance scoring, video-interview analytics, and machine learning-based candidate ranking—often rely on past organizational data. When historical datasets reflect gender, age, ethnic, or educational disparities, algorithms may reproduce and even amplify these structural biases. Studies published in outlets such as Management Decision and Leadership and Organization Development Journal indicate that AI systems optimized primarily for predictive accuracy can unintentionally privilege dominant profiles while marginalizing non-traditional candidates. The opacity of "black-box" models further complicates detection, increasing the risk of automation bias, where managers over-rely on algorithmic recommendations without critical scrutiny.

In this context, managerial Emotional Intelligence (EI) functions as an ethical intervention mechanism. EI enables HR leaders to recognize the emotional and social consequences of AI-supported decisions, including perceptions of injustice, reduced trust,

and reputational damage. Managers with high EI are better equipped to question anomalous algorithmic patterns, detect potential unfairness, and exercise empathetic judgment in borderline cases. Moreover, EI supports transparent and compassionate communication with candidates and fosters inclusive dialogue within organizations regarding AI governance.

Thus, EI moderates the implementation of AI-driven decisions by embedding ethical reflection, contextual sensitivity, and human accountability. Rather than replacing human judgment, AI requires emotionally intelligent oversight to ensure fairness, transparency, and alignment with human-centered HRD values.

DISCUSSION

Synthesis of Findings: The Complementarity Thesis

This synthesis supports the complementarity thesis that artificial intelligence (AI) capabilities and emotional intelligence (EI) competencies reinforce one another in improving Human Resource Development (HRD) outcomes. The findings reject technological determinism and the substitution narrative that AI will replace human judgment. Instead, AI contributes analytical power, scalability, and predictive accuracy, whereas EI contributes contextual sensitivity, ethical discernment, and relational intelligence.

This synergy can be further explained through Socio-Technical Systems Theory, which posits that organizational performance depends on the joint optimization of technical systems and social systems. Within this perspective, AI represents the technical subsystem algorithms, machine learning, predictive analytics, and automation while EI represents a critical element of the social subsystem values, interpersonal processes, leadership behaviors, and ethical norms. Digital transformation, therefore, is not merely the deployment of advanced tools, but the recalibration of social structures, decision-making routines, power relations, and cultural expectations. Without emotional intelligence embedded in leadership and HRD practice, AI adoption risks creating technocratic rigidity, employee resistance, and ethical blind spots. Conversely, strong EI without technological integration limits scalability and data-driven precision. The transformation succeeds only when both subsystems evolve together.

Four mechanisms explain this relationship:

1. **functional complementarity**, dividing analytical and relational roles;
2. **augmentation**, where AI strengthens human decision capacity;
3. **moderation**, where EI determines responsible AI adoption; and
4. **mediation**, where AI outputs are interpreted through emotionally intelligent judgment.

This integrative perspective extends the Resource-Based View and HRD theory by framing AI–EI synergy as a socio-technical capability rather than a purely technological advancement.

Theoretical Contributions and the AIEIS-HRD Framework

The AIEIS-HRD framework conceptualizes AI capabilities (predictive analytics, machine learning, automation), EI competencies (self-awareness, empathy, relational regulation), integration mechanisms, contextual contingencies, and HRD transformation outcomes. From a socio-technical standpoint, the framework emphasizes structural alignment between digital infrastructures and human competencies. Organizational

culture, industry characteristics, workforce demographics, and national culture shape whether socio-technical alignment produces improved learning, resilience, engagement, and ethical governance.

Methodological Critique and Evidence Quality

The methodological evaluation revealed important limitations. The predominance of cross-sectional designs hampers causal inference. The reliance on self-perception surveys increases the risk of common method bias. The lack of experimental designs limits testing causal mechanisms. The concentration of studies in Western contexts reduces cross-cultural generalizability. Furthermore, many studies focus on algorithm performance without exploring actual HRD practices. These limitations indicate that the findings are preliminary and the AIEIS-HRD framework needs further empirical testing.

Practical Implications for HRD Practice

Practical implications include developing HR professionals through the integration of AI and EI literacy, strengthening ethical and analytics-based HR curricula, and implementing humanistic AI in organizations. Organizations are advised to involve high-EI professionals in AI system design, maintain human oversight in critical decisions, and manage change empathetically. For HRD research, evaluations need to go beyond efficiency to decision quality, employee experience, and ethical impact, while developing measures of AI–EI integration and research ethics guidelines.

CONCLUSION

This systematic literature review analyzes the synergistic relationship between Artificial Intelligence (AI) and Emotional Intelligence (EI) in Human Resource Development (HRD). Applying PRISMA guidelines, the study synthesizes 14 selected articles from an initial pool of 81 records. The findings reveal that AI and EI function as complementary rather than competing capabilities in HRD practice, addressing different yet interdependent dimensions of decision-making, learning, and employee development.

The review contributes to HRD scholarship in three ways. First, it provides one of the earliest systematic syntheses at the AI–EI–HRD intersection, highlighting limited yet emerging evidence while identifying theoretical and methodological gaps. Second, it proposes the AI EI Synergy Framework for Digital-Era HRD Transformation (AIEIS-HRD), explaining how AI and EI interact through complementarity, augmentation, moderation, and mediation mechanisms within a socio-technical perspective. Third, it formulates a research agenda to guide future empirical studies and practical applications.

For practice, the review emphasizes integrating AI literacy with emotional intelligence development, strengthening ethical AI governance, and preserving human-centric values during automation. In countries such as Indonesia, where collectivist cultural norms, relational leadership, and high-context communication remain strong, organizations should avoid implementing AI tools as purely technical upgrades. Instead, they should: (1) introduce parallel EI training programs alongside AI system adoption; (2) embed empathy, ethical reflection, and bias awareness into digital transformation workshops; (3) involve emotionally intelligent leaders in AI system design and decision governance; and (4) foster open dialogue to mitigate cultural resistance and trust deficits.

Ultimately, sustainable HRD transformation in the digital era requires balanced integration of technological sophistication and emotionally intelligent social adaptation.

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