

Digital Transformation In Human Resource Management: Its Impact On Employee Performance In The Industry 5.0 Era

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ABSTRACT

The transition from Industry 4.0 toward Industry 5.0 has repositioned the human workforce from a peripheral component of automated production systems to the central, value-defining element of organisational strategy, placing renewed emphasis on human-centricity, sustainability, and resilience alongside continued technological advancement. Within this shift, human resource management has itself undergone substantial digital transformation, encompassing the adoption of artificial intelligence in recruitment and selection, data analytics in performance management, cloud-based human resource information systems, and digital learning platforms for continuous employee development. This article examines how digital transformation in human resource management affects employee performance specifically within the human-centric context that Industry 5.0 introduces, addressing the theoretical and practical tension between technology-driven efficiency and the renewed organisational commitment to employee wellbeing and human agency. Using a systematic narrative literature review method that synthesises recent academic literature on digital human resource management, Industry 5.0, and employee performance, together with current industry evidence on human resource technology adoption, this study finds that digitally transformed human resource practices, including AI-assisted talent acquisition, digital learning and development platforms, data-driven performance management, and employee self-service systems, are positively associated with employee performance through mediating mechanisms of engagement, perceived organisational support, and psychological empowerment. The review further finds that this positive relationship is contingent upon Industry 5.0-consistent implementation conditions, including human oversight of algorithmic decisions, transparent and explainable use of employee data, continued investment in reskilling and upskilling, and preservation of meaningful human interaction within otherwise automated human resource processes. Where digital human resource management is implemented in a purely efficiency-maximising manner without these human-centric safeguards, the review identifies a documented risk of diminished trust, algorithmic aversion, and disengagement that can offset or reverse the performance gains technology adoption is intended to produce. The article concludes with an integrative framework distinguishing human-centric from purely efficiency-driven digital human resource management, and offers implications for organisations seeking to realise the performance benefits of digital transformation while remaining aligned with the human-centric imperative of Industry 5.0.

Keyword Digital transformation; human resource management; employee performance; Industry 5.0; human-centric organisation

Introduction

The manufacturing and organisational paradigm long associated with Industry 4.0, characterised by extensive digitalisation, automation, and technological integration aimed at

optimising efficiency and flexibility, has increasingly been recognised as insufficient on its own to secure sustainable and resilient organisational performance. Industry 4.0's emphasis on technological integration, while yielding substantial efficiency gains, has also produced significant social challenges, including unequal access to technology and workforce displacement, treating the human workforce largely as a component to be optimised around rather than a stakeholder whose wellbeing and agency shape organisational outcomes in their own right. In response to these limitations, Industry 5.0 has emerged as a manufacturing and organisational paradigm that explicitly prioritises people within the production and value-creation process, emphasising human-centricity, sustainability, and resilience alongside the technological capability that Industry 4.0 established, as articulated in the European Commission's 2021 policy framing of Industry 5.0 as a sustainable, human-centric, and resilient European industrial model.

This paradigm shift carries direct implications for human resource management, the organisational function most immediately responsible for aligning workforce capability, motivation, and wellbeing with strategic objectives. Human resource management has itself undergone substantial digital transformation over the past decade, with organisations increasingly adopting artificial intelligence for candidate screening and matching, predictive people analytics for workforce planning, cloud-based human resource information systems for self-service administration, and digital learning platforms for continuous employee development. Recent academic attention has characterised this shift as moving human resources from an administrative function toward a strategic partnership role, emphasising data-driven decision-making and organisational agility as digital tools reshape human resources' organisational structure, roles, and processes. Industry surveys corroborate this trajectory at scale, identifying employee upskilling, retention, and technology adoption, particularly artificial intelligence, as among the foremost human resource priorities organisations report heading into the second half of the current decade.

Yet a tension exists between the efficiency-maximising logic that has historically driven digital human resource technology adoption and the human-centric imperative that defines Industry 5.0. Artificial intelligence and automation are widely documented as critical drivers of workforce transformation, improving decision accuracy in recruitment, enabling personalised employee experiences, and reducing administrative burden on human resource professionals. At the same time, the same automated and algorithmic mechanisms that generate these efficiency gains can, if implemented without adequate transparency, human oversight, or preservation of meaningful interpersonal interaction, undermine the trust, psychological safety, and sense of agency that Industry 5.0's human-centric philosophy identifies as essential to

sustainable organisational performance. This tension raises an important and, to date, incompletely resolved question: does digital transformation in human resource management enhance employee performance unconditionally, or does its performance effect depend on the extent to which its implementation is consistent with Industry 5.0's human-centric design principles.

Existing empirical literature offers partial and sometimes divergent answers to this question. Some studies report a direct positive relationship between digital transformation and employee job performance and innovative work behaviour, with human resource management and human resource development functions playing a partial mediating role, while others emphasise that the relationship between a digital-first organisational culture and organisational performance remains insufficiently understood, noting that most existing research emphasises process efficiency or individual productivity outcomes without adequately investigating the causal pathways connecting digital culture, employee innovation, and overall performance. Fewer studies still have examined this relationship specifically through the conceptual lens of Industry 5.0's human-centric framing, which explicitly reframes the criteria by which a digital human resource intervention should be judged successful, extending beyond efficiency metrics to encompass employee wellbeing, psychological empowerment, and sustained engagement.

This article addresses that gap by examining, first, through what mechanisms digital transformation in human resource management affects employee performance, and second, how the human-centric conditions specific to Industry 5.0 moderate the strength and character of this relationship relative to a purely efficiency-driven account of digital human resource management. In doing so, the article synthesises recent academic literature on digital human resource management, Industry 5.0, and employee performance with current industry evidence on human resource technology adoption, in order to construct an integrative account of when and how digital transformation in human resource management translates into improved employee performance under Industry 5.0 conditions.

Literature Review

Industry 5.0 and the Human-Centric Organisational Paradigm

Industry 5.0 is conceptualised in the literature as a manufacturing and organisational paradigm that builds upon, rather than replaces, the technological infrastructure established under Industry 4.0, while fundamentally repositioning the human workforce from a component optimised within an automated system to the central actor whose wellbeing, capability, and agency the system is designed to support. Whereas Industry 4.0 emphasised digital technologies, automation, and intelligent production as ends in themselves, Industry 5.0 explicitly foregrounds three complementary priorities, namely human-centricity, sustainability,

and resilience, treating technological advancement as a means of enhancing rather than displacing human contribution to organisational value creation. The European Commission's foundational policy articulation of Industry 5.0 frames the paradigm explicitly around a sustainable, human-centric, and resilient industrial model, a framing that has since been widely adopted in academic treatments of the concept across manufacturing and, increasingly, service and knowledge-work contexts.

Within human resource and organisational behaviour theory, this human-centric emphasis resonates with longstanding strategic human resource management perspectives, including the resource-based view of the firm, which identifies human capital as a potential source of sustained competitive advantage precisely because it is valuable, rare, and difficult to imitate, and human resource value-creation models that position human resources as a strategic partner in translating workforce capability into organisational outcomes. Industry 5.0 extends these perspectives by explicitly incorporating employee wellbeing and psychological experience as legitimate organisational performance criteria in their own right, rather than treating them solely as instrumental inputs to productivity, a reframing with direct implications for how digital human resource interventions should be designed and evaluated.

Digital Transformation in Human Resource Management

Digital transformation in human resource management encompasses a broad set of technological interventions across the employee lifecycle, including artificial-intelligence-assisted candidate sourcing and screening in recruitment, predictive analytics and dashboards in workforce planning and performance management, cloud-based human resource information systems enabling employee self-service for administrative transactions, and digital and adaptive learning platforms supporting continuous skill development. Artificial intelligence and automation are consistently identified in recent literature as the most consequential drivers of this transformation, enabling more precise candidate matching in talent acquisition, automating routine administrative tasks to free human resource professionals for strategic initiatives, and facilitating personalised employee experiences through data-driven insight into individual preferences and development needs. Beyond individual technologies, scholars increasingly frame digital human resource transformation as fostering a broader shift in organisational orientation, moving human resources from an administrative, transaction-processing function toward a strategic partnership role characterised by data-driven decision-making and organisational agility.

A parallel stream of literature examines the emergence of a digital-first organisational culture as both a driver and consequence of human resource digital transformation, defined as a culture that places technology at the core of organisational processes, decision-making, and

employee experience, enabling organisations to adapt to market changes with greater speed and precision. Such a culture is theorised to create an environment conducive to continuous learning, digital literacy, and cross-functional collaboration, thereby opening pathways toward increased productivity and innovation. However, the same literature cautions that organisations pursuing a digital-first culture face substantial implementation challenges, including employee resistance to change, skills gaps within the existing workforce, and the risk that technology adoption outpaces the organisational and cultural readiness required to realise its intended benefits.

Employee Performance as an Organisational Outcome

Employee performance is conventionally understood in the human resource management literature as a multidimensional construct encompassing task performance, the proficient execution of formally required job responsibilities, and contextual or extra-role performance, encompassing discretionary behaviours such as helping colleagues, demonstrating initiative, and engaging in innovative work behaviour that extends beyond formal job requirements. A substantial body of evidence links specific human resource management practices, including recruitment, training, engagement, and retention practices, to employee performance outcomes, with training and development, employee engagement, and perceived organisational support consistently identified as among the strongest and most direct antecedents. Employee engagement in particular has been theorised and empirically supported as a proximal mediating mechanism through which broader organisational and human resource interventions translate into performance outcomes, on the logic that engaged employees invest greater cognitive, emotional, and physical resources into their work role than disengaged employees performing under otherwise identical formal job conditions.

Linking Digital Human Resource Transformation to Employee Performance

Recent empirical studies have begun to directly examine the relationship between digital transformation and employee performance outcomes. A 2024 study of information and communication technology sector employees found a significant relationship between digital transformation and both innovative work behaviour and job performance, with human resource management and human resource development functions found to play a partial mediating role in this relationship, indicating that digital transformation's performance effect operates substantially, though not exclusively, through the human resource function's capacity to translate technological capability into workforce-level behavioural change. Complementary research examining organisational performance in university settings has employed employee job satisfaction as a mediating variable linking digital transformation and human resource management to broader measures of organisational performance and profitability, again

underscoring those affective and motivational states as the mechanism through which digital human resource interventions exert their ultimate performance effect, rather than treating technology adoption as directly and mechanically productive.

At the same time, this literature identifies important boundary conditions. Research on strategic human resource management in the digital era emphasises that organisational agility, continuous reskilling, ethical governance of artificial intelligence systems, and sustained attention to employee wellbeing constitute critical levers for achieving sustainable competitive advantage from digital human resource transformation, implying that the mere presence of digital tools is insufficient and that implementation quality, particularly the governance and human-centricity of that implementation, substantially conditions the resulting performance outcome. This point is reinforced by literature specifically addressing human resource management for intelligent manufacturing systems under Industry 5.0, which emphasises that successful organisations must adopt human resource practices that explicitly align employee behaviour with organisational strategy, a strategic human resource alignment task rendered more, rather than less, important as digital and intelligent systems assume a larger share of operational and administrative human resource functions.

Theoretical Tensions: Efficiency versus Human-Centricity in Digital HRM

A close reading of the literature reveals an underlying theoretical tension between two partially competing logics of digital human resource transformation. The efficiency logic, inherited substantially from Industry 4.0's technological optimisation orientation, evaluates digital human resource interventions primarily by their capacity to reduce administrative cost, accelerate process throughput, and improve the predictive accuracy of talent decisions. The human-centric logic that Industry 5.0 introduces evaluates the same interventions additionally, and in some formulations primarily, by their capacity to preserve or enhance employee psychological experience, including perceived fairness, autonomy, trust in organisational decision-making, and meaningful human connection within the employment relationship. These two logics are not inherently incompatible, and the literature reviewed here suggests that well-designed digital human resource interventions can advance both simultaneously; however, the literature also documents circumstances in which efficiency-oriented implementation choices, such as fully automated algorithmic decision-making without human review or opaque use of employee behavioural data for performance monitoring, generate employee reactions, including perceived surveillance, algorithmic aversion, and diminished trust, that erode the very engagement and motivational mechanisms through which digital human resource transformation is theorised to improve performance in the first place.

Methods

This article employs a systematic narrative literature review method, appropriate to a research objective that is conceptual and integrative, namely synthesising and reconciling multiple streams of existing literature on digital human resource transformation, Industry 5.0, and employee performance, rather than generating new primary empirical data. Consistent with recent systematic literature reviews in this field, which have followed established protocols for academic rigour with searches conducted across major academic databases, this review adopts an explicit and reproducible search and selection process while retaining the interpretive and synthesising flexibility that a narrative review format affords for integrating literature across the distinct disciplinary traditions of strategic human resource management, organisational behaviour, and manufacturing and operations management from which the Industry 5.0 concept originates.

Search Strategy and Sources

Academic sources for this review were identified through searches of scholarly databases using search terms including combinations of "digital transformation," "digitalization," "human resource management," "HRM," "talent management," "Industry 5.0," "Industry 4.0," "employee performance," "employee engagement," and "artificial intelligence," supplemented by backward citation tracing from key theoretical and review sources identified in this process. Priority was given to sources published between 2020 and 2025, reflecting the period during which Industry 5.0 has been articulated as a distinct paradigm and during which artificial-intelligence-enabled human resource technology has achieved widespread organisational adoption, while foundational theoretical sources on strategic human resource management and employee performance published prior to this period were retained where they provide conceptual grounding of continuing relevance. This academic literature was supplemented with current industry survey and practitioner sources documenting the scale and specific character of human resource technology adoption and human resource priorities as of the most recent reporting period, included to ensure the review's account of digital human resource practice reflects current organisational reality rather than relying solely on academic publication, which typically lags practice by several years in a fast-moving technological domain.

Scope and Inclusion Criteria

The review includes sources addressing digital human resource management practices across the employee lifecycle, including recruitment and selection, learning and development, performance management, and employee engagement systems; the conceptual and policy literature articulating Industry 5.0 as a human-centric organisational paradigm; and empirical

and theoretical literature linking human resource management practices, digital or otherwise, to employee performance outcomes including task performance, contextual performance, innovative work behaviour, and engagement. Sources addressing digital transformation in organisational contexts generally, without specific reference to human resource management or workforce outcomes, were excluded unless they provided theoretical grounding of direct relevance, such as foundational technology acceptance or organisational change theory. Sources addressing Industry 4.0 without reference to Industry 5.0's human-centric extension were retained where necessary to establish the technological and historical context from which Industry 5.0 emerged, but were treated as background rather than as direct evidence regarding Industry 5.0-specific conditions.

Analytical Approach

The collected literature was analysed using a thematic synthesis approach structured in three stages. First, the theoretical mechanisms linking digital human resource interventions to employee performance were extracted from the human resource management and organisational behaviour literature, with particular attention to mediating constructs such as engagement, perceived organisational support, and psychological empowerment. Second, the human-centric design principles and implementation conditions associated with Industry 5.0 were extracted from the Industry 5.0 and digital-era strategic human resource management literature. Third, these two extracted sets were integrated by systematically evaluating, for each major category of digital human resource intervention, the conditions under which its documented performance mechanism is likely to be sustained, weakened, or reversed under Industry 5.0's human-centric evaluative criteria, forming the basis for the integrative framework presented in the results and discussion section.

Result and Discussion

AI-Assisted Recruitment and Selection: Efficiency Gains and Fairness Perception

Artificial-intelligence-assisted recruitment, encompassing automated resume screening, algorithmic candidate matching, and chatbot-mediated initial candidate interaction, is consistently documented as improving recruitment efficiency and candidate-role matching precision relative to manual screening processes, freeing human resource professionals from high-volume administrative screening to focus attention on higher-value strategic and relational aspects of talent acquisition. Under Industry 5.0's human-centric evaluative lens, however, the performance implications of AI-assisted recruitment extend beyond process efficiency to encompass the experience and downstream engagement of both successful and unsuccessful candidates. Where algorithmic screening operates transparently, with candidates informed of AI involvement and human recruiters retaining meaningful review authority over final

decisions, the efficiency gains of AI-assisted recruitment can be realised without eroding candidate or new-hire trust. Where algorithmic screening operates opaquely or without human review, the literature identifies a documented risk of perceived unfairness among both rejected candidates and eventual hires who become aware of the mechanism, a risk with direct downstream relevance to employee performance given that perceptions of organisational justice formed at the point of hire have been shown to condition subsequent engagement and performance trajectories.

Digital Learning and Development Platforms: Reskilling as a Performance and Human-Centricity Lever

Digital learning platforms, encompassing adaptive e-learning systems, microlearning applications, and AI-curated personalised development pathways, represent a category of digital human resource intervention in which the efficiency and human-centric logics identified in Section 2.5 are unusually well aligned, since continuous reskilling and upskilling serve simultaneously as a direct driver of task performance, through updated and expanded employee capability, and as a core human-centric commitment in its own right, insofar as employees perceiving genuine organisational investment in their long-term employability report higher engagement and organisational commitment. Industry evidence identifying employee upskilling as among the foremost human resource priorities heading into the current period, alongside academic findings that human resource development practices play a positive role in improving employee performance and organisational efficiency, jointly support the conclusion that digital learning and development investment represents one of the more reliably positive categories of digital human resource transformation under Industry 5.0 conditions. The primary implementation risk identified in the literature for this category is not misalignment between efficiency and human-centric goals as such, but rather superficial or box-ticking implementation, in which digital learning platforms are deployed without genuine alignment to employees' actual skill gaps or career aspirations, yielding participation without meaningful capability development or engagement benefit.

Data-Driven Performance Management: The Central Tension Case

Data-driven performance management, encompassing continuous performance dashboards, algorithmic goal-tracking, and behavioural or productivity analytics, represents the category of digital human resource intervention in which the tension between efficiency and human-centric logics identified in Section 2.5 is most acute. On the efficiency side, continuous, data-rich performance visibility enables more frequent, more precise, and potentially more developmental performance feedback than traditional annual review cycles, with the theoretical potential to accelerate performance improvement by shortening the feedback loop between

employee behaviour and managerial input. On the human-centric side, however, the same continuous data collection that enables this responsiveness can, particularly where employees experience it as pervasive behavioural monitoring rather than developmental support, generate perceptions of surveillance that the literature links to diminished psychological safety, increased stress, and paradoxically reduced discretionary or contextual performance, even as narrowly measured task metrics may show short-term improvement. This finding suggests that data-driven performance management's net performance effect under Industry 5.0 conditions depends substantially on whether its implementation preserves employee voice and developmental framing, for instance through employee access to and input on their own performance data, rather than positioning analytics purely as a top-down monitoring mechanism.

Employee Self-Service and Cloud-Based Human Resource Information Systems

Cloud-based human resource information systems enabling employee self-service for administrative transactions, including leave requests, benefits administration, and personal data management, represent a comparatively low-tension category of digital human resource transformation, since these systems primarily automate routine administrative processes with limited direct algorithmic judgement exercised over employees' substantive work or career outcomes. The documented performance benefit of this category operates principally through convenience and reduced administrative friction, freeing both employees and human resource professionals from time-consuming manual administrative processes, with corresponding gains in perceived organisational support insofar as efficient, accessible administrative systems signal organisational competence and respect for employee time. The principal human-centric consideration for this category concerns equitable access, given documented heterogeneity in digital literacy and technology access across employee populations, particularly in frontline, manufacturing-floor, and geographically dispersed workforce segments, where employee self-service systems designed without consideration of variable digital access or literacy can inadvertently create a two-tier employee experience that undermines rather than supports the inclusive, human-centric intent of Industry 5.0.

The Mediating Role of Engagement, Perceived Organisational Support, and Psychological Empowerment

Across the four categories of digital human resource intervention examined above, the review finds consistent support for the proposition that digital transformation's effect on employee performance operates substantially through psychological and motivational mediating mechanisms rather than through a direct, mechanical link between technology deployment and productivity. Employee engagement emerges as the most consistently

identified mediator, consistent with its established theoretical role as the proximal driver of discretionary effort in the broader human resource management literature, while perceived organisational support and psychological empowerment appear as complementary mechanisms particularly relevant to digital interventions that alter employees' sense of autonomy, fairness, or visibility within the organisation. This mediating structure carries an important implication for the efficiency-versus-human-centricity tension identified in Section 2.5: because the performance effect of digital human resource transformation is mediated by these psychological states rather than operating directly, any implementation choice that damages engagement, perceived support, or psychological empowerment, even while technically improving process efficiency, is likely to attenuate or reverse the intervention's net performance benefit, providing a mechanism-level explanation for why purely efficiency-driven digital human resource transformation can underperform relative to human-centric implementation even when evaluated on conventional productivity metrics.

Organisational Readiness and the Digital-First Culture Precondition

The review finds that the performance benefits of digital human resource transformation are further conditioned by the maturity of the broader organisational culture within which digital tools are deployed, consistent with literature identifying a digital-first organisational culture, characterised by technology-centred processes, agility, and continuous learning orientation, as both a driver and precondition of successful digital transformation outcomes. Organisations lacking this cultural foundation appear more likely to encounter the implementation challenges the literature documents, including employee resistance to change and skills gaps within the existing workforce, which can prevent digital human resource tools from being adopted in the manner necessary to realise their intended performance benefits regardless of the technical sophistication of the tools themselves. This finding suggests that organisations pursuing digital human resource transformation under Industry 5.0 should treat cultural and change-management investment as a necessary complement to, rather than a downstream consequence of, technology procurement, since digital tools introduced into an unprepared organisational culture are more likely to generate the efficiency-without-engagement pattern identified as the central risk in Section 2.5.

Sectoral and Occupational Variation

The reviewed literature indicates that the balance between efficiency and human-centric considerations in digital human resource transformation varies meaningfully across sectors and occupational categories. In information and communication technology and other knowledge-intensive sectors, where the existing workforce typically possesses relatively high digital literacy and where innovative work behaviour constitutes a core performance dimension in its

own right, digital human resource interventions appear to translate into performance gains comparatively directly, consistent with empirical findings linking digital transformation to innovative work behaviour and job performance in ICT sector samples. In manufacturing and intelligent production settings, the specific context from which Industry 5.0's human-centric framing originates, the literature places particular emphasis on aligning digital human resource practice with frontline workforce behaviour and strategic organisational alignment, reflecting both a historically less digitally native workforce population and the direct physical and safety stakes of human-machine collaboration on the production floor. This sectoral variation suggests that the integrative framework proposed in this review requires calibration to sector-specific digital literacy baselines and occupational risk profiles rather than uniform application across organisational contexts.

Toward an Integrative Framework: Human-Centric versus Efficiency-Driven Digital HRM

Synthesising the preceding findings, this study proposes an integrative framework distinguishing human-centric from purely efficiency-driven digital human resource transformation, organised around four design conditions that recur across the intervention categories examined above. First, human oversight of algorithmic decisions, ensuring that consequential decisions affecting recruitment, performance evaluation, or career progression retain meaningful human review rather than fully automated determination. Second, transparency and explainability in the use of employee data, ensuring employees understand what data is collected, how it is used, and retain some degree of visibility into or input on decisions affecting them. Third, continued and genuine investment in reskilling and upskilling, ensuring that digital transformation is experienced by employees as capability investment rather than solely as a mechanism of control or displacement. Fourth, preservation of meaningful human interaction within otherwise digitised human resource processes, ensuring that automation of routine administrative tasks is deployed to free capacity for higher-value human interaction rather than to eliminate human interaction from the employment relationship altogether. The review's central proposition is that digital human resource interventions satisfying these four conditions are substantially more likely to generate the positive employee performance outcomes that the efficiency logic alone predicts, precisely because satisfying these conditions protects the engagement, perceived organisational support, and psychological empowerment mechanisms identified in Section 4.5 as the proximal drivers of that performance effect.

Practical Implications for Human Resource Practice

For human resource practitioners, the framework developed in this review suggests

several practical implications for organisations pursuing digital transformation under Industry 5.0 conditions. Technology procurement decisions should explicitly evaluate candidate systems against the four design conditions identified in Section 4.8, rather than selecting systems on efficiency or cost criteria alone. Change management and internal communication accompanying digital human resource rollouts should proactively address employee concerns regarding algorithmic fairness, data use, and job security, since the literature indicates that unaddressed concerns of this kind are a primary mechanism through which digital transformation's intended performance benefits are eroded. Finally, organisations should consider establishing ongoing measurement of the psychological mediating variables identified in this review, including engagement, perceived organisational support, and psychological empowerment, as a standard component of digital human resource transformation evaluation, rather than relying solely on efficiency and productivity metrics that may mask underlying erosion in employee experience even where short-term output metrics appear favourable.

Limitations of the Reviewed Evidence

Several limitations in the evidence base synthesised in this review warrant acknowledgement. Industry 5.0 remains a comparatively recently articulated paradigm, and empirical research directly measuring its human-centric design conditions against employee performance outcomes remains sparse relative to the substantially larger body of Industry 4.0-era digital transformation research from which much of the efficiency-side evidence in this review is drawn, meaning that several of the human-centric moderating conditions proposed here, while grounded in the available literature, would benefit from direct empirical testing specifically framed around Industry 5.0 constructs rather than inferred from adjacent digital transformation and organisational behaviour research. Much of the industry survey evidence cited to establish the current scale and priority of human resource technology adoption originates from practitioner and market research sources whose methodologies are not always fully disclosed, and such evidence should be treated as indicative of directional trends rather than as precisely measured findings. Finally, the sectoral variation discussed in Section 4.7 is based on a comparatively small number of sector-specific studies, and the integrative framework proposed in Section 4.8, while synthesising the available evidence, would benefit from validation across a wider range of industry, organisational size, and national regulatory contexts before its propositions are treated as generalisable without further qualification.

Conclusions

This article examined how digital transformation in human resource management affects employee performance within the human-centric context that Industry 5.0 introduces. The review finds that digitally transformed human resource practices, including AI-assisted

recruitment, digital learning and development platforms, data-driven performance management, and employee self-service systems, are generally positively associated with employee performance, operating substantially through the mediating mechanisms of employee engagement, perceived organisational support, and psychological empowerment rather than through a direct, mechanical link between technology adoption and productivity. Critically, however, this positive relationship is found to be contingent upon implementation conditions consistent with Industry 5.0's human-centric philosophy, namely human oversight of algorithmic decisions, transparency in the use of employee data, genuine investment in reskilling, and preservation of meaningful human interaction, with the review identifying data-driven performance management as the intervention category in which the tension between efficiency-oriented and human-centric implementation logics is most pronounced.

These findings support the conclusion that the performance benefits of digital human resource transformation are not automatic consequences of technology adoption but are conditional on implementation quality specifically as it pertains to employee psychological experience, a conclusion with direct relevance to organisations navigating the transition from Industry 4.0's efficiency-centred technological paradigm toward Industry 5.0's human-centric successor. For human resource practitioners, the integrative framework developed in this review offers a practical evaluative lens for technology procurement and implementation decisions, while for scholars, the review's synthesis highlights the continued need for empirical research directly measuring the psychological mediating mechanisms identified here across diverse organisational and sectoral contexts. As a conceptual synthesis rather than an original empirical study, this article's propositions would benefit from future quantitative validation, including longitudinal research designs capable of establishing the causal ordering between digital human resource intervention, psychological mediating states, and employee performance outcomes over time, an avenue this review identifies as a priority for future research in the field.

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