

THE ROLE OF ELECTRONICS HUMAN RESOURCE MANAGEMENT (e-HRM)

Fransiska¹, Ayu Wulandari², Khuzaini³, Syahrial Shaddiq⁴

Muhammad Arsyad Al Banjari Islamic University of Kalimantan, Banjarmasin^{1,2,3}

Lambung Mangkurat University, Banjarmasin, Indonesia⁴

Email: fransiska.hadrianti@gmail.com¹ ayuw260302@gmail.com² khuzainiuniska1@gmail.com³
syahrial.s@ulm.ac.id⁴

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Abstract

The development of digital technology has brought significant changes to human resource management functions. The concept of Electronics Human Resource Management (e-HRM) enables organizations to manage HR functions more efficiently, flexibly, and in an integrated manner with digital technology that supports the Industry 4.0 revolution. Furthermore, the integration of e-HRM is expected to address the demands of Society 5.0, where technology is used to sustainably enhance human well-being. This article aims to examine the role of e-HRM in supporting organizational transformation toward Industry 4.0 and Society 5.0 through a conceptual study approach. The discussion results are expected to contribute to practitioners and researchers in developing an adaptive e-HRM implementation framework in the digital era.

1. INTRODUCTION

The development of digital technology over the last two decades has transformed how organizations operate, innovate, and compete. The Fourth Industrial Revolution, marked by automation, the Internet of Things (IoT), big data, and artificial intelligence (AI), demands that companies become more adaptive, agile, and data-driven (Schwab, 2017). Meanwhile, the concept of Society 5.0, first introduced in Japan, offers a vision of a super-smart society where advanced technology is integrated with human needs to create inclusive social welfare (Keidanren, 2018).

These fundamental changes require transformations in core organizational functions, one of which is Human Resource Management (HRM). HRM is no longer merely administrative but is required to become a strategic partner supporting the organization's capability to adapt to rapid changes. The implementation of Electronics Human Resource Management (e-HRM) becomes a crucial solution. With e-HRM, activities such as recruitment, training, performance management, and industrial

relations can be conducted digitally, automatically, and in real-time (Bondarouk & Ruël, 2009).

However, despite its vast potential, e-HRM implementation faces challenges. On one hand, e-HRM supports efficiency and data accuracy; on the other hand, HR digital literacy, technological infrastructure readiness, and organizational culture are determining success factors. This forms the urgency of this conceptual study: how can e-HRM be optimized to support organizational transformation in the era of Industry 4.0 and Society 5.0?

Literature Review

Electronics Human Resource Management (e-HRM)

Bondarouk and Ruël (2009) define e-HRM as the application of web-based technology to deliver HRM policies and practices to employees. Strohmeier (2007) adds that e-HRM not only digitizes administrative processes but also supports strategic decision-making through an integrated Human Resource Information System (HRIS). Common e-HRM modules include:

- **E-Recruitment:** Online employee recruitment through career portals, social media, and AI for initial screening.
- **E-Selection:** Use of online tests and virtual interviews.
- **E-Training:** Digital learning (e-learning, microlearning) for competency development.
- **E-Performance Management:** Digital dashboard-based performance assessments and real-time feedback.
- **Self-service HR Portal:** Employee self-access to personal data, attendance, leave, and other administration.

Industry 4.0

Industry 4.0 is the fourth phase of the industrial revolution, characterized mainly by the integration of cyber-physical technology, IoT, cloud computing, and big data analytics. Human work is increasingly digitized, requiring HR to acquire new digital skills (up-skilling and re-skilling) to work alongside automation (Lasi et al., 2014).

Society 5.0

Unlike Industry 4.0, which focuses on production efficiency and technology integration, Society 5.0 emphasizes applying technology to solve social challenges and improve people's quality of life. In HRM, Society 5.0 drives the development of human-

centered HR policies prioritizing well-being, equity, and worker empowerment in the digital era (Keidanren, 2018).

Integration of e-HRM in the Context of Industry 4.0 and Society 5.0

Literature shows that e-HRM supports companies in:

- Significantly increasing the efficiency of HR work processes.
- Providing real-time data to support strategic decision-making based on analytics.
- Facilitating remote working culture and flexible work that supports work-life balance.
- Enhancing employee experience through self-service technology that simplifies information access.
- Addressing the digital skills gap by providing adaptive e-learning platforms.

2. RESEARCH METHOD

This article uses a conceptual literature review approach, where the authors identify trends and key findings from recent publications related to e-HRM, Industry 4.0, and Society 5.0. Literature sources were taken from reputable international journals, academic books, and global policy reports. This approach is expected to build a conceptual understanding framework for future empirical research.

3. RESULTS AND DISCUSSION

Based on the literature review, several important points can be concluded:

- The application of e-HRM allows HR functions to run more automatically, efficiently, and responsively.
- e-HRM supports the need for digital workforce competencies, such as re-skilling and up-skilling through e-learning platforms.
- e-HRM provides a large database to support HR decision-making based on analytics.
- In the context of Society 5.0, e-HRM should be designed not only for efficiency but also to support employee well-being, flexible work, and work-life balance.
- Challenges in implementing e-HRM include technology readiness, organizational cultural readiness, and employees' digital literacy.

Essentially, e-HRM automates previously manual and administrative HR processes. This aligns with the Industry 4.0 principle of comprehensive business process digitalization. e-HRM opens opportunities for HR to transform into a strategic

function, where data can support people analytics-based decision-making. This also supports creating a more adaptive, inclusive, and human-centered workplace in Society 5.0.

Moreover, e-HRM facilitates large-scale up-skilling and re-skilling through LMS, which is relevant for Industry 4.0 and Society 5.0 priorities. Work flexibility driven by e-HRM also provides significant value post-pandemic. Organizations offering such infrastructure will have a competitive advantage. However, challenges include employee resistance, data privacy, and infrastructure readiness. Strategies such as change management, literacy training, and ethical data handling are crucial. Collaborations with cloud-based solutions and HR tech providers may help overcome resource limitations. e-HRM can also integrate well-being features to enhance employee satisfaction, supporting Society 5.0's emphasis on human well-being.

Future success requires synergy between HR, IT, and top management, forming a comprehensive roadmap covering digital HR vision, culture, policies, literacy, tech investment, and continuous evaluation.

4. CONCLUSION

e-HRM has the potential to be the key to successful HR transformation in the era of Industry 4.0 and Society 5.0. Organizations that can strategically integrate digital technology into HR practices will be more adaptive to changes in the digital labor market. Practical implications include strategic planning, technology investment, and building a digital organizational culture. Future research is suggested to empirically test this framework across industries and countries.

5. REFERENCES

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