



## The Role of Technology in Transformation Human Resource Management: Systematic Literature Review

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### *Abstract*

*This study aims to explore the impact of technology on the transformation of human resource management (HRM) through a systematic literature review using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method. Technology has profoundly influenced HRM in recent decades, affecting areas such as recruitment, training, performance management, and employee retention. The research identifies key trends, challenges, and the outcomes of technology implementation in HRM from 2016 to 2023. The goal is to provide valuable insights for practitioners and researchers to improve technology use in HRM and develop effective strategies to address existing challenges. Future research should focus on creating a comprehensive model and practical strategies for utilizing technology in HRM transformation.*

**Keywords:** *Technology, Human Resource Management, Transformation, Systematic Literature Review, PRISMA*

## A. INTRODUCTION

In today's digital era, technology has changed various aspects of life, including in the field of human resource management (HR). Digital transformation in HR management not only focuses on increasing operational efficiency but also on developing innovative strategies that can support the achievement of organizational goals. Technology has introduced new tools and systems that enable organizations to recruit, train, manage, and retain employees more effectively and efficiently. According to Strohmeier (2020), the integration of digital tools in HR processes not only streamlines operations but also enhances employee engagement and satisfaction.

In recent decades, technology has significantly transformed HR management. Advances in information and communication technology have led to the development of new systems and tools that enhance the efficiency and effectiveness of HR functions. For instance, HR information systems (HRIS) facilitate the electronic storage and management of employee data, while predictive analytics tools help identify trends and patterns in employee data to support strategic decision-making. According to Marler and Boudreau (2017), HRIS and predictive analytics are crucial tools in contemporary HR management, aiding organizations in making data-driven decisions.

In addition, technology has also brought about changes in the way organizations train and develop employees. E-learning platforms allow employees to access training materials anytime and anywhere, while virtual learning tools can be used to simulate complex work situations. Technology also allows for real-time performance feedback, which can help employees continuously improve their performance. Shah et al. (2017) emphasize that e-learning and virtual training environments have revolutionized employee development by providing flexible and scalable learning solutions.

However, the implementation of technology in HR management also faces various challenges. These challenges include employee resistance to change, high implementation costs, and data privacy and security issues. Many employees may feel uncomfortable with the changes brought about by new technologies and may feel that the technology threatens their jobs. In addition, there are significant differences in the rate of technology adoption across industry sectors and among organizations of different sizes. Therefore, it is important to understand how technology can be effectively implemented in various organizational contexts and how to overcome the challenges that arise during the transformation process. According to (Bondarouk & Brewster, 2016), resistance to change, implementation costs, and data privacy and security issues are the main challenges in implementing HR technology that need to be managed well to achieve optimal results.

The purpose of this systematic literature review is to investigate the influence of technology in the transformation of HR management using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology. This research will identify major trends, problems, and consequences of HR IT deployment by a comprehensive and methodical examination of the available literature. This review's findings are intended to give beneficial insights for HR management practitioners and scholars looking to maximize the use of technology in their operations and develop effective solutions to handle existing difficulties. According to (Page et al., 2021), the PRISMA approach is the gold standard for performing systematic reviews that assure transparency and reproducibility in the literature review process.

## **B. THEORETICAL OVERVIEW**

(Frey & Osborne, 2017) Technology is a tool and process that enables humans to perform work in a more efficient and effective way, often replacing manual work with automation and on a computer-based systems. (Nick Srnicek, 2016) Technology is a system consisting of hardware, software, and networks that functions to automate processes, improve communication, and process data efficiently in a variety of contexts, including business and everyday life. (Melanie Swan, 2015) Technology refers to the practical application of science and engineering knowledge to solve problems, create innovations, and develop new products or services that add value to society.

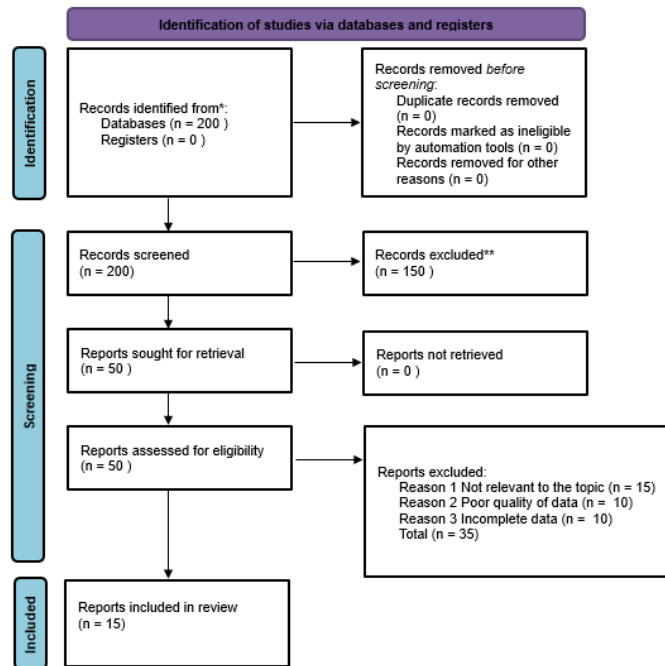
Human resource management involves the planning, organizing, implementation, and supervision of processes related to the recruitment, development, rewarding, integration, maintenance, and separation of the workforce to achieve organizational goals (Anwar Prabu Mangkunegara, 2017). It is also a strategic approach aimed at enhancing skills, motivation, development, and the overall management of resources (Hamali, 2018). This discipline focuses on efficiently and effectively managing workforce relationships and roles to maximize the goals of the company, employees, and society (Ricardianto, 2018). The design of human resource management activities includes the acquisition and coordination of human resources (Bray & Rue, 2015). The system aims to influence employees' attitudes, behaviors, and performance to ensure they make optimal contributions towards achieving organizational objectives (Suprayadi, 2015).

(O'Reilly & Michael Tushman, 2016) Transformation is a fundamental change in an organization that involves radical innovation in products, processes, or business models that aim to create new competitive advantages (Nadya Zhexembayeva, 2020) Transformation is a complex process in which organizations must adopt new mindsets, develop new capabilities, and adapt quickly to significant external changes in order to survive and thrive. (Rita Gunther McGrath, 2019) explains that transformation is a process in which an organization moves from an old business model that is no longer relevant to a new business model that is more appropriate to current market conditions, often through the development of innovative strategies and the use of advanced technology.

## **C. RESEARCH METHODS**

The study employed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method to identify, select, and analyze pertinent literature. This approach involves four key stages: identification, screening, eligibility, and inclusion. A search was performed across academic databases such as Scopus, Web of Science, and Google Scholar using keywords like "technology," "transformation," "human resource management," and "systematic review," resulting in 200 articles. No duplicates were identified, and articles were excluded by automated tools or other means prior to screening. Following the initial 200 articles, a preliminary screening eliminated duplicates (none) and irrelevant articles based on title and abstract, leaving 50 articles for the next phase. Full-text reviews were then conducted on these 50 articles to determine their relevance to the research topic. As a result, 35 articles were excluded, leaving 15 articles that were deemed relevant.

**Figure.1**  
**PRISMA Method**



**D. RESEARCH RESULTS AND DISCUSSION**

**Table. 1**  
**PRISMA Analysis**

No	Researcher	Title	Research Design	Result
1	Jie Zhang & Zhisheng Chen, 2024	Exploring Human Resource Management Digital Transformation in the Digital Age	Literatur Review	Internal digital demands, industry innovation, competitive challenges, and governance issues are driving HRM digital transformation. The study also examines how this transformation impacts HRM processes, including digital workplaces, HRM procedures, and employee services.
2	Muduli & Choudhury (2024)	Exploring the role of workforce agility on digital transformation	Systematic Literature Review (SLR)	Agile attitudes and behaviors greatly influence digital transformation. The study shows that organizations with agile workforces are more efficient and adaptable during the transformation process.
3	Mer et al. (2023)	Artificial Intelligence in Human Resource Management: Recent Trends	Systematic Literature Review	The research identifies key trends and AI's role in HR, recruitment, and training, showing that AI can streamline processes and enhance data-

		and Research Agenda		driven efficiency. However, it also emphasizes the importance of ethical considerations and training for HR professionals.
4	Rawashdeh et al. (2022)	Disruptive human resource management technologies: a systematic literature review	Systematic Literature Review	The study found that e-HRM technology enhances operational efficiency and employee satisfaction in the hospitality sector, but it demands careful implementation and ongoing updates.
5	Rajasshrie Pillai & Kailash B.L. Srivastava (2023)	Smart HRM 4.0 practices for organizational performance: the role of dynamic capabilities	PLS-SEM analysis	Positive factors driving SHRM 4.0 include support from top management, HR readiness, competitive pressure, technological preparedness, and perceived benefits. Negative factors involve concerns about security and privacy. SHRM 4.0 methods enhance dynamic capabilities such as learning, integration, and reconfiguration, which in turn boost organizational performance.
6	Dr. Roberta Fenech et al. (2019)	The Changing Role of Human Resource Management in an Era of Digital Transformation	Qualitative Methodology, Semi-Structured Interviews	Digitalization impacts HR practices, particularly the use of HRIS. Lack of emphasis on the role of HR in digitalization strategies. Key areas: HR planning, reward management, training, dan hubungan karyawan.
7	Aan Adiazmil. S, Muhammad Hidayat, Dynah A. Basuil, 2024	Strategic Human Resource Planning in the Era of Digital Transformation	Systematic Literature Review	The research underscores the importance of integrating advanced technology, engaging key stakeholders, and focusing on the development of employee skills and leadership as essential components of adaptive HR planning. Organizations that effectively align their HR planning with sustainability goals tend to generate more widespread positive effects. Major challenges in implementation include overcoming resistance to change, dealing with technological uncertainty, and forecasting future skill requirements.
8	Selma Kilic Kirilmaz (2020)	Digital transformation in human resources management: investigation of	A qualitative research	According to the research findings, many organizations have incorporated HRM practices in the digital world. Businesses commonly utilize

		digital HRM practices of businesses.		chatbots, QR codes to accept job applications, mobile HRM applications, dashboards for data-driven analysis, and artificial intelligence in the recruiting process.
9	Zhiyi Wang (2024)	Human resource organization support and management strategies under digital transformation	Case Analysis	The report highlighted that balancing technology and culture, as well as data and talent, is crucial for successful digital transformation. Company A thrived through digital techniques, while Company B gained a competitive edge by focusing on adaptable human resource strategies.
10	Silvy Sondari Gadzali et al (2021)	Human Resource Management Strategy in Organisational Digital Transformation	Qualitative Research	The study finds that HR strategy is crucial for organizational performance during digital transformation. To optimize digital technology use, organizations should enhance employee digital competence, implement cultural and leadership changes, restructure properly, manage talent, measure performance, communicate effectively, remain flexible, and manage risks well.
11	Demetris Vrontis et al (2021)	A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective.	Systematic Literature Review	The paper explores the relationship between AI and workplace outcomes using basic HR functions and the 'antecedent, phenomenon, consequence' paradigm. The paper review publications based on year, theory, method, and key themes within this framework. Key recommendations for future research include using different units of analysis and theories at the individual, team, and institutional levels, contextualized within HR literature.
12	Jotabá, M. N et al (2022)	Innovation and human resource management: a systematic literature review.	Systematic Literature Review	The study categorizes theoretical perspectives on human resource development into four approaches: (1) organizational success factors, (2) strategic HR management, (3) human behavior, and (4) learning management.

13	Shobitha Poulose et al (2024)	Determinants and drivers of change for digital transformation and digitalization in human resource management: a systematic literature review and conceptual framework building	Systematic Literature Review	The results of this study develop a comprehensive framework that covers the drivers and barriers in the digitalization strategy of human resource management (HRM) in companies. By analyzing 157 articles from 2011 to 2024, this study identifies factors that influence the success of HR digital transformation, such as technology, organizational culture, leadership, and HR skills, as well as barriers such as resistance to change, budget constraints, and lack of managerial support. The resulting framework can serve as a valuable guide for companies in designing and implementing HR digitalization strategies effectively.
14	Fenech, R. Et al (2019)	The changing role of human resource management in an era of digital transformation.	Qualitative Research	The main conclusion is that while digitalization, especially through HR information systems, greatly affects daily HR practices, the role of HR in shaping digitalization strategies is often overlooked.
15	Fernandez et al (2021)	Tackling the HR digitalization challenge: key factors and barriers to HR analytics adoption	A sequential two- step review	The findings reveal persistent uncertainty around HR Analytics, despite a growing consensus on its definition. Fourteen challenges to its adoption were identified, spanning data, technology, people, and management, leading to 14 key characteristics for successful implementation in enterprises.

Source : Data processed (2024)

The PRISMA table offers a systematic review of studies on digital transformation in HRM. Zhang & Chen (2024) highlighted drivers such as internal digital needs, industry innovation, and competitive pressures. Muduli & Choudhury (2024) emphasized the impact of workforce agility on efficiency and adaptability. Mer (2023) and Priyashantha et al. (2022) discussed how AI and e-HRM technologies improve operational efficiency and employee satisfaction, noting the need for effective strategies and updates. Pillai & Srivastava (2023) found that management support, technology readiness, and perceived benefits enhance SHRM 4.0 practices, boosting organizational performance.

Fenech et al. (2019) and Kirilmaz (2020) examined the impact of digitalization on HR practices, especially using human resource information systems (HRIS) and various digital HRM practices. Hidayat & Basuil (2024) highlighted the importance of technology integration, stakeholder engagement, and skill development in HR planning responsive to the digital era. Studies by Wang (2024) and Gadzali et al. (2023) emphasized balancing

technology and culture to support successful digital transformation, focusing on flexibility, competitive advantage, and proper organizational restructuring. Pereira et al. (2023) discussed the role of intelligent automation technology in HR management, including human-robot/AI collaboration, data-driven decision making, and learning opportunities.

Jotabá et al. (2022) categorized theoretical perspectives on HR development through innovative practices, while Poulouse et al. (2024) developed a comprehensive framework for HRM digitalization strategies, considering drivers and barriers like resistance to change and budget constraints. Fernandez & Gallardo-Gallardo (2021) identified key barriers and factors in adopting HR Analytics, highlighting the need for a clear conceptual understanding to facilitate successful adoption in companies. Overall, the table illustrates the complexity of implementing and managing digital transformation in HRM, emphasizing the necessity of an integrated strategy for sustainable success.

## **E. CONCLUSION**

The PRISMA table analysis underscores the critical importance of digital transformation in HRM, addressing aspects like customer digital needs, industry innovation, and competitor challenges. Workforce agility, AI, and e-HRM technologies enhance operational efficiency and employee satisfaction but require effective implementation strategies. Management support, technology readiness, and perceived benefits are crucial for SHRM 4.0 practices and enhancing organizational dynamic capabilities. The study emphasizes balancing technology with culture, flexibility, competitive advantage, and organizational restructuring. Successful HRM digital transformation hinges on integrating technology, engaging stakeholders, and developing digital-responsive skills.



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