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AI-Driven Transformation of Human Resource Management

Implications for Banks[1]

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10.1. Introduction

Human Resource (HR) professionals are experiencing great transitions than ever before due to digital transformations. The digital transformation is responsible to encapsulate the modern digital technologies, data, business operations and processes on a single platform to deliver more effective solutions to the users. Simultaneously, digital transformation is also influencing the traditional approaches of HRM. The induction of digital technologies and algorithms transforming the automation of routine HR tasks to effective decision-making process and HR digital transformation offers the scope in many HR functions to handle the complex and dynamic nature of different HR challenges. This transformation of HRM also expects cost optimisation/reduction, helping the operations team to develop new business and revenue models, and thus contributing to the profit and return on invesment of the entity. But it comes with challenges too, the failure of overcome which may reduce competitive advantage for organizations. Angrave et al. (2016) critically examines the promise and challenges of data-driven decision-making in HR. The HR digital transformation refers to the process of improving and automating HR through modern technology, tools and data. Organizations are now integrating digital solutions with processes to streamline functions like recruitment, onboarding, training, and performance management. This also involves using AI-powered HR tools and Generative AI, AgenticAI, etc. to better cater to employee expectations throughout the employee lifecycle and work.

Bondarouk and Brewste (2016) show that rapid technological developments offer innovative, smart digital context for HR practices to enhance the employee experience and improve HR operations which enable a strong HRM ownership by all stakeholders. A bibliometric analysis and the theories, constructs, characteristics and methods by Bindra et al (2025) indicate that researches in AI driven HRM have evolved from examining basic automation (pre-2018) to exploring complex human-AI interactions (2018 and onward). Scholars have focused on multiple dimensions of applications of AI in HR, however, gaps exist in understanding of how AI can complement HR functions rather than replacing them.

Digitalising HRM functions enhances the employee experience and improve HR operations by streamlining administrative tasks, like filling out forms and processing paperwork (Lumi 2020). This facilitates HR teams to allocate more time and resources to strategic initiatives like talent attraction, acquisition, development, management and boosting employee engagement. It also facilitates data-driven decision-making. Tools for gathering employee related data provide HR professionals and leaders valuable insights into workforce trends and performance metrics. Adopting new HR technologies enhances efficiency by automating traditional HRM tasks involving recruitment,

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onboarding, performance appraisals & evaluations, and more. Digital solutions like employee assistance platforms, applicant tracking systems and online training tools reduce administrative burdens while improving important aspects of decision making. Strohmeier (2007) discusses how access to self-service and digital platforms can enhance employee engagement which is highly relevant to HR's service-quality goals in banking. Such platforms also support communication, teamwork and collaboration among employees, while enabling HR teams to gather employee data in real time.

From recruitment and selection to onboarding, competency mapping to performance management and engagement, elements of digitalization are present in each stage of employee life cycle. Bastida et al. (2025) examine the strategic integration of AI and HRM, highlighting its application opportunities and challenges. In addition to outlining the role of AI in HR, they also discuss its practical implications, ethical challenges and associated risks, and simultaneously offering strategies to mitigate bias, and foster organisational readiness for AI-driven transformation. In this regard, empirical validations of frameworks to assess the model's effectiveness in diverse industry contexts is needed (Tambe et al., 2019). Digital HRM encompasses the integration of digital technologies into HR processes to make them more efficient, effective and interlinked with other domains. Zhou et al. (2025) highlights the impact of data technology fit and perceived values on the usage willingness of big data HR systems in the digital economy. Strohmeier (2007) provides a foundational model linking HR technology to operational efficiency and transformational change. As stated earlier, technological transformations in HRM increases efficiency and provides strategic value (Bondarouk et al. 2017). Technology adoption in financial institutions improves operational efficiency and reduces HR-related costs (Agarwal and Prasad 202) and hence contributes to the profitability of institution. Hence, digital HRM today is positioned as a key component of overall organizational digital maturity and agility (Kane et al., 2017). The strategic combination of HR department and technology leads to streamlined operations, improved decision-making, thereby creating an agile and responsive organization. E-HRM enables strategic agility and improved outcomes (Marler and Fisher, 2013) and contribute to cost reduction and organizational performance (Meijerink, et al., 2016).

In addition to the benefits, digitalisation and AI driven tools bring risks and challenges which need to be addressed. Management of risks, legal compliance, and maintaining digital ethics are areas of concern today. Mittelstadt et al. (2016) explore risks and ethical concerns (bias, transparency, accountability) in algorithmic decision-making, directly relevant to AI-driven HRM in banks. Banks need interventions to identify and address risks, compliance issues, and ethical dilemmas of AI adoption in HR (Tambe et al., 2019). ILO (2021) highlights digital ethics and compliance issues in AI adoption for HRM. Although digital transformation in HRM encompasses several significant connotations, this paper will primarily focus on the aspects of AI-driven HRM.

The chapter proceeds as follows. The next section outlines the objectives and methods of the study. Section 10.3 delves deeper into the digital transformation model for HRM. Section 10.4 highlights the numerous applications of AI in HRM. Section 10.5 analyses the factors that enable the adoption of data-driven decision making in HRM. Section 10.6 discusses the drivers of AI-enabled HRM for the banking sector. Section 10.7 provides some recommendations for the adoption of HRM in Indian banks. Section 10.8 concludes.

10.2. Objective and Method

The financial services industry, especially banking, has embraced digital transformation to meet customer demands, market fluctuations, compliances, efficiency, and remain competitive. However, the transformation is not limited to front-end operations; the HR function is also being equally redefined by technology. Throughout the entire employee life cycle, digital HR tools are reshaping how banks attract, manage, and retain talent. Vidhya (2025) explores the strategic integration of AI and digital transformation into HRM, focusing on

how these technologies can revolutionize talent acquisition, management, engagement and performance evaluation. Not only this, talent development through continuous learning, upskilling and competency development are also revolutionized through technological support with learning platforms.

In this direction, the present paper contributes to how HRM can lead, integrate and adapt to AI-driven workforce transformation by suggesting a structured roadmap for AI integration. Combining existing models with theoretical approach in digital arena, this paper demonstrates how data-driven approaches and adaptive HR practices can empower banks to navigate complex decisions in HR functions. Ethical considerations and challenges are also pinpointed providing a balanced perspective on implementing technology-driven HR innovations in the current landscape of HR and digital transformation in banks. The integration of technology, particularly AI and data analytics, into HRM introduces a complex web of ethical considerations and challenges that organizations must navigate to avoid causing harm and to build trust.

The present paper explores the drivers and components of HRM digital transformation, identifies digital HRM tools and practices in use, assesses the HRM outcomes and employee experience and provides a strategic framework for AI driven HRM adoption in banks. This research attempts to provide insights into how banks can maximize value from digital HRM strategies. This paper adopts a qualitative approach based on the review of secondary data including industry reports, academic journals, case studies, and expert interviews. It also considers documents and published data from leading public and private banks in India. The secondary data is subjectively analysed to suggest an AI driven HRM framework for banks.

10.3. The Digital Transformation Model in HRM

To understand the applications of AI in HRM, it is essential to analyse the dimensions of digital transformation in HRM. Dave Ulrich's Digital HR Transformation Model (2017) outlines how HR can evolve in response to digital disruptions by focusing on four key dimensions: first, 'digital HRM' which involves modernizing HR functions and operations with technology. This involves automating HR processes (such as payroll, onboarding), using cloud-based HR platforms and implementing HR chatbots and self-service portals. Second, 'digital workforce' which involves enabling employees to work in digitally-enabled ways. This requires encouraging virtual collaboration, promoting remote work and digital communication tools and creating digital skills and literacy across the workforce. Third, 'digital workplace' by creating a work environment supported by digital infrastructure. This involves integrating technology and analytics into workflows, providing digital tools for productivity and collaboration, and enhancing employee experience with seamless tech interfaces. Finally, 'digital business' by aligning HR to support business transformation through digital strategy. This involves people analytics for decision making, aligning workforce planning with digital business models for execution and helping leaders and teams adapt to other digital transformations in business.

Ulrich's model conceptualises four phases in digital transformation in HR. Firstly, it focuses on HR efficiency in which organizations invest in technology platforms that efficiently manage HR processes. The key area of concern in this phase is 'to what extent technology can be used to streamline administrative HR work'. Secondly, HR effectiveness, in which organizations can use HR technology to upgrade existing people practices such as performance management, talent acquisition, and training. The critical area of concern in this phase is 'to what extent can technology innovate HR practices'. Thirdly, information which support firms to leverage people analytics for business impact. This depends on the criteria 'to what extent can technology be used to access information'. Fourthly, connection/experience which is related to usage of digital HR software and tools to foster a connection between people. This involves 'creating experiences between people, leveraging social networks and technology'. Adoption and application of digital

technologies, in most cases, also create negative impacts and anxieties on people's minds. Employees who are not that digitally savvy will suffer from anxiety and stress resulting from technology use at work. The success of digital transformation in HRM is not just a technological challenge but a profound human and organizational change challenge. Failure to address the 'people side' of this change is a primary reason why many digital initiatives fail.

The adoption of AI and digital tools in HRM creates several legitimate anxieties among employees and managers:

1. *Fear of job displacement*: The most direct anxiety is the belief that robots will replace human jobs, particularly among HR staff themselves and employees in roles perceived as automatable.
2. *Skill obsolescence anxiety*: Employees, especially those less digitally savvy, worry that their current skills will no longer be valued, creating a fear of being left behind.
3. *Loss of autonomy and control*: Managers may fear that algorithmic decisions will override their own judgment and experience, reducing their autonomy.
4. *Distrust and anxiety*: Not understanding how an AI system works leads to distrust. If a system recommends a promotion or a training course, employees may question, 'Why? How was this decision made?'
5. *Surveillance and privacy anxiety*: The increased data collection necessary for analytics can make employees feel constantly monitored, leading to a culture of fear and stress.

To mitigate these anxieties and ensure adoption, a structured change management approach is non-negotiable. The investment in change management and communication must be considered as critical as investment in technology. It is the bridge that connects technological potential to human adoption and organizational value.

10.4. AI Driven HRM

Continuous disruptions in banking provides scope for professionals, managers and leaders to use technology to respond and adapt to disruptions and ever-changing societal and workforce needs. Abston et al. (2024) find that most AI-driven transformations fail without HR alignment, and propose a human-centric HRM framework focusing on culture, leadership, knowledge, policies, and tools to enable ethical, effective, and sustainable AI adoption. Digital transformation of HR refers to 'the adoption of digital technologies to enhance HR operations and align them more closely with business strategy' (Bondarouk & Brewster, 2016). It involves using tools such as AI, machine learning, big data, mobile platforms, blockchain (Deep and Verma, 2025) and cloud-based HR systems. Gupta et al. (2025) explores the impact of technology on HR practices and how organisations can effectively incorporate progress in technology to improve HR processes. Digital HRM provides real-world examples, case studies, and best practices that illustrate how banks can successfully leverage technology to improve their HR processes and outcomes managing the entire employee experience from talent attraction and acquisition to talent retention.

Talent Acquisition

Allal-Chérif et al. (2021) analyse how digital technologies contribute to improving the successive stages of the recruitment process. In this regard e-recruitment is an emerging and polymorphous phenomenon that starts with identification of candidates on social platforms, continues through tools such as gamification of recruitment and job interviews conducted with chatbots, and ends by matching a candidate and a job using AI in the recruitment cycle. Lv (2025) indicates that traditional talent matching methods generally rely on manual rules and static feature analysis, resulting in insufficient matching precision and poor adaptability. Hence, the paper constructs an innovative talent matching model based on the optimized support vector machine algorithm to address this problem. The results demonstrate an innovative talent matching model providing efficient, personalized, and intelligent solution for the dynamic employment market. Similarly, Roppelt et al. (2025) explores the adoption of AI in talent acquisition domain to realize antic-

ipated efficiency gains. This empowers both information technology and HRM to proactively engage in mitigation strategies to navigate the complex landscape of AI adoption.

AI-driven new advancements are highlighted by Gupta et al. (2025) which includes the capability of AI in similar areas of workforce planning and recruitment. AI-driven tools now act as transformative instruments to tackle old issues and open additional opportunities. AI in recruitment highlights benefits such as adaptability, speed and acuracy which address the issues present in traditional context. Natural Language Processing, machine learning, chatbots, computer vision, and other AI advancements - including those related to sourcing, screening, and interviewing candidates are becoming common now. At the same time, there is a need for ensuring transparency, and protecting data privacy, and ethical issues.

Talent Development

In the area of training and development, Rai (2025) explores the amalgamation of gamification and virtual reality as ground-breaking and innovative tools. Gamification, which incorporates game-design elements such as points, rewards, and competition, and virtual reality, which offers hands-on learning experiences, can transform traditional training methods by improving engagement, motivation, and skill development. Integration of these tools with learning helps to create, customize and personalize interactive learning environments. It is observed that gamification and virtual reality can offer an influential solution for modern workforce development challenges, addressing both technical and soft skill training needs.

Talent Management

Dahm et al. (2025) provides insights into digital interventions, which are associated with increased efficiency and standardization of routine HR processes. They also reveal the cultural and regulatory challenges in implementing digital tools in talent management. Studies also explore how robotics can either work on definitive processes or displace human workers (Gupta, 2025). Various digital tools are now used for communication within organizations. Sharma et al. (2025) focuses on the use of the metaverse in various HR activities throughout the business world. As the metaverse redesigns how people work, HR executives who should be championing this transformation may face serious consequences, therefore posing serious challenges. Research (Sharma et al., 2025) shows that HR and the workplace in the future are going to be influenced by metaverse in three ways, namely equity in a modern digital workplace, establishing a successful collaborative workplace, and techniques for recruitment. The metaverse is rapidly transforming the workplace for which organizations are making significant investments to develop their infrastructure. The modern employers are making use of virtual recruitment fairs to connect with job seekers. Similar implications can be expected for banking sector in future. In the context of banking, several studies highlight the role of HR in facilitating digital culture, reskilling employees, and enabling workforce agility (Choudhury and Pattnaik, 2020). The Asia-Pacific banking sector, in particular, has shown a rise in HR tech investments post-pandemic due to remote work demands and the need for digital onboarding (PwC, 2021).

10.5. Enablers of Data Driven Decision making in HRM

There are many HR processes and dimensions of the employee experience that can benefit from digitalization. Automation of routine tasks using digital HR platforms (e.g., SAP SuccessFactors, Workday etc.) help to automate tasks like payroll, leave management, and attendance tracking. Similarly, Chatbots handle frequently asked questions, onboarding queries, and basic employee services. Not only this, Data-driven decision-making using predictive analytics and descriptive analytics is becoming a new norm. In this line, HR analytics tools help in predicting attrition, demand forecasting, identifying skill gaps, and optimizing recruitment. Also, Dashboards offer real-time insights into employee performance, diversity, and recruitment metrics and engagement metrics.

Similarly, recognition and rewards platforms support total compensation management, giving all team members the capability to share

messages of appreciation anytime, anywhere. Employee engagement and feedback solutions using employee engagement platforms would let employees share feedback across a variety of digital channels, like Pulse surveys and AI-powered chatbots. They empower team members to share their real thoughts and perspectives, giving banks insights into everything from how employees feel about bank's current benefits to whether they're satisfied in their current role. Platforms like 'HR Pulse' and 'Pulse Software' provide tools for managing various HR functions such as employee lifecycle management, onboarding, communication, and performance management. The 'HR Pulse Software' refers to a category of human resources tools designed to frequently and efficiently measure employee sentiment, engagement, and well-being.

Pulse surveys and sentiment analysis tools, AI-driven virtual assistants for answering HR queries and customizable benefit platforms would enhance employee engagement and experience.

Recruitment and onboarding innovations with digital solutions and digital onboarding platforms would enable new hires to complete paperwork, access training materials, and connect with their new colleagues. These innovations and others would improve the candidate experience and help new employees begin performing quickly. AI-based screening tools such as chatbots, video interview analysis, digital document verification, e-signatures, and onboarding through mobile apps and learning management platforms can be useful for banks.

Banks may also use HR Analytics and Workforce Planning through predictive analytics for assessing attrition, absenteeism, and performance trends. Real-time feedback tools, goal tracking apps, and continuous performance reviews can replace outdated annual appraisals and align individual performance with strategic goals. Banks are already using employee self-service portals which act as a centralized location where team members can manage their personal information, access HR policies and resources, request time off, and more without HR intervention.

Similarly, digital learning platforms are used by many banks to provide access to online courses and other on-demand learning opportunities, enabling employees to take ownership of their development and pursue training when and where they prefer. Digital HR teams can use these platforms to track employee progress, identify skills gaps, and tailor learning experiences to meet individual and organizational needs. Benson et al. (2002) highlights the challenges faced by HR professionals in promoting individual and organizational learning and performance improvement (Azami and Gupta, 2025). In this context, Learning Management System offering microlearning, gamification, mobile access, and AI-curated learning paths based on skills gaps & roles can boost engagement and retention. Table 10.1 shows the components of digital HRM in banking.

TABLE 10.1

Components of Digital HRM in Banking

Component	*Description*
Digital Recruitment	AI-driven candidate screening, virtual interviews, chatbots for hiring.
Learning & Development	E-learning platforms, personalized training via AI, VR simulations for banking roles.
Performance Management	Real-time feedback tools, AI-powered performance analytics.
Employee Engagement	Mobile HR apps, gamification, pulse surveys.
HR Analytics & AI	Predictive attrition models, workforce planning dashboards.
Payroll & Benefits Automation	Self-service portals, blockchain for payroll security.
Workforce Mobility & Remote Tools	Cloud-based collaboration, digital workspace solutions.

Source: Authors' Construction.

Traditional HRM Vs Digital HRM

Digital HRM differs from traditional HRM in a way that it digitalizes manual tasks such as record- keeping, data analysis, and answering employee questions. The difference between digital and traditional HRM is best illustrated with Table 10.2.

TABLE 10.2

Traditional HRM Vs AI-Based HRM in Banking

Aspect	*Traditional HRM in Banking*	*AI-Based HRM in Banking*
Recruitment	Manual resume screening, time-consuming interviews.	AI-powered resume parsing, chatbots for initial screening, predictive hiring analytics.
Employee Onboarding	Paper-based, in-person training, slow process.	Automated workflows, virtual onboarding assistants, AI-driven training modules.
Performance Management	Annual reviews, subjective evaluations.	Real-time performance tracking, AI-driven analytics for unbiased assessments.
Employee Engagement	Surveys, manual feedback collection.	Sentiment analysis via AI, chatbots for instant feedback, personalized engagement strategies.
Training & Development	Generic training programs, limited personalization.	AI-driven personalized learning paths, adaptive training platforms.
Payroll & Compliance	Manual calculations, prone to errors.	AI automates payroll, ensures regulatory compliance, detects anomalies.
Workforce Planning	Historical data-based forecasting, less accurate.	Predictive analytics for talent demand, AI-driven workforce optimization.
Bias & Diversity	Human biases may influence decisions.	AI reduces bias in hiring & promotions, promotes diversity.
Employee Retention	Reactive measures (exit interviews).	Predictive attrition models, proactive retention strategies.
Decision-Making	Relies on HR intuition & experience.	Data-driven insights, AI recommendations for HR strategies.

Source: Authors' Construction.

Drivers of HR Digital Transformation in Banks

The key drivers of HR digital transformation (Deloitte, 2020) are identified by Kampoowale et al. (2025). This includes digital needs of internal customers, industry advancements, competitive dynamics, digital governance, and the broader demands of the digital age. The research investigates both technological and organizational factors that contribute to the successful incorporation of digital technologies in HR functions, including recruitment, training, development, and performance assessment. Digital maturity plays a significant role in this context. Shahiduzzaman (2025) identifies emerging themes and success factors of HRM in the digital age. By literature review of 190 journal articles for a period of 20172024, this paper identifies three critical themes shaping contemporary HRM, namely: digital transformation and competition, innovation and performance management, and adaptive HRM.

The multidimensionality of HRM digital maturity from technology and people perspective to fostering innovation and crisis management, is reflected in the papers referred in the previous paragraph. Several factors require attention to improve the digital maturity of HRM, including HR strategy and governance; talent management, diversity, and safety; employee adoption and competencies; conflict resolution and stakeholder engagement; and HR practitioners' competencies (Grewal et al., 2025). It is essential to understand the factors necessary for the successful digitalisation of HRM (Kampoowale et al., 2024, Shirase et al., 2023) and consequences of the digitalisation of HR. These factors include -

- *Expectations of changing workforce* - Gen Z and millennial employees demand seamless digital experiences, self-service portals, and flexible work models. HR transformation is essential to meet these expectations in banks.

- *Need for agility and scalability* - Banks need to respond quickly to market shifts, competitiveness and regulatory changes. Agile HR systems enable faster recruitment, real-time analytics, and strategic workforce planning to meet the scalability.
- *Post-Pandemic acceleration* - Covid-19 forced banks to adopt digital HR solutions for remote onboarding, virtual training, and employee monitoring. This accelerated long-term transformation in many financial services including Fintech firms and financial inclusion companies adding to the financial landscape of banks.
- *Competitive talent landscape* - Banks now compete with fintech firms for digital talent. A robust digital HR strategy helps build a stronger employer brand and attracts top candidates.

10.6. Key Variables for AI-Enabled HRM in Banking Sector

The successful implementation of AI-enabled HRM in the banking sector hinges on several key variables that span technological, organizational, and regulatory dimensions. Technologically, the accuracy of AI/machine learning models are paramount, particularly for compliance-sensitive decisions like hiring for risk management or loan officer roles, where biased or opaque algorithms could lead to regulatory penalties. Seamless cloud integration is critical to ensure that AI tools can securely interact with core banking systems like SAP or Oracle. Table 10.3 shows the technology related variables and their relevance in banks.

On the data front, high-quality, unbiased, relevant, and up-to-date datasets are essential to train models for fair talent assessments, and real-time analytics enable dynamic workforce planning such as optimizing branch staffing or predicting attrition in high-value roles like relationship managers (Table 10.4).

Table 10.5 shows organizational level variables including workforce readiness, where upskilling programs must prepare employees (e.g., tellers or compliance officers) to collaborate with AI tools, alongside change management strategies to overcome resistance in traditionally risk-averse bank cultures.

TABLE 10.3

Technology and Banking Specific

Technology Variable	*Banking-Specific Relevance*
AI/ML Model Accuracy	High precision needed for compliance-sensitive decisions (e.g., loan officer hiring)
Cloud Integration	Secure hybrid cloud solutions for sensitive employee/financial data
API Ecosystem	Integration with core banking systems
Blockchain for HRM	Immutable records for payroll, credentials
Explainable AI (XAI)	Regulatory requirement for transparent hiring/promotion decisions

Source: Authors' Construction.

TABLE 10.4

Data and Banking Specific

Data Variable	*Banking-Specific Relevance*
Data Quality	Clean, bias-free datasets for risk/compliance roles
Real-Time Analytics	Instant workforce insights for branch staffing optimization
Behavioural Data	Fraud detection patterns applied to internal misconduct monitoring
Talent Market Data	Competitive intelligence on fintech talent pools

Source: Authors' Construction

TABLE 10.5

Workforce and Banking Specific

Workforce Variables	*Banking-Specific Relevance*
AI Adoption Readiness	Upskilling tellers to work with AI coaches
Hybrid Work Policies	AI-driven scheduling for branch vs remote staff
Regulatory Literacy	Training HR on PSD2/GDPR implications for people analytics
Change Resistance	Legacy bank culture adaptation to AI tools

Source: Authors' Construction.

Regulatory compliances introduce unique constraints, including mechanisms for algorithmic bias detection and transparent decision logs to satisfy auditors. Indirect variables, such as employee trust in AI-driven promotions or employer brand perception emerge from these direct inputs and can amplify or undermine transformation success. The poor AI model accuracy may trigger regulatory scrutiny, while biased hiring tools could damage reputation in competitive talent markets. Return on investment is measured through banking-specific key performance indicators such as reduced time-to-hire for anti-money laundering analysts, lower internal fraud incidents detected by AI, or avoided fines through compliant processes. Table 10.6 shows variables related to compliances and risks relevant in banks.

TABLE 10.6

Compliance and Risk and Banking Specific

Compliance & Risk Variable	*Banking-Specific Relevance*
Algorithmic Bias Control	Regular audits for fair lending-related hiring
Data Sovereignty	Local storage requirements for employee data across jurisdictions
Whistleblower AI	Monitoring internal communications for misconduct
Model Governance	Documentation for regulators

Source: Authors' Construction.

TABLE 10.7

Emerging Tech variable and Banking Specific

Emerging Tech Variable	*Banking Application*
Generative AI	Creating personalized training for compliance certifications
VR Assessments	Simulating branch crisis scenarios for leadership hiring
Emotion AI	Detecting stress in customer-facing staff for wellbeing interventions
Predictive Flight Risk	Identifying at-risk relationship managers with clients

Source: Authors' Construction.

Emerging technologies like generative AI (for personalized compliance training) or virtual reality simulations (for branch manager assessments) further expand the variable landscape (Table 10.7). Ultimately, banks must prioritize incremental scaling and strict regulatory mapping starting with low-risk AI applications like resume screening, while continuously monitoring both direct inputs and emergent outcomes to sustain transformation momentum.

Digital HRM and Competitive Benefits

Malik et al. (2025) presents a bibliometric account of the convergence AI solutions and HRM providing an overview of the related contributions. It is seen that when information technology and HRM work together, they can improve information security and limit insider leaks. Digital HRM not only gives banks a competitive advantage, but it also has multiple other benefits such as improved operational efficiency, reduced HRM administrative burden, enhanced employee engagement and satisfaction, data-driven decision making and better risk mitigation, stronger employer branding and competitive advantage, saving time and improving productivity for HRM, streamlining HR processes, boosting (digital) employee experience (physical/digital/cultural experience) and better data management. To quote few use cases, State Bank of India launched 'YONO HRMS' to streamline leave management process, performance reviews, and employee engagement in single platform which resulted in faster processing times and improved user experience (The Business Blaze, 2024). Another use case is of ICICI Bank which uses AI tools for talent acquisition and uses extensive data analytics to enhance campus hiring efficiency. ICICI Bank employs an AI-based recruitment platform using natural language processing driven chatbots, virtual interviews via its iStudio system, and cognitive evaluation tools that assess language, sentiment, and emotions to streamline campus hiring and bulk recruitment processes (ICICI Bank, 2020-21). DBS transformed its HR function using AI for recruitment, chatbots for HR queries, and people analytics for strategic decision-making (Singh and Thakur, 2025).

10.7. Recommendation

AI-Model for HRM in Banking Sector

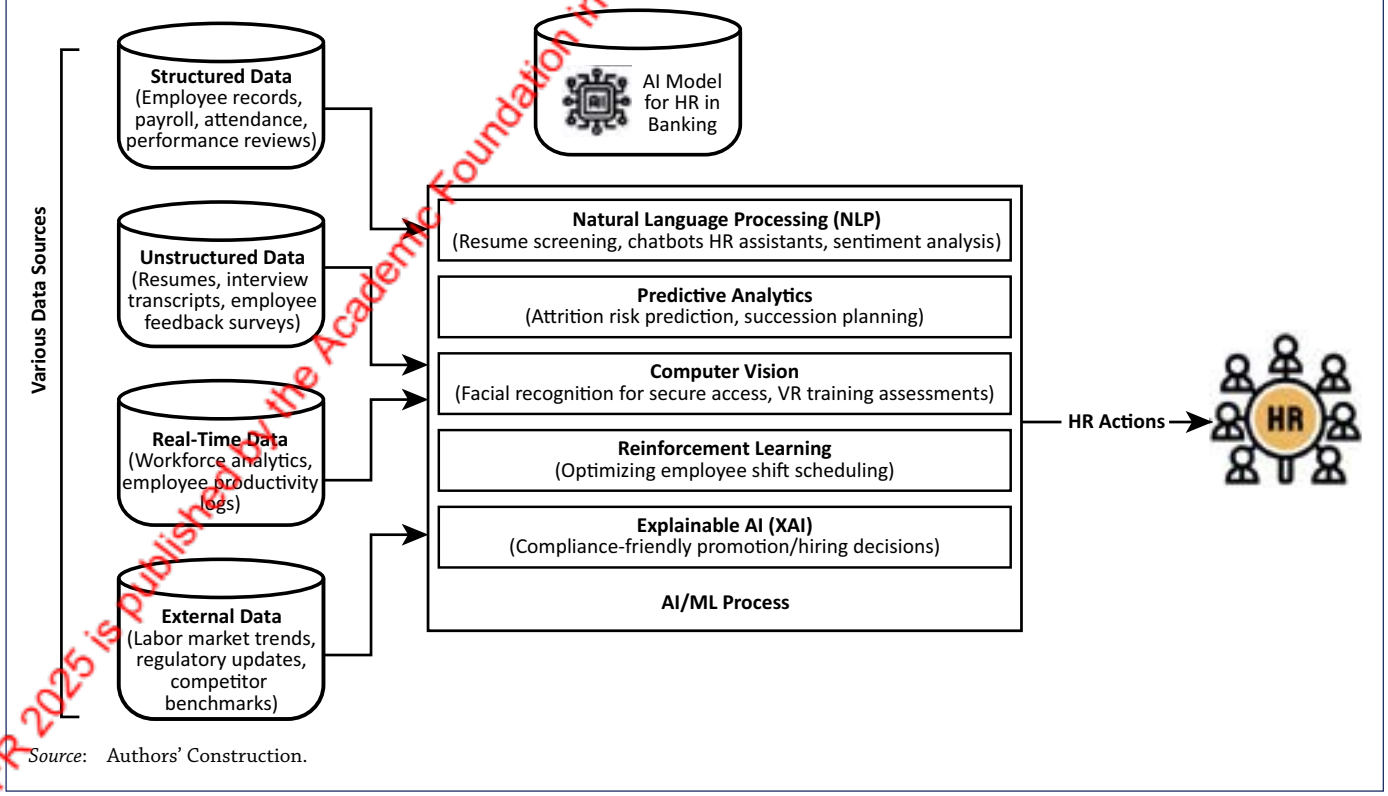
The integration of AI into HRM within banking sector represents a transformative shift in how financial institutions attract, develop, and retain talent while ensuring regulatory compliance. At its core, this AI model leverages multiple data sources including structured employee records, unstructured candidate information, real-time productivity metrics, and external market intelligence to drive data-driven decision-making. Advanced machine learning techniques automate resume screening and employee sentiment analysis, while predictive analytics identify risks among critical roles like compliance officers and relationship managers. Computer vision enables immersive virtual reality training for complex banking scenarios, and explainable AI ensures transparent, auditable decisions for regulatory compliance. The system outputs provide actionable insights ranging from automated hiring recommendations to personalized development plans and real-time risk alerts.

Implementation follows a phased approach beginning with low-risk applications like AI-powered recruitment before expanding to performance management and workforce planning. The AI Framework, suggested in Figure 10.1 aims to address banking-specific challenges including strict regulatory requirements, high-stakes talent decisions, and the need for bias-free processes, ultimately creating a more efficient, compliant, and adaptive HRM function that aligns with the digital transformation of modern banking operations. The model continuously evolves through feedback loops, incorporating emerging technologies like generative AI for policy creation and metaverse applications for employee engagement, positioning banks at the forefront of workforce innovation while maintaining rigorous compliance standards.

The paper proposes AI-driven model for banking sector based on the developments in digital transformation in HRM and provides a roadmap for banks to relook at their traditional HRM practices and incorporate AI driven

FIGURE 10.1

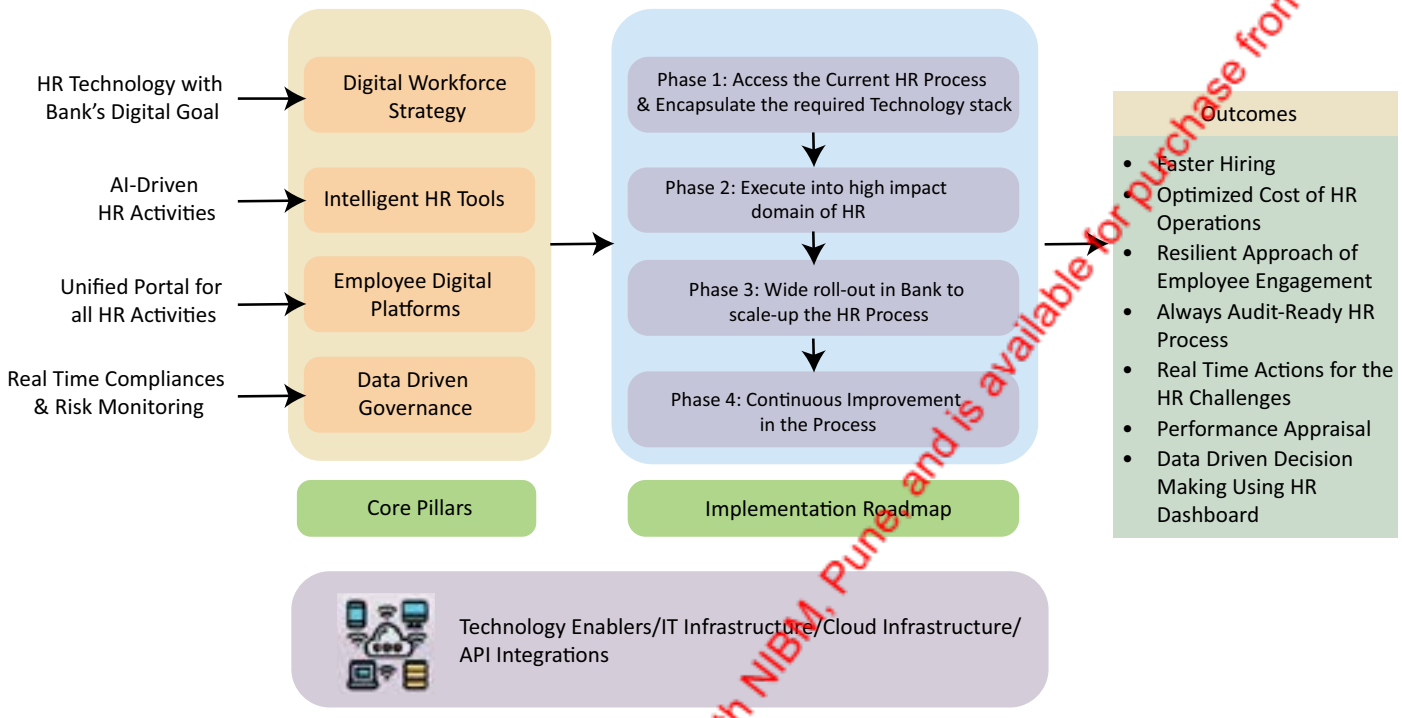
AI Model for Banking Sector



Source: Authors' Construction.

FIGURE 10.2

Roadmap for the Digital HRM in Banking Industry



Source: Authors' Construction.

model for effective performance and cost optimisation in HRM functions.

10.8. Conclusion

AI's future in HRM using AI-powered tools for personalized learning, diversity, and inclusion is very bright. It provides HR professionals and policymakers with insights on leveraging AI for sustainable HR practices. At the same time, it brings challenges and ethical concerns too. Subrahmanyam (2025) explores AI's role in improving HR efficiency and also addresses challenges such as upskilling, infrastructure investment, and ethical concerns like data privacy and bias. The future of HR in banks lies in hyper-personalization, intelligent automation, and continuous learning. Advanced AI tools would help HR to evolve from a support function to a strategic enabler of innovation and growth. The ethical, social and legal concerns in dealing with the impact of emerging technologies in HR needs to be meticulously manged for creating a safe and effective digital HR. HR digital transformation in banks is not just a technological upgrade, but is a cultural shift. By leveraging digital tools, banks can build agile, data-driven, and employee-centric HR functions that support long-term growth. However, success depends on leadership commitment, change management, allocation of funds for both capital and revenue expenditure for implementation of the project, and aligning technology with human values.

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