

Psychological Safety as the Missing Link: A Conceptual Framework Linking Digital Human Resource Management (HRM) Practices to Employee Engagement in UK Higher Education.

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ABSTRACT

Background: Despite the investment made by UK HEIs in digitally mediated HRM, staff engagement in the sector continues to fall. This paper proposes a qualifying condition on which most studies failing to find an increase in engagement for digital HRM rest, a mediator (psychological safety) of the digital HRM or engagement relationship.

Methods and findings: The study brings together the existing literature on digital HRM, psychological safety and employee engagement to consider the impact of psychological safety on employee engagement in the UK HE. It is among the few studies that explicitly argue in favour of the psychological safety hypothesis, as opposed to the job demands-resources model, social exchange theory, perceived organizational support and organizational trust. The study presents four propositions, with boundaries, that can translate arguments into an empirical research agenda.

Conclusion: Digital HRM does not produce engaged employees automatically. Practices that are experienced as transparent, equitable, and empowering contribute to greater psychological safety and employee engagement, whereas those perceived as surveillance-driven or coercive diminish these outcomes.

Keywords: Human resource management, digital HRM, psychological safety, employee engagement, higher education, digital transformation, artificial intelligence in HRM.

INTRODUCTION

UK higher education (HE) is undergoing profound transformation as universities face increasing pressure to recruit students, declining public funding, intensified competition in league tables, and the accelerating digitalization of academic and administrative activities across the sector (Kalfa & Taksa, 2015).

In response to growing pressures to improve efficiency, support workforce planning, and manage constrained resources, higher education institutions (HEI's) are increasing adopting digitally mediated human resource management (HRM). These HRMs encompass technologies such as applicant tracking systems, electronic performance management, AI-enabled recruitment, digital learning platforms, and automated employee engagement surveys (Strohmeier, 2020). With the emergence of generative AI, HRM is evolving beyond administrative automation towards algorithm-driven evaluation, prediction, and decision-making concerning both prospective and existing employees (Budhwar et al., 2023; Ekuma, 2024).

While digital HRM promises greater operational efficiency and more data-driven decision-making, employee engagement within UK higher education has continued to decline. For the first time in over a decade, the number of academic staff leaving the sector exceeded the number entering, against a backdrop of rising workloads and sustained funding pressures (HESA, 2026). This deterioration has been linked to excessive workloads, diminished autonomy, work intensification, increased managerial surveillance, and the erosion of collegial working cultures (CIPD, 2022; UCU, 2023). However, considerably less attention has been paid to the conditions under which digital HRM practices can sustain, rather than undermine, employee engagement.

A promising explanation lies in psychological safety, defined as a shared belief that individuals can take interpersonal risks, express ideas, and be themselves without fear of negative social consequences or loss of dignity (Edmondson, 1999). When digital HRM systems are designed and implemented in ways that foster trust, employee voice, and respect. They may strengthen psychological safety and promote authentic engagement. Conversely, when these technologies are experienced as mechanisms of surveillance, managerial control, or depersonalisation, they may undermine psychological safety and weaken the employee engagement they are intended to support.

Although several streams of research address elements of this issue, few provides a comprehensive explanation. Research on digital HRM has primarily focused on technological adoption and organisational efficiency, often treating employees as passive recipients of technology. Consequently, the underlying psychological mechanisms through which digital HRM influences employee attitudes and behaviours remain insufficiently understood (Strohmeier, 2020). Similarly, research on psychological safety has established its importance for learning, voice, innovation, and performance within predominantly face-to-face organisational settings, yet has paid comparatively little attention to how digitally mediated and algorithmic HRM practices shape or diminish psychological safety (Edmondson and Lei, 2014; Newman, Donohue and Eva, 2017).

This paper addresses these gaps by integrating insights from digital HRM, psychological safety, and higher education research to develop a conceptual explanation of how digital HRM influences employee engagement. It proposes psychological safety as the key mediating mechanism linking digital HRM practices to engagement outcomes, distinguishes this explanation from competing theoretical accounts, and outlines implications for both organisational practice and future research.

CONCEPTUAL METHODOLOGY

This is a conceptual paper, as described by Gilson and Goldberg (2015), concerned with theory building through argumentation, synthesis, and critical analysis. Rather than testing theory with new empirical data, conceptual papers advance understanding by synthesising, comparing, and interrogating existing bodies of research.

The choice of this approach is methodological rather than one of convenience. Before a mediation hypothesis can be empirically tested, both the proposed mechanism and competing explanations must first be clearly specified. However, the relevant literature remains fragmented, with related concepts often described using different terminology across disciplines. Consequently, theoretical integration must precede empirical investigation. This paper therefore represents the theoretical foundation of a broader research programme rather than a substitute for subsequent empirical testing.

A systematic literature search was undertaken using Scopus, Web of Science, and Google Scholar, combining e-HRM-related terms (e.g., 'digital HRM,' 'e-HRM,' and 'AI in HRM') with keywords central to the research question, including 'psychological safety,' 'employee engagement,' and 'higher education.' The review prioritised peer-reviewed studies published from 2015 onwards, while also incorporating seminal works (Edmondson, 1999; Kahn, 1990) and grey literature from CIPD, HESA, UCU, and Universities UK to contextualise developments within the UK higher education sector. Rather than simply summarising existing evidence, the review seeks to generate theoretical insight by synthesising diverse perspectives and examining conceptual tensions and contradictions as sources of theory development (Boxall, Purcell and Wright, 2007).

Critical Synthesis

The terms digital HRM and electronic HRM are often used interchangeably, with digital HRM commonly defined as the delivery of HR policies and practices through web-based technologies (Bondarouk and Ruël, 2009). More recent conceptualisations extend this definition to include artificial intelligence, algorithmic decision-making, and advanced people analytics (Strohmeier, 2020; Budhwar et al., 2023). Within UK higher education, digital HRM increasingly encompasses AI-assisted recruitment, digital onboarding, performance dashboards, and automated employee engagement surveys. Proponents argue that these technologies streamline administrative processes, reduce bias in recruitment, enable personalised learning, and provide continuous performance feedback (Parry and Tyson, 2011; Marler and Fisher, 2013). However, from a structuration perspective, technology does not merely automate existing HR processes but reshapes the social relationships and power dynamics through which HR is enacted and experienced. Digital HRM therefore represents organisational transformation rather than simply the introduction of new technology (Orlikowski and Scott, 2014).

Critical scholars question these developments. Moore (2018) argues that digital HRM marks a shift from periodic performance appraisal to continuous algorithmic surveillance. Within universities, where autonomy, collegiality, and intrinsic motivation have traditionally characterised academic work, performance dashboards translate complex scholarly activities into measurable indicators. This can generate reactivity (Espeland and Sauder, 2007), encouraging academics to optimise measurable outputs rather than pursue broader professional goals. Such systems may foster a culture of surveillance (Ball, 2010) that weakens relational trust, even while improving efficiency and supporting professional development. Consequently, the key question is not whether digital HRM produces positive or negative outcomes, but under what organisational and interpersonal conditions these outcomes emerge, with psychological safety offering one possible explanatory mechanism.

Psychological safety was first introduced by Schein and Bennis (1965) and later defined by Edmondson (1999) as a shared belief that a team is safe for interpersonal risk-taking. It describes a work climate in which individuals feel able to ask questions, challenge assumptions, acknowledge mistakes, and raise concerns without fear of embarrassment or negative consequences. Psychological safety has consistently been associated with team learning, innovation, employee voice, and wellbeing (Newman, Donohue and Eva, 2017; Detert and Burris, 2007). A meta-analysis of 136 studies by Frazier et al. (2017) identified it as one of the strongest predictors of constructive employee behaviour. Its relevance is particularly evident in UK higher education, where work intensification, casualisation, and declining collegiality (UCU, 2023; Waring, 2017) heighten uncertainty and interpersonal risk. Nevertheless, little research has examined how digital HRM systems influence psychological safety.

Employee engagement remains one of the most widely debated constructs in HRM. Kahn (1990) conceptualised engagement as the harnessing of individuals' physical, cognitive, and emotional selves to their work roles, later operationalised through the dimensions of vigour, dedication, and absorption (Schaufeli et al., 2002). Research identifies job resources, meaningful work, and supportive line management as key antecedents of engagement (Bailey et al., 2017). However, evidence from UK higher education indicates persistently low engagement, reflected in below-average job satisfaction, declining organisational trust (CIPD, 2022), and increasing burnout and alienation (UCU, 2023). The only study applying Kahn's psychological conditions to academic work identified psychological safety, alongside meaningfulness and availability, as central to engagement (Reynell van der Ross, Olckers and Schaap, 2022), yet it did not consider the influence of digitally mediated HR systems.

Why psychological safety? Positioning the mechanism against rival explanations

For a mediating mechanism to be convincing, it must offer greater explanatory power than alternative explanations. The Job Demands–Resources model (Bakker & Demerouti, 2017) conceptualises digital HRM as either a resource or a job demand but does not explain the interpersonal fear associated with speaking up or challenging algorithmic decisions. Social Exchange Theory and Perceived Organizational Support (Blau, 1964; Eisenberger et al., 1986) account for reciprocal relationships but focus on dyadic exchanges rather than the

shared climate that enables interpersonal risk-taking among colleagues. Similarly, the Technology Acceptance Model (Davis, 1989) explains technology adoption but not why employees who value a digital system may nevertheless hesitate to question or challenge it. Organizational trust (Mayer et al., 1995) comes closest by emphasising willingness to be vulnerable, yet it concerns trust in specific actors rather than the broader interpersonal climate. Each perspective explains only part of the process; none, I argue, adequately captures the decision of autonomy-oriented professionals to speak up or withdraw. The framework therefore positions psychological safety as the central mediating mechanism, while treating these alternative explanations as important antecedents and boundary conditions that shape psychological safety.

Conceptual framework and discussion

The findings of this study extend the digital HRM model by conceptualising the relationship between digital HRM practices and employee engagement as being mediated by psychological safety. The model offers a parsimonious explanation by focusing on a single mediating mechanism rather than multiple distal outcomes. It incorporates digital HRM practices (ranging from empowering to surveillance-oriented), the central mediator (psychological safety), employee engagement, downstream outcomes (including innovation, retention, and teaching quality), and relevant boundary conditions. Figure 1 illustrates the proposed conceptual framework, and four propositions are presented to further explain the underlying mechanism.



Figure 1. The conceptual framework: psychological safety as the central mediator between digital HRM practices and employee engagement, with proposition paths (P1–P3) and moderators (P4).

Proposition 1: Digital HRM practices have contrasting effects on psychological safety. Empowering practices, such as AI-enabled personalised career development, anonymous wellbeing check-ins, and platforms supporting collaboration, signal trust, affirm competence, and encourage interpersonal risk-taking (Edmondson and Lei, 2014). By contrast, surveillance-oriented practices, including research-output dashboards, automated time tracking have objectify employees to institutional authority. This panoptic dynamic (Foucault, 1977) privileges

compliance over candour, discourages voice and discretionary risk-taking, and ultimately diminishes psychological safety and engagement.

Proposition 2: The relationship between digital HRM design and psychological safety is mediated by employees' perceptions of these systems. Psychological safety is strengthened when digital HRM is viewed as fair, transparent, and supportive of development and wellbeing. Drawing on social exchange theory (Blau, 1964) and perceived organisational support (Eisenberger et al., 1986), this proposition argues that systems interpreted as organisational investment foster trust and reciprocity, whereas those perceived as cost-cutting or managerial control weaken them. These effects are further shaped by professional identity. Academics with strong disciplinary identities (Clark, 1987) may perceive managerial technologies as encroaching on academic values (Collini, 2012), while professional services staff report that surveillance technologies heighten anxiety and constrain collegial behaviour (Waring, 2017). Consequently, digital HRM influences psychological safety differently across institutional subcultures.

Proposition 3: Psychological safety mediates the relationship between digital HRM and employee engagement. Integrating psychological safety (Edmondson, 1999) with engagement research (Bailey et al., 2017; Frazier et al., 2017), this proposition suggests that digital HRM fosters engagement when it creates the conditions of meaningfulness, safety, and availability identified by Kahn (1990). Employees are then more willing to speak up, share concerns, and experiment without fear. Conversely, surveillance-oriented and depersonalising systems encourage cognitive, emotional, and behavioural withdrawal, resulting in reduced or merely transactional engagement. This is especially significant in higher education, where teaching, research, and institutional culture depend on discretionary effort.

Proposition 4: Institutional context moderates these relationships. Higher education institutions are heterogeneous organisations (Boxall and Purcell, 2016), and the effects of digital HRM depend on governance structures, managerial practices, and employment conditions. Collegial or distributed governance, characterised by employee voice and transparent appeals processes, is more likely to strengthen psychological safety than managerial approaches prioritising accountability over autonomy. Line management quality is particularly influential (Edmondson and Lei, 2014), alongside whether employee data are used for development rather than evaluation and the nature of employment contracts. Digital surveillance combined with insecure or zero-hours contracts is therefore likely to substantially reduce psychological safety and engagement (UCU, 2023).

This framework extends existing e-HRM models by explaining how digital HRM shapes employee engagement through psychological safety. Whereas existing models primarily emphasise technology adoption, organisational outcomes, performance, or motivation (Bondarouk, Parry and Furtmueller, 2017), they pay limited attention to digitally mediated surveillance, interpersonal risk, and employee experience. By identifying psychological safety as the underlying mechanism and recognising sector-specific moderators, this framework offers a more comprehensive explanation of digital HRM outcomes in higher education.

RECOMMENDATIONS AND CONCLUSION

The findings suggest that the effectiveness of digital HRM depends less on the technologies adopted than on how they are implemented to foster psychological safety. For university leaders and HR professionals, digital HRM should not be viewed solely as a technical or efficiency-driven initiative. Instead, employees should be actively involved in the co-design of digital systems, with transparent communication regarding data collection, use, and decision-making processes. Performance data should support employee development rather than punitive monitoring, while regular perception audits should complement engagement surveys to identify how staff experience digital HRM practices.

Line managers play a critical role in translating organisational policy into everyday practice. Training should therefore emphasise the developmental use of digital HR data, encouraging supportive conversations, constructive feedback, and the normalisation of workplace challenges. Sector bodies, including Universities UK and the CIPD, should also develop ethical guidance for AI-enabled HRM that reflects the unique employment

context of UK higher education, particularly regarding algorithmic decision-making and the management of casualised staff.

Future research should examine whether psychological safety mediates the relationship between digital HRM and employee engagement, explore differences between permanent and fixed-term staff, identify which digital HRM practices best promote psychological safety, and test alternative mediating and moderating mechanisms through longitudinal and comparative research designs.

This paper contributes to theory by positioning psychological safety as the central mechanism through which digital HRM influences employee engagement in UK higher education. It integrates insights from digital HRM, psychological safety, and employee engagement literature to propose a conceptual framework that explains why the same technologies may produce either positive or negative outcomes depending on their implementation. Although the framework remains conceptual and requires empirical validation, it offers practical guidance for organisations seeking to balance technological innovation with employee wellbeing. Ultimately, digital HRM will deliver sustainable value only when it is embedded within organisational cultures characterised by trust, transparency, employee voice, and psychological safety.

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Conflict of Interest

No competing interest among authors.

Author Contributions

Hizana Naladithundil Habeeb, all contributed to the conception, design, and analysis, drafting manuscript, revising and approval of the final version. Ebenezer Akore Yeboah contributed only to the drafting manuscript, revising and approval of the final version to be published. Hizana Naladithundil Habeeb is accountable for all aspects of the work.

Patient and public involvement

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication

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Data sharing statement

The raw or processed data is available upon reasonable request.

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