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RESEARCH ARTICLE

Neuroleadership research in HRM: A systematic review

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Abstract

Neurocognitive patterns in leadership shape employee behavior and organizational outcomes, offering important insights for advancing human resource management (HRM) theory and practice. Using a focused, theory-driven journal-based content analysis of ten high-ranked HRM and organizational journals, this review synthesizes neuroleadership research published between 2005 and 2025. The analysis is guided by six integrated neuroleadership themes (decision-making, emotional regulation, motivation and reward processing, social cognition, stress resilience, and attentional control) across six core HRM domains and interpreted through performance-oriented and sustainability-oriented HRM perspectives. The findings suggest that neuroleadership research predominantly emphasizes sustainability-oriented HRM, with decision-making and emotional–cognitive themes most frequently examined within learning and development, followed by employee engagement and well-being and organizational development. In contrast, performance-oriented HRM emphases, such as performance control and transactional management, receive comparatively less attention. The review highlights the need to expand research on motivation, stress resilience, and attentional control to address the demands of an increasingly digitalized workforce.

Keywords: neuroleadership; HRM; leadership; systematic review; engagement and wellbeing

Introduction

Effective leadership strongly impacts employee motivation, engagement, and organizational success. Traditional approaches to leadership and human resource management (HRM) have primarily relied on behavioral and social theories to explain leaders' influence (Redcay & Warnell, 2018). While these perspectives have generated valuable insights, they provide limited explanation into the underlying cognitive and emotional mechanisms through which leadership effects occur (Aithal & Satpathy, 2024).

Responding to this limitation, neuroleadership has emerged as an interdisciplinary approach that integrates neuroscientific and neurocognitive insights into leadership behaviors and HRM research. Rather than adopting neural and biological definitions rooted in clinical or psychological settings, neuroleadership in this study is defined as an approach that explains how leaders' cognitive, emotional, and regulatory processes shape leadership behaviors and influence employees' cognition, motivation, well-being, and performance (Rock, 2009; Waldman, Balthazard & Peterson, 2011). Moving beyond a sole focus on observable behavior, neuroleadership emphasizes the neurocognitive mechanisms underlying decision-making, emotional regulation, social interaction, and stress management in organizational contexts (Ringleb & Rock, 2008; Lee, Senior & Butler, 2012; Tursunbayeva, Alvino, Pavone & Moschera, 2025).

Neuroscience-informed leadership research seeks to enhance leadership effectiveness at the individual, team, and organizational levels by improving understanding of human behavior and

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brain-based cognitive functions (Rock, 2009; Ruiz-Rodríguez, Ortiz-de-Urbina-Criado & Ravina-Ripoll, 2023; Bratianu & Staneiu, 2024; Tursunbayeva et al., 2025). Despite its growing relevance in neuroscientific research, neuroleadership research within the HRM domain remains fragmented and conceptually underdeveloped. This fragmentation reflects the uneven translation of advances from cognitive and clinical neuroscience into management and HRM research, where theoretical consolidation and systematic empirical examination remain limited. Consequently, existing studies provide only partial and inconsistent insights into how leaders' neurocognitive processes affect employees' emotional and cognitive functioning (Kuhlmann & Kadgien, 2018).

These limitations highlight the critical need for a deeper and more systematic understanding of the neurocognitive foundations of leadership within HRM. In particular, new evidence-based insight is required to clarify how leaders' cognitive and emotional processes relate to employee motivation, decision-making, problem-solving, well-being, and performance, and advance both theory and practice (Waldman et al., 2011). Addressing this gap requires a structured synthesis that consolidates core neuroleadership concepts, applies consistent terminology, and situates neuroleadership research within established HRM domains.

This systematic review contributes in several ways. First, it systematically maps neuroleadership themes across key HRM domains, offering a comprehensive overview of how neuroscience principles have been incorporated into HRM research. Second, it integrates neurocognitive insights with established HRM theories, developing a conceptual framework that explains how leadership behaviors influence employee cognition, motivation, and performance. Third, it provides practical guidance for HR leaders seeking to design evidence-based strategies that enhance decision-making, emotional regulation, and employee well-being in organizational contexts. By synthesizing neuroscience and HRM, this review advances both theoretical and practical understanding of neuroleadership's role in contemporary organizational management and identifies directions for future research.

The study identifies major trends in neuroleadership research between 2005 and 2025 across ten well-regarded journals using a theory-driven systematic content analysis, with the sample bounded by specific parameters explained in the methods section, to enhance analytical depth and feasibility and to minimize limited incremental thematic gain. Neuroleadership themes are derived from an integrated neuroleadership model originally proposed by Rock (2006, 2009) and subsequently expanded by Waldman et al. (2011), Teboul and Damier (2017, 2023), Agarwal and Shree (2021), and Ruiz-Rodríguez et al. (2023). The analysis identifies prevailing themes such as decision-making, emotional regulation, motivation and reward processing, social cognition, stress resilience, and attentional control.

The analysis examines how neuroleadership themes are expressed across six core HRM domains (talent management, learning and development, performance management, employee engagement and well-being, organizational development and HR strategy, and work design and productivity). These domains were identified based on their consistent presence in foundational HRM frameworks, including the Harvard model (Beer et al., 1985), Ulrich's model (1997), and the ability–motivation–opportunity (AMO) framework (Appelbaum, Bailey, Berg & Kalleberg, 2000), which conceptualize these areas as the primary mechanisms through which HR practices influence individual and organizational outcomes.

These HRM domains are subsequently interpreted through two broad conceptual generations of HRM: performance-driven HRM models (such as high-performance work practices [HPWP] and strategic human resource management [SHRM]), which emphasize efficiency, control, and performance optimization, and, in contrast, sustainability-oriented HRM (Aust, Matthews & Muller-Camen, 2020) and common good human resource management (CGHRM) (Lu, Zhang, Yang & Li, 2025) models, which highlight employee well-being, ethical governance, inclusiveness, and long-term value creation. This distinction allows the study to examine how neuroleadership–HRM research reflects competing HRM logics and an ongoing paradigmatic shift in the purpose and evaluation of HRM outcomes.

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Accordingly, the aim of this study is to identify emerging trends, research gaps, and practical implications by systematically reviewing and synthesizing neuroleadership applications within HRM. The research is guided by the following three questions: (i) What are the dominant neuroleadership themes examined in HRM research? (ii) What HRM domains are most frequently associated with neuroleadership studies? (iii) What emerging trends and applications can be identified at the intersection of neuroleadership and HRM?

Theoretical foundations

Neuroleadership: core models and mechanisms, and theme derivation

The integration of neuroscience into leadership and organizational research has developed alongside advances in neurophysiology and computational neuroscience, supported by technological and methodological progress that has enabled more refined investigations of cognitive, emotional, and social processes relevant to leadership and organizational behavior (Guarnier & Chimenti, 2024; Nayyar, Saluja & Vousinas, 2024). In this broader environment, organizational cognitive neuroscience and neuroleadership have developed as practical fields aiming to apply neuroscientific findings to leadership and HRM (Stăneiu, Stratone, Dabija & Mititean, 2024; Tursunbayeva et al., 2025).

The concept of applying neuroscience to leadership was first proposed by David Rock in the mid-2000s, highlighting the potential of brain-based insights to improve leadership effectiveness (Rock & Ringleb, 2008). This perspective shifted leadership research beyond an exclusive focus on observable traits and behaviors toward underlying neurocognitive processes related to decision-making, emotional regulation, motivation, and social interaction. Foundational neuroleadership frameworks, including the SCARF and four-domain models, articulate how core social–cognitive processes shape leadership behavior and employee experience. The SCARF model identifies five core social domains (status, certainty, autonomy, relatedness, and fairness) that influence motivation, engagement, and behavior at work (Rock, 2008; Jeni & Reddy, 2024, 2009). Within the neuroleadership literature, the SCARF model plays a formative role in shaping core concepts, with several of the themes synthesized in this review, particularly social cognition, emotional regulation, motivation and reward processing, and attentional control, being conceptually informed by SCARF alongside other established neuroleadership and organizational neuroscience models.

Beyond SCARF, neuroleadership research has evolved to incorporate insights from emotional and social intelligence (Boyatzis, 2011), organizational neuroscience (Waldman et al., 2011), and integrative multi-domain frameworks that link neurocognitive processes more explicitly to organizational outcomes (Agarwal & Shree, 2021; Guarnier & Chimenti, 2024). Across this body of work, leadership effectiveness is increasingly understood as grounded in a limited set of recurring neurocognitive mechanisms, rather than in isolated neural traits or behaviors.

Building on this literature, the present study derives six core neuroleadership themes through a deductive synthesis of established models, rather than introducing new constructs. As summarized in Table 1, these themes (decision-making, emotional regulation, motivation and reward processing, social cognition and trust, stress resilience, and attentional control) were identified by systematically comparing influential neuroleadership and organizational behavior models (e.g., Rock, 2006, 2009; Boyatzis, 2011; Waldman et al., 2011; Deci & Ryan, 2012; Teboul & Damier, 2017, 2023; Tafet, 2022; Ruiz-Rodríguez et al., 2023). This synthesis consolidates existing conceptualizations into a coherent analytical structure for reviewing neuroleadership research within HRM.

Consistent with prevailing neuroleadership research practices, these themes are most often examined through behavioral, cognitive, and self-reported measures, with relatively limited use of direct neuroscientific or experimental designs, a pattern that informs the analytical approach adopted in this review.

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Table 1. Core neuroleadership themes and descriptions

Themes	Key constructs/focus	Relevant neuroleadership frameworks
Decision-making	Cognitive load, judgment under pressure, problem-solving, and neural basis of choices affecting leadership behavior.	SCARF model (Rock, 2008); organizational neuroscience (Waldman et al., 2011); five themes of neuroleadership (Guarnier & Chimenti, 2024)
Emotional regulation	Self-control, emotional intelligence, and neural mechanisms underlying leaders' ability to manage emotions and influence others.	Four-domain model (Rock, 2009); emotional intelligence theory (Boyatzis, 2011)
Motivation and reward processing	Intrinsic/extrinsic motivation, reward circuits, and brain-based understanding of reinforcement and goal pursuit.	SCARF model (Rock, 2008); self-determination theory (Deci & Ryan, 2012)
Social cognition and empathy	Perspective-taking, fairness perception, and neural mechanisms of trust and social connection in leader–follower relations.	SCARF model (Rock, 2008); self-determination theory (Deci & Ryan, 2012)
Stress resilience	Coping strategies, performance under stress, and neural correlates of resilience and adaptability in leadership contexts.	Organizational neuroscience (Waldman et al., 2011); resilience theory (Richardson, 2002); neuroscience of stress (Tafet, 2022)
Attentional control	Focus, prioritization, cognitive flexibility, and neural basis of sustained attention and distraction management in leadership roles.	SCARF model (Rock, 2008); control networks and neuromodulators (Posner, Rothbart, Sheese & Voelker, 2012)

Core HRM domains and conceptual generations

HRM research consistently identifies a set of core functional domains through which HR practices influence employee attitudes, behaviors, and organizational outcomes. These domains represent what HRM does in practice, regardless of the underlying theoretical or philosophical orientation. Six domains (talent management, learning and development, performance management and rewards, employee engagement and well-being, organizational development and HR strategy, and work design, productivity, and collaboration) recur as key mechanisms connecting HR practices to individual and organizational performance in both traditional and more recent sustainable HRM frameworks.

The selection of these six domains is grounded in their consistent prominence across foundational HRM frameworks. The Harvard model (Beer et al., 1985), Ulrich's model (1997), and the AMO framework (Appelbaum et al., 2000) all emphasize HR practices that link employee capabilities, motivation, and organizational outcomes. Together, these models provide a robust theoretical basis for consolidating the six HRM domains summarized in Table 2, which illustrates how each domain is examined across both performance-driven and sustainability-oriented HRM perspectives.

The first generation, commonly described as performance-driven HRM or traditional trend of HR, conceptualizes employees primarily as organizational resources whose skills, motivation, and effort can be optimized to enhance efficiency and competitive advantage. This generation encompasses approaches such as hard and soft HRM (Guest, 1987; Storey, 2014), HPWP (Huselid, 1995; Tamkin, 2004), strategic HRM (Wright & McMahan, 1999; Jiang & Messersmith, 2018), and Ulrich's business partner model (Ulrich, 1997). Within this perspective, HRM domains are primarily oriented toward performance control, productivity improvement, and alignment of human capital with organizational goals.

In contrast, a second generation of HRM, generally referred to as sustainability-oriented HRM or new trend of HR, introduces a new paradigm that fundamentally challenges and replaces the dominant performance-driven logic of short-term efficiency and control. This paradigm expands the definition of organizational success by incorporating employee well-being, ethical governance, and

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Table 2. Core HRM domains and theoretical foundations across generations

HRM domain	First generation: performance-driven HRM	Second generation: sustainability-oriented HRM	Key models/theories
Talent management	Recruitment, onboarding, retention, succession planning, and career development focused on maximizing performance.	Promotes sustainable employability, diversity, inclusion, and long-term organizational value.	AMO model (Appelbaum et al., 2000); Harvard model (Beer et al., 1985)
Learning and development	Skill development and training programs aimed at enhancing task performance.	Encourages continuous learning, knowledge transfer, mentoring, and capability building for sustainable human capital and reserving environment.	Experiential learning theory (Kolb et al., 2014); dynamic capabilities (Teece, 2007); sustainable HRM (Ehnert, 2009)
Performance management and rewards	Goal setting, appraisals, and performance-based financial rewards.	Integrates fairness, developmental feedback, intrinsic/extrinsic rewards, and long-term improvements as well as measuring, monitoring, team appraisals, feedback, and goal setting. It is about outputs and results.	Goal-setting theory (Locke & Latham, 1990); expectancy theory (Vroom, Porter & Lawler, 2015)
Employee engagement and well-being	Focused on job satisfaction, motivation, and compliance.	Prioritizes psychological safety, work–life balance, inclusiveness, and holistic well-being.	Self-determination theory (Deci & Ryan, 2012); social exchange theory (Cook, Cheshire, Rice & Nakagawa, 2013); and CGHRM (Aust et al., 2024)
Organizational development and HR strategy	Hierarchical and control-oriented approaches for organizational efficiency.	Supports change management, culture development, strategic HR alignment, and ethical governance.	Ulrich's HR model (Ulrich, 1997); CGHRM (Aust et al., 2020, 2024; Enhert, 2009)
Work design, productivity, and collaboration	Job simplification, efficiency, and task-focused work design.	How work is structured, scheduled, or designed to enhance efficiency, autonomy, and well-being. Process, environment, and role structuring rather than direct performance evaluation.	Job characteristics model (Hackman & Oldham, 1976); work, collaboration, and design principles (Sachs, 1995)

environmental sustainability alongside economic outcomes. This shift positions HRM not merely as a mechanism for resource optimization, but as a central driver of sustainable employability, inclusiveness, ethical responsibility, and long-term societal value creation. This generation encompasses frameworks such as sustainable HRM (Ehnert, 2009; Kramar, 2014; Gomes, Coelho & Ribeiro, 2025), socially responsible HRM (Shen & Benson, 2016; Altassan, 2025), green HRM (Jackson, Renwick, Jabbour & Muller-Camen, 2011), triple bottom line HRM (Bush, 2020), and CGHRM (Aust et al., 2020, 2024; Pham et al., 2023). Within this perspective, HRM functions provide the frameworks for achieving sustainable employability, inclusiveness, ethical responsibility, and societal impact.

CGHRM, in particular, positions HRM as a normative and socially embedded system of governance that derives legitimacy from the United Nations Sustainable Development Goals (UN SDGs) and their emphasis on inclusive and responsible value creation (Chams & García-Blandón, 2019; Pham et al., 2023; Lu et al., 2025). Within this framing, diversity, equity, and inclusion is treated as a

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foundational mechanism of sustainability-oriented HRM, aligned with SDG-informed expectations for organizational practice. Accordingly, the six HRM domains identified in this study are examined through both performance-driven and sustainability-oriented lenses to assess how neuroleadership research reflects shifting assumptions about the purpose and impact of HRM.

Linking neuroleadership and HRM theories

Neuroleadership conceptualizes leadership as a neurocognitive process through which brain-based mechanisms influence behavior, problem-solving, and emotional responses at work (Rock, 2008; Waldman et al., 2011). When integrated with HRM theory, these mechanisms explain how leadership themes shape employee motivation, engagement, well-being, and performance by influencing cognitive, emotional, and social processes at individual and collective levels. Accordingly, the six neuroleadership themes represent underlying neurocognitive mechanisms that operate across all HRM domains rather than being confined to specific HR functions (Boyatzis, 2011; Chowhan, 2016; Dimitriadis & Psychogios, 2020; Rock, 2008; Stăneiu et al., 2024; Waldman et al., 2011).

These mechanisms manifest differently across HRM domains depending on organizational context and HRM philosophy. For example, decision-making influences performance management, work design, and strategic HR planning by shaping judgment under cognitive load and uncertainty (Chowhan, 2016; Salas-Vallina & López-Cabrales, 2021). Emotional regulation, motivation, and reward processing are particularly salient within learning and development, performance management, and talent management, highlighting how intrinsic and extrinsic motivators affect engagement, capability development, and retention (Haver, Akerjordet & Furunes, 2013; Agarwal & Shree, 2021; Gkintoni, Halkiopoulos & Antonopoulou, 2022). The prominence of learning and development within neuroleadership research reflects the field's emphasis on cognitive adaptation, self-regulation, and neuroplasticity (Bratianu & Stăneiu, 2024). Learning and development is a central HRM domain in which leadership cognitive behaviors (such as self-control, fairness perception, and cognitive flexibility) influence employees' attention, motivation, emotional regulation, and capacity to learn and adapt (Kolb, Boyatzis & Mainemelis, 2014). Sustainability-oriented HRM frameworks further position learning and development as a central lever for inclusive capability development and long-term value creation aligned with broader societal goals (Chams & García-Blandón, 2019). Stress resilience and attentional control are closely linked to work design, productivity, and organizational development, shaping adaptability, burnout prevention, and sustainable performance (Ruiz-Rodríguez et al., 2023; Stăneiu et al., 2024). Finally, social cognition and trust underpin relational dynamics and organizational culture, supporting inclusive, ethical, and cooperative leadership behaviors (Ringleb & Rock, 2008).

These neuroleadership themes are examined through the lens of two conceptual HRM generations, as outlined in the section 'Core HRM domains and conceptual generations', to capture how shared neurocognitive mechanisms are interpreted and operationalized differently under performance-driven and sustainability-oriented HRM assumptions.

Research method

Content analysis

This study adopts a theory-driven journal-based content analysis to examine how neuroleadership and neuroscience-informed concepts have been incorporated into HRM research over time. Content analysis enables the systematic, transparent, and replicable examination of both manifest and latent patterns in published research (Neuendorf, 2018; Krippendorff, 2018), while supporting cumulative theory development in management and organizational studies (Tranfield, Denyer & Smart, 2003; Short, 2009; Paul & Criado, 2020).

The review process followed four sequential steps: (1) identification of relevant journals and time boundaries; (2) structured keyword searching within the selected journals; (3) multi-stage screening

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of titles and abstracts for relevance; and (4) deductive coding of eligible studies using a predefined analytical framework comprising neuroleadership themes and HRM domains developed *a priori*. Although the review is journal-bounded, each step was conducted using explicit inclusion rules and consistent coding anchors, ensuring transparency and replicability across the analytical process (Tranfield et al., 2003; Krippendorff, 2018; Paul & Criado, 2020).

A structured search was conducted within the selected journals indexed in Scopus and Web of Science (Harzing & Alakangas, 2016) using predefined HRM and neurocognitive keywords combined with Boolean operators (e.g., *neuroleadership* OR social *cognition* AND *talent management* OR *training*). Titles and abstracts were screened for relevance and served as the primary unit of analysis for coding. Where abstracts lacked sufficient detail, the introduction and methodology sections were consulted for clarification. However, final coding decisions were consistently anchored at the abstract level to ensure replicability.

Journal selection

The analysis of neuroleadership–HRM research trends was conducted by examining articles published in ten high-ranked journals. The selection of journals was based on clearly articulated and transparent criteria. First, journals were required to regularly publish research on leadership, HRM, organizational behavior, or neuroscience-informed organizational phenomena, ensuring substantive alignment with the study's objectives. A preliminary investigation of HRM and organizational journals indicated that only a small number consistently published neuroleadership-relevant studies, making a focused journal set both feasible and methodologically appropriate. Second, objective metrics including quartile rankings (Q1–Q2), Scimago Journal Rank (SJR) scores, and consistent indexing in Scopus and Web of Science were used to operationalize journal reputation and scholarly influence, following Mingers and Yang (2017) and Harzing and Alakangas (2016). Applying these criteria further reduced the pool of relevant journals to be examined. Using the two criteria reduced the relevant journals to ten. These selected journals and their relevance to the study are presented in Table 3.

Third, interdisciplinary publications that specifically link neuroscience and management research were balanced with core HRM and organizational behavior journals. Journals focused primarily on clinical or medical neuroscience were excluded after screening revealed limited relevance to workplace behavior or HRM processes. This strategy was intentionally adopted to reduce conceptual dilution in an interdisciplinary field characterized by fragmentation. Similar focused approaches have been widely used in theory-driven reviews to enhance transparency, rigor, and replicability.

The decision to focus on ten key journals sought to achieve analytical depth *and* theoretical saturation rather than numerical representativeness. Preliminary screening indicated that expanding the journal set beyond this threshold yielded diminishing conceptual returns, with limited introduction of new neuroleadership–HRM themes. Similar journal-bounded strategies have been widely adopted in theory-driven and structured reviews to balance rigor, feasibility, and interpretive depth in management and organizational research (Short, 2009; Mingers & Yang, 2017; Paul & Criado, 2020). Consequently, the ten-journal sample was deemed sufficient to capture dominant theoretical patterns while maintaining analytical coherence.

The 20-year review period was selected because neurocognitive leadership concepts began to emerge around 2005–2006, marking the formal rise of neuroleadership as a research stream. This timeframe also captures major contextual developments relevant to HRM, including digitalization, predictive analytics, the COVID-19 pandemic, and growing emphasis on ethical leadership, employee engagement, and well-being.

Data screening and analytical framework

Following the search procedure described in the section 'Content analysis', retrieved records were subjected to a multi-stage screening process. A total of 1,728 articles were identified through database

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Table 3. Selected journals and their academic rankings

No.	Journal Title	Scope/focus	SJR (H-index)	Relevance to study
1	*Academy of Management Journal*	Empirical studies in management and organizations	10.53 (396)	Core HRM and leadership research
2	*Journal of Applied Psychology*	Organizational psychology, behavior, and performance	6.80 (353)	Leadership cognition and organizational psychology patterns
3	*The Leadership Quarterly*	Theoretical and empirical leadership studies	5.4 (202)	Neuroleadership and leadership processes
4	*Journal of Organizational Behavior*	Employee behavior and attitudes in organizations	3.87 (230)	HRM and leadership integration
5	*Human Resource Management Review*	Theoretical and conceptual HRM advancements	3.93 (132)	HRM theory and organizational neuroscience
6	*Academy of Management Discoveries*	Novel and emerging management insights	3.2 (30)	Experimental and neuroscience-related findings
7	*Journal of Business and Psychology*	Interface of business and psychology	2.31 (108)	Cognitive and behavioral foundations of leadership
8	*Journal of Management*	Broad organizational research focus	8.63 (296)	HRM systems and leadership development
9	*Personnel Psychology*	Individual and organizational performance	5.4 (175)	Leadership assessment and talent management
10	*Journal of Management Studies*	Theoretical and interdisciplinary management research	5.7 (233)	Conceptual grounding for neuroleadership models

searching. Of these, 720 records were removed as clearly irrelevant. The remaining 1,008 records were screened based on titles and abstracts. During this stage, 230 articles were assessed as potentially eligible, while 778 records required further review due to ambiguity regarding relevance or classification. These cases were resolved through discussion among the research team, resulting in a final sample of 422 studies. This process followed a PRISMA-informed logic and is summarized in Fig. 1.

To ensure consistency and analytical rigor, a structured framework for data extraction and coding was developed. The coding framework was grounded in the *a priori* conceptual synthesis presented in the sections 'Neuroleadership: core models and mechanisms, and theme derivation' and 'Core HRM domains and conceptual generations'. So, the six neuroleadership themes and six HRM domains were specified prior to coding through a deductive process based on established neuroleadership and HRM models summarized in Tables 1 and 2. Coding was conducted using QualCoder to support transparent and systematic analysis across all selected publications.

- **Country of study**, which provides information about the geographic setting and research focus.
- **Research type and methodology**, identifying whether the study was conceptual, empirical, or experimental and the method was quantitative, qualitative, or mixed-methods approach.
- **Neuroleadership themes**, which are key neurocognitive functions, including decision-making, trust, empathy, and emotional control and other principles, which were mentioned in Table 1.
- **HRM domains**, which demonstrate how neuroleadership concepts are incorporated into HR procedures, including performance management, talent development, and learning and development; these are also covered in Table 2.
- **Contextual theme codes**, representing the intersection of neuroleadership themes and HRM domains. Codes combined HRM orientation and neuroleadership theme (e.g., *O_NDM_TM* = performance-driven HRM × neuro-decision-making × talent management;

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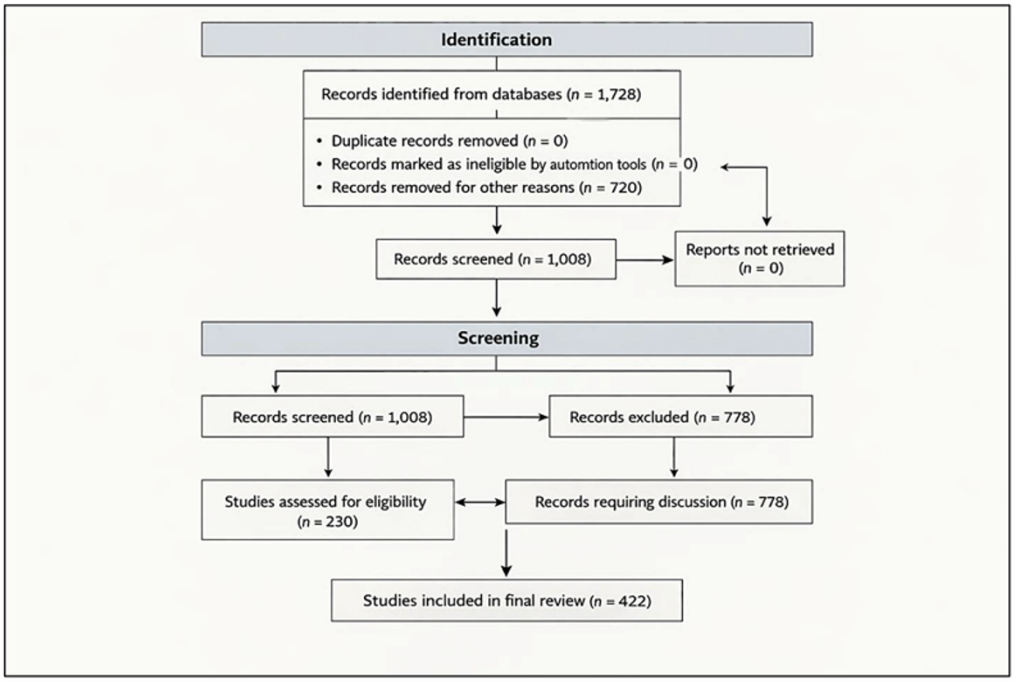


Figure 1. PRISMA flow diagram of study selection for systematic review.

S_NER_PM = sustainability-oriented HRM × neuro-emotional regulation × performance management).

- **Citation counts**, as an indicator of scholarly prominence.

This staged screening process ensured consistent application of inclusion criteria and minimized subjective bias in study selection. Section 4 presents the detailed findings.

Results

This section presents the findings derived from the systematic literature review of neuroleadership research within HRM. It reports descriptive characteristics of the selected studies, examines methodological and geographic patterns, and analyzes how neuroleadership themes intersect with HRM domains across traditional and sustainability-oriented perspectives. In line with the conceptual framework, results are reported using consistent terminology distinguishing neuroleadership themes (neurocognitive mechanisms) and HRM domains (organizational application areas).

Descriptive overview of the selected studies

The final sample comprises 422 articles published between 2005 and 2025 across the ten selected journals. Notably, the *Academy of Management Discoveries* began publication in 2015, which naturally limits its cumulative citation count and the number of neuroleadership-related studies available for inclusion. The review explicitly coded each article for six core neuroleadership themes (decision-making, emotional regulation, motivation & reward processing, social cognition & empathy, stress resilience, and attentional control) and for study attributes such as publication year, country, research type, and methodology. Table 4 summarizes the descriptive distribution of the sample by journal, research type, and the presence of neuroleadership themes and HR domains.

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Table 4. Descriptive summary of the reviewed articles (by journal and study attributes)

Journal	No. of articles	Dominant research type	Dominant method	Most frequent neurolead-ership principle	Most frequent HRM domain	% of total
Academy of Management Journal	21	Empirical	Quantitative	Social cognition and empathy	Learning and development, employee engagement	5
Academy of Management Discoveries	21	Conceptual	Qualitative	Decision-making	Organizational development and performance management	5
The Leadership Quarterly	86	Empirical	Qualitative	Decision-making and social cognition	Leadership development and employee engagement	20
Journal of Organizational Behavior	21	Empirical	Quantitative	Emotional regulation and social cognition	Organizational development and HR strategy	5
Human Resource Management Review	21	Conceptual	Qualitative	Emotional regulation and social cognition	Performance management and leadership development	5
Academy of Management Studies	38	Empirical	Quantitative	Social cognition	Organizational development	9
Journal of Business and Psychology	64	Empirical	Quantitative	Emotional regulation and social cognition	Employee well-being and leadership development	15
Journal of Management	68	Empirical	Quantitative	Decision-making, emotional regulation, and social cognition	Learning and development, organizational development	16
Personnel Psychology Journal	38	Empirical	Quantitative	Social cognition and employee regulation	Performance management; and learning and development	9
Journal of Applied Psychology	44	Conceptual	Quantitative	Motivation and reward processing	Employee well-being	10
Total	422					100

As shown in Table 4, *The Leadership Quarterly* (86 articles), *Journal of Management* (68), *Journal of Business and Psychology* (64), and *Journal of Applied Psychology* (44) contribute over 60% of the sample. Most studies are empirical, although conceptual contributions remain prominent in *Human Resource Management Review* and *Journal of Applied Psychology*. Methodologically, quantitative approaches dominate across seven of the ten journals.

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Regarding thematic emphasis, decision-making, emotional regulation, and social cognition are the most frequently examined neuroleadership themes, commonly linked to HRM domains such as learning and development, employee engagement and well-being, and performance management. In contrast, motivation and reward processing, attentional control, and stress resilience are less frequently addressed, indicating uneven development across neurocognitive mechanisms. This pattern reflects both theoretical maturity and empirical accessibility within the field and provides a foundation for the thematic analyses that follow.

Temporal distribution of publications (2005–2025)

Between 2005 and 2025, the annual volume of neuroleadership-related HRM publications shows a clear upward trajectory (Fig. 2), indicating growing scholarly recognition of brain-based approaches to leadership and people management.

Although slight declines were observed in 2006, 2014, 2016, and 2022, the overall trend across the decade, especially between 2016 and 2021, reflects continuous scholarly interest. The increase observed during 2020–2022 coincides with the COVID-19 period, a time when stress management, emotional regulation, and employee well-being received heightened attention in organizations. This pattern is treated as a contextual observation rather than a primary explanatory factor in the review. The apparent decline in publications after 2024 should be interpreted cautiously, as it may reflect publication lags or a temporary consolidation of research activity rather than a substantive reduction in scholarly interest.

Research designs and methodological approaches

As summarized in Table 5, quantitative methods account for half (212) of all studies, followed by qualitative (140; 33%) and mixed-methods (70; 17%) approaches. Empirical research designs dominate the sample (287 studies; 68%), reflecting a strong trend toward evidence-based investigations of neuroleadership and its HRM implications. Conceptual studies remain influential (92; 22%), while mixed conceptual–empirical work and systematic reviews together represent 10% of the dataset. Across the reviewed empirical studies, samples were predominantly drawn from employees and managers, with fewer studies examining executive leaders, teams, or organizational-level samples.

Taken together, these patterns demonstrate that neurocognitive leadership research in HRM has developed from early conceptual investigations into a subject that is mostly empirical and quantitatively driven. Although mixed-methods and review studies are still relatively rare, their increasing prevalence indicates a small but growing trend toward methodological diversity and interdisciplinary involvement.

Geographic distribution of studies by continent

As shown in Table 6, research output is heavily concentrated in North America (218 studies; 52%), followed by Europe, Asia, and Oceania, with limited representation from South America. Within Europe, the Netherlands features prominently, while China leads among Asian countries. This distribution highlights both geographic concentration and emerging regional engagement with neuroscience-informed leadership research.

Citation and impact analysis

Citation patterns reported in Table 7 indicate that *Academy of Management Journal, The Leadership Quarterly*, and *Journal of Applied Psychology* exert the greatest scholarly influence, together accounting for more than half of all citations (20,820, 16,566, and 15,090, respectively). *Human Resource Management Review* (341 citations per paper) and the *Journal of Applied Psychology* (343 citations per paper) also show strong citation performance, reflecting their role in shaping scholarly discourse at the intersection of psychology, HRM, and emerging organizational neuroscience topics.

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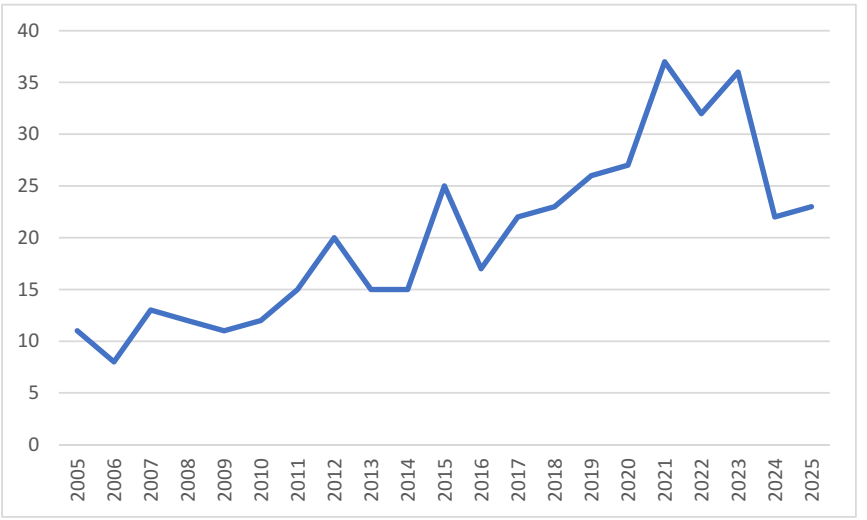


Figure 2. Number of neuroleadership-related publications in HRM journals (2005–2025).

Table 5. Distribution of studies by research type and methodology

Research methodology		
Qualitative	140	33%
Quantitative	212	50%
Mixed-methods	70	17%
Research type		
Conceptual	92	22%
Empirical	287	68%
Mixed	21	5%
Review (systematic/integrative, narrative)	22	5%

Table 6. Distribution of studies by continent

Continent	Countries included	Number of studies	% of total
North America	USA, Canada	218	52%
Europe	UK, Netherlands, Germany, France, Portugal, Switzerland, Austria, Belgium, Denmark, Ireland, Finland, Italy, Greece, Macedonia,	119	28%
Asia	China, Israel, Japan, South Korea, Turkey, Malaysia, UAE	67	16%
Oceania	Australia, New Zealand	16	4%
South America	Brazil	2	0
Total		422	100%

The *Journal of Business and Psychology* and the *Personal Psychology Journal* exhibit the lowest average citations, likely reflecting their more recent publications or relatively limited focus on neuroleadership. The lower citation count observed for the *Academy of Management discoveries* is due to the restricted 10-year publication window (2015–2025) applied in this analysis, as noted earlier.

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Table 7. Citation impact across HRM journals

Journal	No. of articles	Total citations	Avg. citations per paper
Academy of Management	21	20,820	991
Academy of Management Discoveries	21	780	37.1
Human Resource Management Review	21	7,158	341
Journal of Applied Psychology	44	15,090	343
Journal of Business and Psychology	64	3,655	57.1
Journal of Management	68	14,354	211
Journal of Management Studies	38	5,117	135
Journal of Organizational Behavior	21	4,965	236
Personal Psychology Journal	38	4,632	122
The Leadership Quarterly	86	16,566	193
Total	422	93,137	221

This pattern highlights an increasing trend in academics to develop leadership theory and integrate neuroscience insights into practical HRM applications.

Thematic clustering of neuroleadership and HRM integration

To capture the conceptual breadth of neuroleadership research, neurocognitive concepts identified across the reviewed studies were systematically coded and clustered into six overarching neuroleadership themes. Table 8 presents the coding structure, clarifies the analytical logic underpinning the thematic classification, and demonstrates how diverse neurocognitive constructs were consolidated into a coherent framework.

Building on this coding structure, Table 9 reports the frequency and percentage distribution of the six neuroleadership themes across the full dataset. As shown in Table 9, social cognition is the most frequently represented theme, accounting for 34% of all coded keywords, followed by emotional regulation (23%) and decision-making (16%). These themes reflect leadership processes associated with relational intelligence, empathy, emotional awareness, and judgment under uncertainty (Haver et al., 2013).

In contrast, attentional control (11%), motivation and reward processing (8%), and stress resilience (7%) appear less frequently in the literature, indicating areas where neuroleadership research within HRM remains comparatively underdeveloped. Their lower empirical prevalence suggests areas where neuroleadership research within HRM remains underdeveloped, pointing to important opportunities for future theoretical and empirical advancement.

To examine how these neurocognitive mechanisms are operationalized within organizational practice, HRM-related concepts were subsequently classified into six core HRM domains. Table 10 outlines the HRM domain coding framework, specifying the keywords and practices associated with each domain. This classification illustrates how leadership-related neurocognitive themes are embedded within core HRM functions and provides a structured basis for analyzing the intersection of neuroleadership and HRM practice.

The frequency and percentage distribution of HRM domains are reported in Table 11. The results indicate that employee engagement and well-being represents the largest share of HRM-related keywords (31%), followed by learning and development (24%) and performance management (16%). Organizational development and HR strategy accounts for 12%, while talent management and work design and productivity each represent 9%. This distribution highlights a strong emphasis on employee-centered and developmental HRM practices within neuroleadership research, alongside

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Table 8. Neuroleadership themes and associated coding structure

Neuroleadership category	Keywords included/variants merged
Emotional regulation	Emotional regulation, emotional regulation & social cognition, leader emotion regulation, emotional–cognitive regulation, emotional intelligence, self-control, employees' emotional response, emotional regulation to decision-making, empathy, self-awareness, emotional control, regulation, collective empathy
Social cognition	Social cognition, social–cognitive processes, social cognition & collective intelligence, relational perception, affective regulation, social interaction, social perception, relational awareness, social brain patterns, trust, collaboration, perspective-taking, leadership communication, team dynamics
Decision-making	Decision-making, decision-making under stress and uncertainty, decision-making under power, adaptive decision-making, decision-making and moral cognition, strategic decision cognition, integrative decision-making, ethical decision-making, decision-making under ethical and social considerations, leaders' decision-making processes, judgment, bias, risk, problem-solving, executive function
Attention & focus	Attention, focus, neuro-adaptive attention, neuro-cognitive coordination, cognitive focus, attentional control, cognitive-affective, cognitive load, concentration, prioritization
Motivation & reward processing	Motivation & reward processing, reward anticipation, intrinsic and extrinsic motivation, approach-avoidance motivation, employee motivation, cognitive–motivational alignment, dopamine effect, engagement, incentive
Stress & resilience	Stress management, resilience, stress regulation, resilience building, stress recovery, psychological capital, cognitive load & stress, emotional resilience, burnout, cortisol role, coping, recovery, well-being

Table 9. Frequency distribution of neuroleadership themes

Neuroleadership category	Frequency (number of times mentioned)	% of total keywords
Emotional regulation	174	24%
Social cognition	247	34%
Decision-making	113	16%
Attention & focus	76	11%
Motivation & reward processing	59	8%
Stress & resilience	48	7%
Total	717	100%

continued, though comparatively lower attention to performance control and productivity-oriented domains.

Taken together, Tables 8–11 provide a transparent and systematic account of how neuroleadership themes and HRM domains were defined, coded, and distributed across the reviewed literature. Although some neuroleadership themes are less frequently examined empirically, they were retained in this review due to their central role in established neuroleadership models and their practical relevance for HRM, particularly in leadership development, employee well-being, and sustainable workforce design.

The transformation of HRM models: from traditional efficiency to sustainable development

Table 12 illustrates a dominant orientation toward sustainability-oriented HRM models, with 77% of the coded neuroleadership–HRM intersections reflecting sustainable or new dimensions (S), compared to 23% representing traditional, performance-driven (O) practices.

This marked difference (S = 414; O = 126) indicates a clear shift in contemporary HRM scholarship toward models emphasizing employee well-being, learning, adaptability, and long-term

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Table 10. HRM domains and associated coding structure

HRM domain	Keywords/phrases
Talent management (TM)	Talent management, talent recognition, talent identification, recruitment and selection, talent acquisition, talent mobilization, succession planning, onboarding, executive selection
Learning & development (L&D)	Learning & development, leadership development, workplace training, employee skill development, capability building, development opportunities, learning programs, skill-gap analysis
Performance management (PM)	Performance management, employee performance, team effectiveness, reward systems, compensation management, performance feedback, appraisal, workgroup performance, evaluation
Employee engagement & well-being (EE)	Employee engagement, employee well-being, employee motivation, psychological safety, employee voice, employee trust, commitment, job satisfaction, employee value alignment, work–life balance, Diversity, Equity, Inclusion, and Belonging (DEIB), climate management, ethical issues
Organizational development & HR strategy (OD)	Organizational development & HR strategy, organizational strategy & vision, organizational design & innovation, organizational effectiveness, organizational functioning, organizational support structures, organizational design, strategic HR decision-making, organizational outcome, organizational adaptation, career path planning
Work design & productivity (WP)	Job design & productivity, workgroup performance, scheduling, workflow optimization and management, team composition, organizational team effectiveness

Table 11. Frequency distribution of HRM domains

HRM domain	Frequency	% of total keywords
Talent Management (TM)	63	9%
Learning & development (L&D)	163	24%
Performance management (PM)	108	16%
Employee engagement & well-being (EE/WB)	208	31%
Organizational development & HR strategy (OD/HR)	80	12%
Work design & productivity (WP)	58	9%
Total	680	100%

value creation. Rather than focusing primarily on efficiency, control, and short-term performance outcomes, neuroleadership research increasingly aligns with HRM perspectives concerned with resilience, human capital development, and sustainable organizational performance.

It is important to note that the magnitude of this difference reflects the nature of thematic synthesis rather than simple article counts. Many studies simultaneously address multiple HRM domains and neurocognitive mechanisms. For example, a single article may examine employee engagement and learning and development while drawing on leadership-related neurocognitive constructs such as emotional regulation or cognitive flexibility. To preserve analytical coherence, each study was ultimately classified according to its most dominant HRM orientation, even when multiple conceptual layers were present. As a result, individual studies may contribute to multiple underlying codes while being represented once at the model-orientation level.

These findings suggest that neuroleadership research does not merely supplement existing HRM frameworks but is increasingly embedded within sustainability-oriented HRM logics, reinforcing a broader paradigmatic transition in the field rather than a simple methodological trend.

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Table 12. Frequency of neuroleadership-related HRM codes by model dimension

HRM perspectives	Description	Total frequency	% of total
S – Sustainable/new HRM	Focused on long-term value creation, employee well-being, learning culture, inclusiveness, adaptability, resilience, and human-centered strategy. This dimension reflects the shift from control-based HR toward empowerment and sustainability.	414	77%
O – Performance-oriented HRM/traditional HRM	Focused on short-term efficiency, performance measurement, output control, and results-driven HR practices. Represents the classical view of HRM as a functional support for productivity and operational success.	126	23%
Total		540	100%

Thematic distribution of neuroleadership-driven HRM constructs

To further examine how this transformation manifests across specific HRM functions, Table 13 presents the distribution of 540 coded neuroleadership–HRM intersections, clustered by major HRM domains and differentiated between sustainable (S) and traditional (O) HRM orientations.

Learning & development (LD) emerges as the most dominant cluster, led by high-frequency sustainable HRM codes such as S_NSC_LD (49), S_NER_LD (40), and S_NDM_LD (28). These patterns highlight the pivotal role of social cognition, intrinsic and extrinsic motivation, and decision-making in leadership-driven learning processes. In contrast, traditional LD codes (e.g., O_NSC_LD = 8; O_NDM_LD = 7) occur less frequently, suggesting a shift away from training models focused solely on skill acquisition toward developmental approaches emphasizing cognitive adaptability, self-regulation, and continuous learning.

A similar pattern is observed in employee engagement and well-being (EE). Sustainable codes, most notably S_NER_EE (39) and S_NSC_EE (29), highlight the growing importance of psychological safety, emotional intelligence, and relational leadership in HRM research. Traditional engagement-related codes appear only sporadically (e.g., O_NMR_EE = 5; O_NSC_EE = 2), indicating limited reliance on classical motivational or compliance-based engagement frameworks.

Additionally, organizational development (OD) also shows strong alignment with sustainability-oriented HRM. High-frequency codes such as S_NSC_OD (37) and S_NDM_OD (16) reflect increasing attention to relational intelligence, adaptive change, and human-centered organizational design. Traditional OD codes remain present but comparatively marginal, supporting a move away from hierarchical and control-based models toward more dynamic and capability-driven approaches.

In domains related to performance management, talent management, and work design and productivity (PM, TM, WP), sustainable HRM codes continue to dominate (e.g., S_NSC_PM = 15; S_NER_TM = 10; S_NSC_WP = 11), indicating that neuroleadership is increasingly associated with strategic capability building rather than transactional oversight. Nevertheless, several traditional codes retain moderate presence (e.g., O_NMR_TM = 8; O_NSC_TM = 7; O_NER_PM = 5), suggesting that performance-oriented practices have not disappeared but are being selectively integrated into broader, sustainability-focused HRM frameworks.

Overall, these patterns demonstrate that while certain neuroleadership themes and HRM domains vary in prominence when examined in combination, the dominant alignment of neurocognitive leadership mechanisms with sustainability-oriented HRM remains consistent. This distribution highlights both the evolving priorities of HRM research and the areas, such as motivation, stress resilience, and attentional control, where further empirical development is needed.

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Table 13. Neuroleadership–HRM thematic code distribution by HRM model orientation

Theme cluster	Sustainable HRM (S_) examples (count)	S_ Total	Traditional HRM (O_) examples (count)	O_ Total	Notes
Learning & development (LD)	S_NSC_LD (49), S_NER_LD (40), S_NDM_LD (28), S_NMR_LD (8), S_NAF_LD (2), NDM_LD (1)	128	O_NSC_LD (8), O_NDM_LD (7), O_NMR_LD (1), O_NAF_LD (5), O_NER_LD (5)	26	Sustainable LD clearly dominates; traditional LD codes are present but lower in frequency
Employee engagement & well-being (EE)	S_NER_EE (39), S_NSC_EE (29), S_NDM_EE (9), S_NMR_EE (8), S_NAF_EE (1), S-_NSC-EE (1)	87	O_NSC_EE (2), O_NMR_EE (5), O_NDM_EE (3), O_NAF_EE (1), O_NSR_EE (1)	12	Sustainable EE is dominant; traditional EE codes are minimal
Organizational development (OD)	S_NSC_OD (37), S_NDM_OD (16), S_NSR_OD (2), S_NAF_OD (3), S_NMR_OD (10)	68	O_NSC_OD (4), O_NDM_OD (8), O_NER_OD (1), O_NMR_OD (1), O_NAF_OD (5)	19	Sustainable OD has a higher frequency; traditional OD codes occur sporadically
Performance/talent/work design & productivity (PM, TM, WP)	S_NSC_PM (15), S_NDM_PM (5), S_NSR_PM (2), S_NMR_PM (4), S_NMR_TM (5), S_NER_TM (10), S_NDM_TM (7), S_NDM_WP (6), S_NSR_WP (3), S_NSC_WP (11), S_NER_WP (5), S_NAF_WP (3), S_NAF_TM (1)	76	O_NSC_PM (3), O_NDM_PM (2), O_NMR_PM (3), O_NAF_PM (3), O_NER_PM (5), O_NSC_TM (7), O_NDM_TM (6), O_NMR_TM (8), O_NER_TM (6), O_NAF_TM (3), O_NAF_WP (2), O_NDM_WP (3), O_NMR_WP (3), O_NER_WP (2)	61	Sustainable codes dominate in total, but several traditional PM/TM/WP codes have notable counts

Note: For readability, the table shows selected codes by cluster, so the listed counts do not reflect the full 540 coded intersections.

Discussion

This study examined how neuroleadership research has been incorporated into HRM scholarship over two decades (2005–2025) across ten selected journals. Findings reveal uneven but discernible growth in the integration of neuroscience-informed leadership research into HRM, confirming earlier observations that organizational neuroscience has progressed incrementally rather than uniformly across HRM domains (Waldman et al., 2011; Guarnier & Chimenti, 2024). In line with the study's aim to provide an integrative overview, conceptual structuring, and practice-relevant insights, this discussion interprets the results by linking neuroleadership themes (i.e., neurocognitive mechanisms) to HRM domains and sustainability-oriented HRM frameworks.

Taken together, the results suggest that neuroleadership–HRM scholarship is currently at a disciplinary crossroads, shaped by two competing logics. On the one hand, much of traditional HRM and business research remains anchored in an efficiency-driven paradigm emphasizing control, optimization, and short-term performance outcomes. On the other hand, an emerging sustainability-oriented stream is increasingly visible, introducing a new paradigm that redefines HRM success in terms of human well-being, ethical governance, inclusiveness, and long-term organizational resilience.

Across the reviewed literature, neuroleadership themes related to social cognition, emotional regulation, and decision-making are most strongly associated with sustainability-oriented HRM domains, particularly learning and development, employee engagement and well-being, and organizational

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development. In contrast, traditional performance-driven HRM domains, such as performance management, efficiency-focused work design, and output-oriented talent practices, are comparatively underrepresented. This distribution reflects a disciplinary shift toward people-centered, adaptive HRM approaches that prioritize psychological safety, capability development, and long-term organizational resilience (Aust et al., 2023, 2024; Bratianu & Staneiu, 2024).

This emergent pattern is coherently interpreted through the lens of CGHRM, which positions HRM within a sustainability-oriented logic grounded in employee dignity, ethical responsibility, inclusiveness, and long-term societal contribution (Aust et al., 2020, 2024; Pham et al., 2023). Importantly, this approach does not simply broaden the traditional performance-driven logic; rather, it reflects a paradigmatic shift toward HRM models that gain legitimacy through alignment with broader sustainability expectations, including the UN SDGs (Jackson et al., 2011; Altassan, 2025; Lu et al., 2025). From a neuroleadership perspective, CGHRM is operationalized through micro-level neurocognitive mechanisms, such as emotional regulation, social cognition, attentional control, motivation, and stress resilience, that translate sustainability values (e.g., dignity, participation, solidarity, and long-term value creation) into everyday leadership behaviors. In this way, neuroleadership provides the explanatory bridge between leadership cognition and sustainability-oriented HR practices, particularly in domains related to learning, well-being, and inclusive capability development. These priorities align with SDG-informed HR outcomes, including employee health and well-being (SDG 3), gender equality and inclusive, decent work (SDG 5 and SDG 8), and responsible and environmentally sustainable organizational conduct (SDG 12 and SDG 13) (Pham et al., 2023; Gomes et al., 2025).

Despite this emerging shift, the review identifies substantive theoretical and empirical gaps across several neuroleadership themes and HRM domains. While emotional regulation and social cognition are well represented, especially in crisis and change contexts, other theoretically central neuroleadership themes, including motivation and reward processing, attentional control, and stress resilience, remain underdeveloped across several HRM domains, notably talent management, work design, and productivity (Avey, Avolio & Luthans, 2011; Slater, Turner, Evans & Jones, 2018; Berger & Czakert, 2022; Shelton, Hein & Phipps, 2022). These gaps limit understanding of how leadership cognition supports sustained engagement, commitment, and adaptive performance, all of which are foundational to sustainability-oriented HRM (Tewari & Mahapatra, 2018; Zawan et al., 2019; Gómez-Leal, Holzer, Bradley, Fernández-Berrocal & Patti, 2022; de la Nuez, Nieves & Osorio, 2023; Nayyar et al., 2024).

Moreover, the geographic concentration of research, predominantly in North America, parts of Europe, and China, raises concerns about contextual bias and limits the generalizability of current findings. Leadership cognition and behavioral responses are shaped by cultural, institutional, and societal factors (Dawood & Butt, 2018; Oc, 2018), suggesting the need for greater empirical attention to underrepresented regions. Expanding research beyond dominant contexts would not only enhance external validity but also deepen understanding of how neuroleadership interacts with different HRM systems and sustainability challenges.

Conclusion

This review advances understanding of how neuroleadership has been theorized and empirically examined within HRM research over the past two decades. By systematically integrating neuroleadership themes with core HRM domains through a sustainability-oriented lens, the study demonstrates that contemporary neuroleadership research converges around social, emotional, and cognitive mechanisms of leadership, particularly in learning and development and organizational development contexts. At the same time, the review reveals persistent theoretical and empirical imbalances, with limited integration of motivation, reward processing, attentional control, and stress resilience into several mainstream HRM domains.

The primary theoretical contribution of this study lies in clarifying how neuroleadership functions as a micro-level explanatory foundation for sustainability-oriented HRM, including CGHRM. By

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showing how neurocognitive mechanisms underpin leadership behaviors that support employee well-being, inclusiveness, ethical governance, and long-term value creation, the review connects leadership cognition to broader HRM and societal outcomes.

More broadly, the review provides evidence that HRM scholarship is at a paradigmatic turning point. It highlights a disciplinary transition from an efficiency-driven logic, traditionally focused on control and short-term performance optimization, toward a sustainability-oriented logic that aligns HRM outcomes with SDG-informed expectations for responsible and people-centered organizational practice. In this emerging paradigm, neuroleadership is not a peripheral addition to HRM theory, but a core mechanism through which sustainability values become enacted through everyday leadership decisions and workforce practices. Accordingly, these findings reposition neuroleadership as a theoretically central pathway for translating sustainability values into HRM-relevant leadership practice.

Limitations

Like other research, this study has some limitations that must be acknowledged. First, the review scope was intentionally bounded to articles published in ten high-ranked journals selected for their relevance to HRM and neuroleadership. While this strategy supported analytical depth and ensured high-quality sources, it may have excluded additional relevant work published in adjacent psychology, neuroscience, or organizational behavior outlets. As a result, some conceptual developments and empirical contributions may not be fully represented. In addition, the review was limited to English-language publications, which may have excluded relevant regional studies and introduced language bias (Egger et al., 1997).

Second, limitations arise from the coding and thematic classification process. Although a systematic, theory-driven framework was applied, qualitative coding involves interpretive judgment and may be subject to coder bias (Campbell, Quincy, Osserman & Pedersen, 2013), meaning that some subjectivity in theme classification cannot be entirely eliminated. Finally, the review relied exclusively on published peer-reviewed journal articles, which may introduce publication bias, as studies reporting non-significant or exploratory findings may be less likely to appear in high-ranked outlets, potentially shaping the observed patterns in the literature.

Directions for future research

Future research in neuroleadership and HRM would benefit from a more balanced and comprehensive integration of neurocognitive mechanisms across HRM domains. Although current research has provided significant insights into social–emotional cognition, including empathy, emotional regulation, and social perception, greater scholarly attention is needed for other essential neurocognitive processes such as attentional control, reward processing, cognitive load, and stress resilience. Expanding the neurocognitive framework in this way would enable a more comprehensive understanding of how leadership cognition shapes skill development, job design, workforce segmentation, recruitment strategies, and overall HR system effectiveness.

Further progress in the field would also be supported by increased methodological pluralism. Mixed-methods research designs represent a particularly promising avenue, as they allow scholars to combine the explanatory strength of quantitative approaches with the contextual depth and interpretive richness of qualitative inquiry. By integrating surveys, experiments, and neuroscientific tools (e.g., EEG, fMRI, and biometric measures) with interviews (Murray & Antonakis, 2019), case studies, and observational methods, future studies can more effectively capture the complex cognitive–emotional processes through which neuroleadership is enacted in real organizational settings.

Future research should also extend neuroleadership inquiry across a wider range of cultural and institutional contexts. Cross-cultural studies can enhance theoretical robustness by examining

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how leadership cognition, emotional expression, and decision-making processes vary across regions and organizational environments, thereby strengthening the global relevance of HRM–neuroscience integration.

In addition, further investigation of neuroleadership within sustainable HRM and CGHRM frameworks offers a valuable direction for theory development. Examining how neurocognitive mechanisms support sustainable workforce strategies may deepen understanding of how leadership contributes to well-being, inclusivity, and long-term organizational resilience in alignment with key SDGs. Lastly, future research should adopt multilevel perspectives to examine how neurocognitive processes extend beyond the individual leader, shaping team dynamics, shared meaning, organizational culture, and strategic HR alignment in capability building and organizational transformation.

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