

Global Trends in Public Sector Human Resource Management: A Bibliometric Analysis

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ABSTRACT

This study establishes a comprehensive science mapping blueprint of global public sector human resource management (HRM) scholarship from 2000 to 2024, shifting administrative reform discourse toward a multi-layered structural diagnostic. Employing a tri-dimensional bibliometric network analysis within the VOSviewer environment, this research systematically evaluates the intellectual landscape through three distinct analytical lenses: structural network density, temporal emergence trends, and thematic evolutionary mapping. The empirical findings expose a deeply consolidated institutional core focused on traditional public administration rules, bureaucratic enforcement, and classic employee behavioral outcomes. Concurrently, evolutionary mapping tracks a severe conceptual polarization, revealing that the emerging technological cluster comprising HR analytics, digital transformation, and data-driven systems remains structurally isolated on the periphery, far removed from foundational merit systems and public accountability frameworks. To bridge these systemic frictions, this study provides a crucial policy recommendation: central personnel agencies must move past fragmented technological acquisitions and actively mandate integrated administrative regulations that legally harmonize data-driven algorithmic automation with public sector ethics, representative bureaucracy, and civil service statutory protections. This structural realignment is essential for ensuring that digital public management innovations do not compromise institutional state capacity or democratic accountability.

Keywords: Bibliometric Analysis, Digital HRM, Public Sector Human Resource Management

Introduction

Public sector HRM has become a central concern in contemporary public administration, particularly in the context of increasing demands for efficiency, accountability, and public value creation. While traditionally rooted in administrative and rule-based personnel systems, public sector HRM has progressively evolved toward a more strategic and performance-oriented function. This transformation has been driven by successive waves of public sector reform, including New Public Management (NPM) and more recent governance paradigms that emphasize flexibility,

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collaboration, and innovation (Bouckaert & Jann, 2025; Osborne, 2010). As a result, HRM is no longer viewed merely as an administrative support function, but as a critical mechanism for enhancing organizational effectiveness and service delivery.

Alongside these developments, the scope of public sector HRM has expanded to incorporate behavioral and organizational dimensions. Constructs such as employee performance, organizational commitment, job satisfaction, and leadership have gained prominence in explaining how HR practices influence public sector outcomes. In particular, the growing emphasis on public service motivation highlights the importance of intrinsic values and prosocial behavior in shaping employee attitudes and performance (Afandi, Afandi, & Erdayani, 2026; Ritz & Vandenabeele, 2024). This shift reflects a broader transition toward a more human-centered understanding of HRM, where organizational success is closely linked to employee engagement and motivation.

More recently, digital transformation has emerged as a major force reshaping public sector HRM. The increasing adoption of digital technologies, including HR analytics, data-driven decision-making, and e-government systems, has introduced new opportunities for improving efficiency, transparency, and accountability. At the same time, these developments pose significant challenges, particularly in terms of integrating technological innovation with existing institutional frameworks and governance structures (Strohmeier & Parry, 2024; Tursunbayeva, Di Lauro, & Pagliari, 2022). Consequently, public sector HRM is increasingly characterized by the interaction and often misalignment between technological, behavioral, and institutional dimensions.

Despite the rapid expansion of research at the intersection of technology and public governance, the academic discourse in public sector HRM remains theoretically and structurally fragmented. Previous bibliometric and scoping reviews within public administration have predominantly focused on generalized corporate digital HRM landscapes (He & Li, 2024), broad performance management doctrines, or isolated e-government adoption models (Chen & Geng, 2025). Critical systematic reviews explicitly indicate that while the technical capabilities of HR analytics and algorithmic data-driven systems are expanding rapidly in commercial enterprises (Strohmeier & Parry, 2024; Tursunbayeva et al., 2022), empirical syntheses of how these technologies interface with rigid public-sector properties such as statutory merit systems, administrative accountability, and intrinsic public service values remain heavily underdeveloped and strictly descriptive (Panagiotopoulos & Klievink, 2024; Schuster, Weisser, Baer, & Meyer-Sahling, 2023). This omission creates a profound literature gap. Current global analytical

frameworks fail to map the structural friction between technological modernization and institutional civil service constraints, leaving scholars and practitioners without a systematic overview of how digital transformation truly reshapes public personnel architecture over time.

To bridge this critical empirical gap and justify its definitive importance to the field, this study delivers three distinctive contributions. From a theoretical standpoint, it moves beyond isolated and cross-sectional studies by supplying the first comprehensive global synthesis of public-sector HRM evolution over a 24-year timeline (2000–2024), theoretically defining the structural boundaries where technological innovation misaligns with bureaucratic governance frameworks. Methodologically, by employing an advanced three-dimensional analytical framework (structural, temporal, and thematic mapping) through VOSviewer, this paper establishes a highly rigorously cleaned dataset that serves as a transparent benchmark for future researchers to distinguish conceptually saturated historical domains from emerging, high-value frontiers. From a policy and practical perspective, this study translates complex bibliometric density networks into an actionable evidence-based toolkit; it equips public administrators and policymakers with concrete architectural insights to reconfigure digital literacy, continuous organizational learning, and agile workforce designs without eroding foundational public sector ethics and merit-based institutional fairness.

Research Methods

To chart and evaluate the long-term evolution of public sector Human Resource Management practices globally, this study operationalizes a macro-scale bibliometric science mapping protocol. Utilizing quantitative bibliographic metrics allows researchers to systematically dissect vast bodies of scholarly literature, expose institutional collaboration clusters, and untangle shifting structural boundaries within an active academic domain (Donthu, Kumar, Mukherjee, Pandey, & Lim, 2021). By evaluating the structural density of citation networks alongside keyword distributions, this methodology neutralizes the subjective selection biases that frequently weaken traditional qualitative narrative reviews, thereby offering a highly empirical baseline for tracing disciplinary trajectories. The bibliographic metadata for this investigation was harvested in January 2025 from the Scopus repository, selected intentionally due to its stringent peer-review indexing benchmarks and comprehensive coverage of authoritative public administration and organizational behavior scholarship. Bounded within a twenty-four-year analytical continuum spanning from 2000 to 2024, the data retrieval process was governed by a high-precision advanced Boolean query designed to capture the cross-disciplinary intersection between state administrative

capacity, digital governance, and strategic personnel operations: TITLE-ABS-KEY ("public sector" OR "civil service" OR "public personnel" OR "government capacity") AND TITLE-ABS-KEY ("human resource management" OR "HRM" OR "strategic HR" OR "talent management").

Ensuring the absolute internal integrity and scholastic rigor of the analyzed corpus required the progressive enforcement of demanding inclusion and exclusion parameters. The search protocol restricted document typologies exclusively to peer-reviewed journal articles, intentionally discarding book chapters, conference proceedings, brief editorials, and book reviews to protect the scientific weight of the baseline sample. This was further refined through a strict linguistic boundary that admitted only English-language publications to preserve cross-national analytical comparability. Conceptually, the parameters prioritized articles focused explicitly on global civil service governance mechanisms and systemic state personnel infrastructures, systematically weeding out studies tied to private enterprise frameworks or those lacking empirical utility for contemporary public administration. This multi-stage filtration workflow compressed the raw electronic index records into a highly specialized, clean metadata baseline. Table 1 outlines the complete descriptive profile and explicit selection characteristics defining this finalized dataset.

Table 1. Descriptive Summary and Selection Characteristics of the Refined Public Sector HRM Dataset

Dataset Attribute	Explicit Criteria and Profile Details
Primary Electronic Index	Scopus Database Base Records
Sampling Timeline	2000 – 2024 (Data harvested January 2025)
Document Type Limit	Peer-reviewed Journal Articles Only (Excluding Chapters & Conferences)
Language Boundary	English Language Exclusively
Final Sample Size	500 Valid Cleaned Metadata Records
Subject Classification	Social Sciences; Business, Management, and Accounting
Core Analytic Focus	Global Civil Service Governance and Strategic Public Personnel Systems

Source: Processed by the authors, 2026

Following the final execution of the filtration matrix, the comprehensive metadata records comprising author identities, institutional affiliations, abstracts, keywords, and citation strings were exported for advanced computational parsing. The core analytical processing utilized specialized science mapping applications to rectify conceptual fragmentation via an external data-cleaning thesaurus that manually consolidated synonymous terms and normalized spelling anomalies, mimicking the rigorous data-purification protocols validated in modern digital governance literature (Tursunbayeva et al., 2022). The analytical workflow unfolded across three deeply integrated, non-linear phases that operate without rigid structural divisions. Initial analytical efforts centered on establishing baseline descriptive metrics to chart macroscopic publication trajectories, tracking annual growth velocities, identifying high-impact source outlets, and mapping out the most prolific authors. Building directly upon these descriptive foundations, the analytical lens shifted toward co-word and science mapping visualizations executed over author keyword networks to capture shifting conceptual boundaries and thematic cluster formations across the 24-year timeline. The research concluded with a comprehensive empirical synthesis that confront these network visualization outputs with prevailing public sector management paradigms, highlighting critical literature gaps and charting strategic future trajectories for digital public personnel capacity to anchor the entire framework within contemporary institutional state capacity scholarship.

Results and Discussion

Mapping the Intellectual Structure

The structural topology generated through the keyword co-occurrence analysis exposes a highly consolidated yet conceptually polarized research landscape in public sector HRM. When examining the spatial distribution in Figure 1, the network core is heavily dominated by a dense, interconnected matrix of institutional and behavioral nodes, specifically *public administration*, *employee performance*, *organizational commitment*, *bureaucracy*, and *job satisfaction*. The massive size and central position of these vector coordinates prove that global scholarship remains fundamentally bound to evaluating human resource practices through their direct impact on bureaucratic efficiency, workforce retention, and institutional accountability. This structural concentration closely aligns with contemporary strategic management frameworks that view human capital primarily as an embedded mechanism to optimize public value and operational outcomes. Moving outward from this high-density core toward the network periphery reveals clear thematic divisions that signal critical conceptual shifts and persistent structural disconnects within the discipline.

The structural foundation of the literature is clearly anchored within the green cluster situated at the bottom right of the map, which is dedicated to baseline administrative mechanisms and captures keywords such as *competency*, *civil servant*, *training*, and *merit system*. This cluster represents the traditional regulatory layer of public management, where scholarly inquiry focuses almost exclusively on reinforcing bureaucratic capacity and ensuring procedural compliance. As argued by Baptiste (2023) and Moynihan & Kroll (2023), standardizing workforce competencies remains a critical administrative requirement for state organizations facing modern pressures for transparency and speed. Simultaneously, the red cluster spanning across the bottom left reflects a more sophisticated shift toward macro-level strategic human capital paradigms, grouping terms like *strategic HRM*, *organizational performance*, *knowledge management*, and *diversity*. The structural integration of *knowledge management* alongside *organizational performance* proves that modern public administration research has begun to look beyond mere compliance; it increasingly treats intangible intellectual capital and collaborative learning as core drivers of continuous institutional innovation, a trend heavily validated by Nonaka & Takeuchi (2023) and Boon & Lepak (2023).

The most critical structural friction in the entire network is found in the position of the isolated light-blue cluster positioned on the far right periphery, which contains *digital transformation*, *e-government*, *HR analytics*, and *data-driven HRM*. This cluster represents the most dynamic and rapidly expanding front in public personnel research, capturing a major paradigm shift toward evidence-based administrative practices where recruitment, talent mapping, and productivity metrics are guided by automated systems. Additionally, the inclusion of *remote work* and *hybrid work* within this technical zone highlights how external workspace disruptions have forced a radical reorganization of civil service environments.

VOSviewer mapping exposes a major structural vulnerability: the network links connecting this light-blue digital cluster to the core institutional nodes in the green and red clusters such as *merit system*, *bureaucracy*, and *civil service* are remarkably weak and sparse. This spatial separation reveals that while public sector HRM scholarship has enthusiastically documented the adoption of digital tools, it has systematically failed to integrate these innovations into the foundational governance frameworks of public personnel systems. As highlighted by Mergel & Haug (2024), the literature heavily theorizes digital tools in isolation, without adequately addressing how algorithmic analytics actively reconfigure or conflict with statutory civil service principles like merit-based promotions, neutrality, and administrative equity.

This institutional isolation is further complicated by the yellow cluster on the right, which groups *motivation*, *leadership*, and *employee engagement*. While this domain represents a welcome shift toward the psychological and prosocial dimensions of public employment traditionally explained through public service motivation theory (Chen & Geng, 2025; Guzman-Ibarra & Ramirez-Alujas, 2024; Ritz & Vandenabeele, 2024) its operational connection to the technological light-blue cluster remains highly fragmented. *Leadership* is widely discussed as a critical factor for steering organizational change through rigid bureaucratic barriers. Yet, the network layout reveals a clear disconnect: as noted in recent scoping reviews (Boselie & Brewster, 2024; Tursunbayeva et al., 2022), there is almost no analytical cross-over explaining how public leadership styles adapt or how employee values are affected when managers are forced to operate through automated, data-heavy dashboards.

When tracked chronologically, this network topology illustrates a clear evolutionary path. The discipline originated in rigid personnel mechanics and bureaucratic control (green cluster), transitioned into the output-oriented doctrines of New Public Management (red cluster), and has now entered a highly unstable digital layer (light-blue cluster) marked by data analytics and flexible hybrid architectures. This structural evolution demonstrates that public sector HRM is no longer a collection of isolated administrative processes, but a complex, cross-disciplinary domain where technological innovations continuously collide with rigid institutional frameworks.

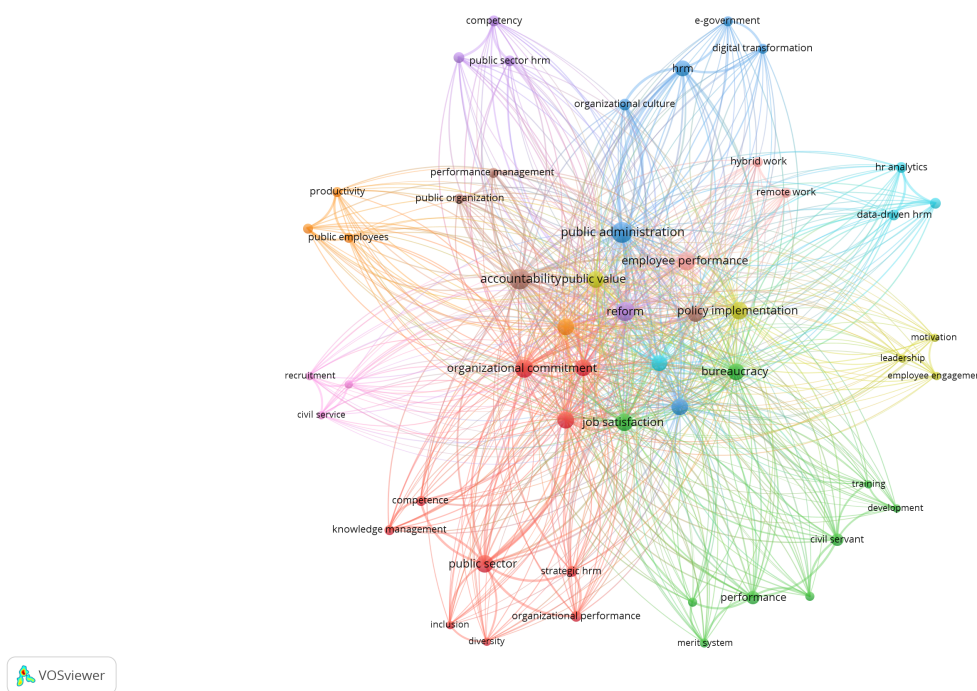


Figure 1. Keyword Co-occurrence Network in Public Sector Human Resource Management

Source: Authors' elaboration based on Scopus data processed using VOSviewer, 2026

Temporal Evolution of Research Themes

The chronological trajectory synthesized through the overlay visualization (Figure 2) reveals a profound ideological and operational shift within public sector HRM scholarship over the analyzed timeline. Tracking the explicit color-coded gradients across the temporal map demonstrates that the discipline did not evolve through linear progression; instead, it experienced a structural replacement of foundational values, moving from rigid, compliance-based personnel administration toward highly fluid, data-driven governance architectures.

The earliest temporal layer of the sampled dataset, visibly localized within the purple and dark blue nodes situated primarily at the bottom left and lower periphery of the map, is dominated by keywords such as recruitment, civil service, knowledge management, diversity, and inclusion. The structural dominance of this cold-color zone reflects an era when academic inquiry was heavily constrained by traditional legalistic frameworks and baseline strategic management adaptations. During this period, the primary objective of public personnel systems was evaluated almost exclusively through the lenses of structural stability, organizational integration, and representative bureaucracy.

As the timeline advances into the intermediate period, the network coordinates undergo a visible conceptual expansion, represented by the widespread transition into the green-colored nodes at the center of the map. This intermediate temporal zone is marked by the prominence of terms like public administration, bureaucracy, performance management, and accountability, capturing the global stabilization of New Public Management doctrines across civil service systems. During this phase, scholarship shifted its analytical lens away from pure input controls to investigate output-oriented accountability mechanisms, competency frameworks, and systemic public value creation. The structural tightening of links around these green vector clusters indicates that researchers began treating public servants not merely as administrative functionaries, but as strategic human capital essential for generating organizational efficiency, a transition heavily supported by contemporary performance-driven models (Moynihan & Kroll, 2023).

The most radical temporal transformation occurs on the modern frontier of the network, explicitly highlighted by the bright yellow clusters flashing on the upper and right peripheries of the map. Here, the historical focus on institutional compliance is completely displaced by a highly connected cluster of technological and adaptive keywords, including digital transformation, HR analytics, artificial intelligence, data-driven HRM, and e-government. This recent yellow-gradient shift represents a major paradigm change where the operational core of public sector personnel management is being rapidly reconfigured by automated metrics and algorithmic decision-making.

The immediate temporal fringe is heavily occupied by remote work, hybrid work, training, and agile governance, which explicitly reflects the administrative adjustments forced onto state institutions by recent global workspace disruptions and rapid digitalization. As noted by Strohmeier & Parry (2024), VOSviewer tracking demonstrates that the current cutting-edge literature has moved past basic descriptions of technology adoption; it is now deeply focused on the organizational tensions that arise when these flexible, yellow-coded algorithmic configurations and modern capability programs collide with rigid, legally bound civil service structures (Mergel, Ganapati, & Whitford, 2021; Tursunbayeva et al., 2022).

A critical temporal analysis reveals a serious theoretical gap in this evolutionary path. While older, established blue-zone nodes like knowledge management show high citation stability over time, their direct structural connections to the emerging yellow terms like HR analytics and artificial intelligence remain remarkably weak and sparse. This indicates that while public sector HRM literature has quickly adopted digital terminology, it has been slow to update its core administrative theories. The discipline is currently caught in a conceptual mismatch: it attempts to

evaluate modern automated workforce analytics using legacy bureaucratic and institutional frameworks. This evolutionary gap presents a crucial opportunity for current scholars to build new, context-sensitive models that can reconcile algorithmic efficiency with traditional public service values like neutrality, representation, and merit-based equity.

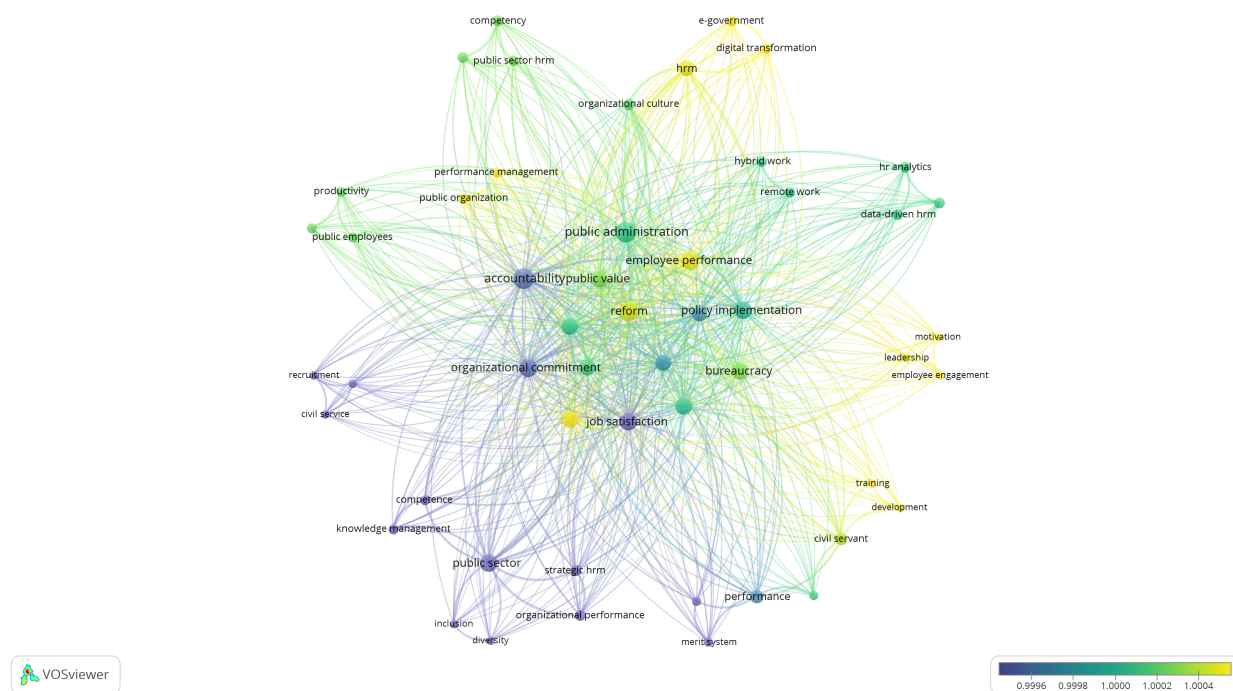


Figure 2. Overlay Visualization of Keyword Trends in Public Sector Human Resource Management

Source: Authors' elaboration based on Scopus data processed using VOSviewer, 2026

Research Hotspots and Thematic Concentration

The density visualization (Figure 3) provides a refined, non-linear perspective on the concentration, intensity, and intellectual weight of specific research themes within the public sector HRM domain. Moving beyond spatial links, the density gradient highlights the uneven distribution of scientific attention, where areas of high publication frequency melt into intense thematic centers.

The absolute central core of the map glows with an intense red and orange hotspot, containing closely packed nodes such as public administration, employee performance, organizational commitment, job satisfaction, reform, bureaucracy, and policy implementation. This high-density concentration proves that the dominant baseline of contemporary scholarship remains heavily anchored in evaluating behavioral and systemic outcomes within traditional state

structures. As argued by Knies et al. (2022) and Van der Wal (2023), this regional density shows that employee capabilities and performance are treated not as independent workplace variables, but as deeply embedded outcomes shaped directly by political, policy, and reform environments. The strong co-location of behavioral variables like job satisfaction and organizational commitment within this fiery red core reflects a mature integration of public service motivation doctrines into mainstream public administration literature. This indicates that scholars widely accept that intrinsic prosocial values act as a primary mechanism for translating HR policies into actual public service outcomes, especially when financial incentives are constrained by civil service frameworks (Kellough & Nigro, 2022; Ritz & Vandenabeele, 2024).

Surrounding this intense core cluster, the visualization maps several secondary, standalone regions that display lower conceptual intensity. A notable independent cluster containing digital transformation and e-government appears localized within a moderately high-density orange-yellow cloud at the top periphery of the map, while its technical counterparts HR analytics and data-driven HRM form a distinct green and yellow cloud on the far right upper quadrant of Figure 3. This specific positioning proves that while technology-enabled management has successfully established itself as an important, standalone research hotspot, it is plagued by a severe structural imbalance. The physical, low-density blue gap separating these technical clouds from the central performance-governance core reveals that HR analytics and algorithmic tools remain conceptually isolated from mainstream public sector HRM frameworks. Scholars are actively documenting technical adoption in isolation, but they have failed to merge these tools into the foundational pillars of civil service governance, leaving their impact on merit-based recruitment or statutory performance indexing largely unaddressed (Mergel & Haug, 2024; Tursunbayeva et al., 2022).

A similar pattern of fragmentation is visible on the eastern flank, where a behavioral cluster grouping motivation, leadership, and employee engagement forms a distinct light-green, semi-peripheral hotspot on the middle right axis of the map. Although contemporary scholarship recognizes leadership as an essential tool for navigating bureaucratic resistance, its physical distance from both the central core and the technological cloud indicates an unresolved disciplinary divide. The literature treats technical automation and human leadership as separate operational domains, failing to provide an integrated framework explaining how leadership behaviors evolve when public managers must operate through data-intensive, automated ecosystems (Ritz & Vandenabeele, 2024; Van der Wal, 2023).

Traditional, compliance-driven domains like training, development, and civil servant are visible within a moderate-density green zone at the lower right quadrant, which explicitly anchors itself right above the performance and merit system nodes located at the absolute bottom of the map. The lower color intensity of this entire lower zone proves that these foundational administrative pillars have reached absolute conceptual maturity. Rather than acting as dynamic frontiers, they represent established institutional contexts that require urgent theoretical reconfiguration. As Bondarouk et al. (2021) and Strohmeier & Parry (2024) note, unless these mature themes are integrated with digital data structures and performance analytics, research in civil service mechanics risks stagnation.

The hierarchical architecture of Figure 3 ultimately shows a discipline in a highly unstable transitional state. Public sector HRM possesses a powerful, well-integrated core of traditional governance knowledge, but its peripheral frontiers both technological and behavioral remain structurally detached from one another. Bridging this divide by connecting automated data systems with institutional accountability and human behavior is the primary requirement for developing future adaptive public personnel frameworks (Mergel et al., 2021; Tursunbayeva et al., 2022).

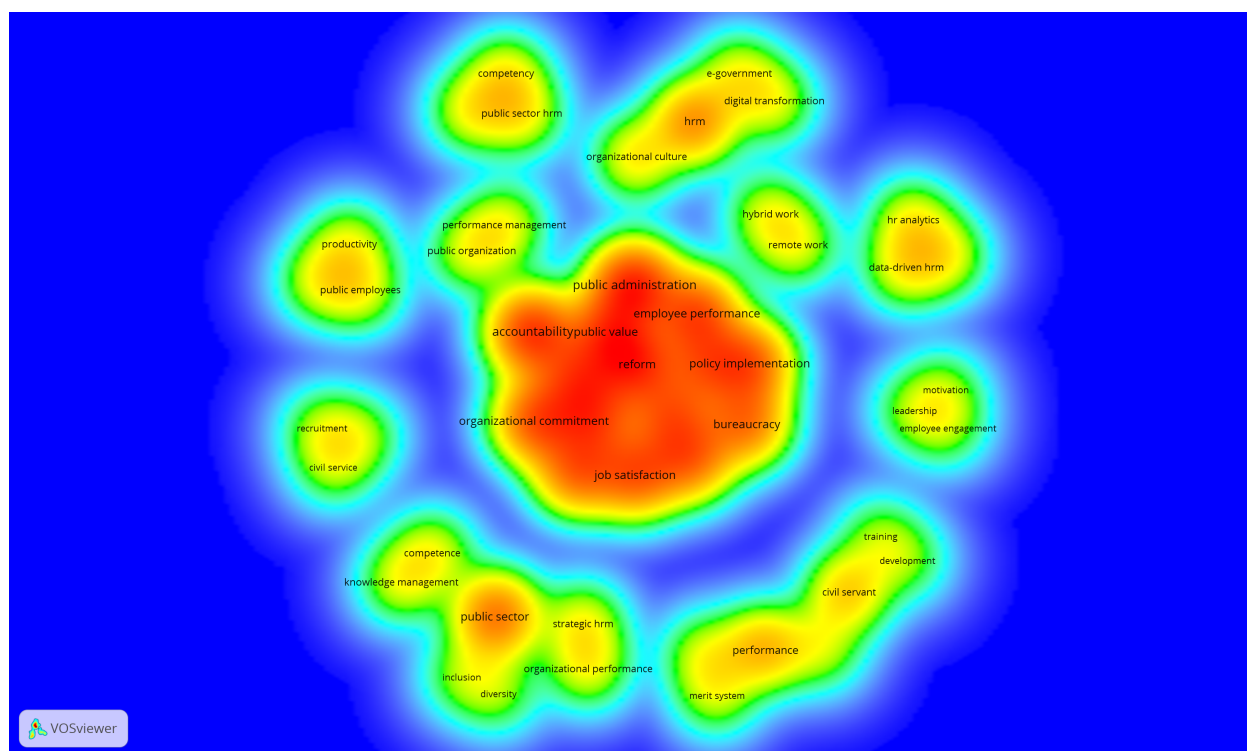


Figure 3. Density Visualization of Keyword Distribution in Public Sector Human Resource Management

Source: Authors' elaboration based on Scopus data processed using VOSviewer, 2026

Theoretical Implications and Research Gaps

The structural and density mapping visualized in this study provides critical theoretical milestones that shift public sector HRM from a series of fragmented operational routines toward an integrated academic domain. As demonstrated by the structural layout in Figure 1, the discipline has successfully moved past its historical constraints as a purely rule-bound personnel administration function. It has instead established a multi-dimensional foundation where strategic, behavioral, and technological elements intersect. This transformation offers a powerful conceptual confirmation of strategic human capital views within state apparatus theory, proving that modern civil service performance and public value creation cannot be achieved through structural mechanisms alone, but are deeply dependent on the psychological contract, intrinsic employee values, and public service motivation. By empirically anchoring behavioral constructs like job satisfaction and organizational commitment at the high-density red and blue core of the network matrix, the bibliometric evidence refutes simplistic procedural doctrines, validating advanced models which argue that administrative outcomes are driven primarily by the prosocial orientation of the public workforce (Hassan & Algahtani, 2023; Knies et al., 2022; Ritz & Vandenabeele, 2024).

The most profound theoretical insight emerges from the severe conceptual mismatch between digital innovation and institutional civil service governance frameworks. Although the emergence of the light-blue technological cluster spanning HR analytics, data-driven HRM, and digital transformation indicates that the field has entered a data-reliant phase, VOSviewer mapping proves that this digital layer exists as an un-embedded, theoretically isolated frontier. The weak vector links and visible low-density blue gap separating these digital nodes from core institutional pillars like merit system and bureaucracy located at the absolute bottom axis of the map expose a critical structural disconnection in the literature. Current academic discourse heavily documents the acquisition of automated tools and e-government platforms in isolation, failing to update foundational public personnel theories to accommodate the algorithmic variables of automated management. Consequently, existing administrative models are caught in a disciplinary lag, attempting to evaluate 21st-century predictive workforce metrics using legacy 20th-century bureaucratic controls and compliance doctrines, a theoretical blind spot heavily criticized in contemporary governance reviews (Mergel & Haug, 2024; Tursunbayeva et al., 2022).

This structural imbalance leaves several critical, high-value research gaps that future public administration scholarship must urgently address. There is an absolute lack of integrative theoretical frameworks capable of legally and organizationally aligning automated people

analytics with statutory civil service principles, leaving public managers without guidance on how data-driven tracking impacts merit-based promotion, recruitment neutrality, and administrative equity (Panagiotopoulos & Klievink, 2024). Empirical literature remains highly fragmented regarding the human consequences of digitalization, creating a critical gap in multi-level studies that track how algorithmic performance evaluation systems actively reshape or conflict with public service motivation over time (Ritz & Vandenabeele, 2024). The current knowledge base suffers from a severe geographic and institutional bias, remaining heavily dominated by high-income Western administrative contexts while systematically ignoring the unique infrastructural constraints, political dependencies, and complex legal realities of developing nations (Maleka & Mrope, 2025). Because traditional themes like recruitment on the western flank and training on the lower right quadrant have reached absolute conceptual saturation, future research must move past cross-sectional descriptive case studies. Scholars should instead utilize rigorous longitudinal and mixed-method designs to capture the dynamic friction between technological modernization, institutional accountability, and human behavior across hierarchical government networks (Wang & Zheng, 2026).

Policy Implications and Future Research Directions

The shifting configuration of the global public sector HRM literature, as demonstrated by the temporal and density networks generated in this study, shifts the administrative reform discourse from an abstract paradigm to a concrete governance challenge. The network visualization (Figure 1) exposes a highly problematic core: an intense scholarly concentration around traditional constructs like public administration, job satisfaction, and organizational commitment, which remains visually and structurally distant from the peripheral light-blue digital cluster comprising HR analytics, data-driven HRM, and e-government. For state administrative bodies and public sector executives, this spatial separation yields an immediate policy warning: operationalizing digital transformation within highly regulated civil service structures cannot continue to be treated as a localized, superficial technical acquisition. Instead, as highlighted in modern governance reviews (Baptiste, 2023; Mergel & Haug, 2024; Vogel & Willems, 2024), government ministries and central personnel agencies must modernise foundational civil service laws and regulations to legally incorporate automated people analytics into statutory frameworks without causing systemic institutional friction.

From an algorithmic governance perspective, as public management structures increasingly adopt machine-learning platforms for talent acquisition and performance indexing, there is an acute risk of historical institutional biases becoming coded directly into administrative

software. Because the central hotspot in the density visualization (Figure 3) remains heavily anchored in rigid bureaucratic control and policy implementation within the red and orange core, introducing predictive data systems without transparent oversight frameworks will inevitably trigger severe institutional misalignment. To prevent these technical tools from undermining administrative integrity, policymakers must establish multi-disciplinary evaluation protocols and oversight frameworks that explicitly bind algorithmic metrics to strict merit-based equity and data ownership guidelines, ensuring that automated workforce optimizations do not erode public service ethics or destroy employee trust (Panagiotopoulos & Klievink, 2024; Schuster et al., 2023).

Public sector capacity building requires an immediate, federally backed transition away from traditional, compliance-driven paradigms. The dynamic positioning within the overlay visualization (Figure 2) demonstrates that while historical, saturated nodes like knowledge management, diversity, and inclusion are localized within the older purple-blue gradient, the contemporary temporal fringe has rapidly shifted toward active capability modernization. Sustainable digital governance cannot be achieved through standalone, superficial IT courses; it demands the institutionalization of continuous organizational learning systems. Central governments must reallocate budgetary provisions toward massive data literacy upskilling programs and modern training frameworks, directly preparing the civil servant workforce to interpret complex performance dashboards and safely translate data insights into equitable public value creation, an operational requirement heavily argued by Moynihan & Kroll (2023) and Strohmeier & Parry (2024).

Looking beyond immediate policy adjustments, the structural fragmentations diagnosed in this science mapping provide clear, high-value avenues for future empirical research. Given that the current literature remains heavily skewed toward high-income Western administrative contexts, a critical gap exists for comparative empirical studies examining how digital HRM innovations function within the unique infrastructure limitations, distinct political dependencies, and legal cultures of developing nations (Maleka & Mrope, 2025). Future research must move past cross-sectional descriptive case studies to investigate the precise causal mechanisms through which digital HRM adoption impacts intrinsic public service motivation over time, utilizing longitudinal multi-level designs to track behavioral shifts and long-term citizen satisfaction (Chen & Geng, 2025; Ritz & Vandenabeele, 2024). Future scholarly work must investigate the organizational friction that occurs when agile, technology-driven workspace designs such as remote work and hybrid work, which sit on the current yellow temporal frontier of the network are forced into highly formalized civil service hierarchies. Investigating these structural

contradictions, as suggested by contemporary digital government frameworks (Torfing & Triantafyllou, 2025; Wang & Zheng, 2026), will provide the discipline with a more realistic, legally grounded, and context-sensitive framework for modernizing public personnel architecture in the digital era.

Conclusion

This study establishes a definitive science mapping blueprint of global public sector Human Resource Management scholarship from 2000 to 2024, shifting administrative reform discourse from descriptive reporting toward a multi-layered structural diagnostic. Through a tri-dimensional bibliometric network analysis executed within the VOSviewer environment, the empirical findings expose a deeply consolidated institutional core focused on public administration rules, bureaucratic enforcement, and classic employee behavioral outcomes. Concurrently, the temporal and thematic evolutionary mapping tracks a severe conceptual polarization, revealing that the emerging technological cluster comprising HR analytics, digital transformation, and data-driven systems remains structurally isolated on the periphery, far away from foundational merit systems and public accountability frameworks. Based on these systemic frictions, central personnel agencies must move past fragmented technological acquisitions and actively mandate integrated administrative regulations that legally harmonize data-driven algorithmic automation with public sector ethics, representative bureaucracy, and civil service statutory protections.

Despite its comprehensive empirical contributions, several inherent limitations embedded within the research design require transparent acknowledgment to ensure a cautious interpretation of the findings. The primary boundary condition stems from the data retrieval architecture being restricted exclusively to the Scopus repository. Although Scopus maintains a rigorous peer-review indexing standard and wide coverage of public administration journals, omitting other prominent metadata engine environments like Web of Science, Dimensions, or Google Scholar potentially excludes valuable localized institutional reports and regional civil service analyses. This constraint is further compounded by a strict linguistic boundary that limited the search protocol to English-language publications, inherently introducing a geographic bias that may underrepresent emerging administrative innovations published in native languages across the Global South. Furthermore, while keyword co-occurrence and co-authorship tracking offer an objective macroscopic visualization of the intellectual landscape, bibliometric science mapping is structurally retrospective, leaving an analytical gap regarding real-time, micro-level behavioral shifts within active state personnel operations.

These operational boundary conditions lay a highly functional foundation for immediate future research directions. Subsequent empirical investigations should prioritize a multi-database cross-mapping approach, intentionally merging Scopus and Web of Science metadata to broaden both the linguistic flexibility and geographic representation of the dataset. Public management scholars should also complement these macroscopic bibliometric trends by embedding localized qualitative case studies and longitudinal mixed-method designs into their field methodologies. Future empirical efforts need to investigate the practical execution of integrated algorithmic regulations within central personnel agencies, thereby providing a more context-sensitive evaluation of how automated decision-making platforms reconfigure civil service equity, administrative transparency, and institutional state capacity in the digital era.

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