AT-TAKLIM : Jurnal Pendidikan Multidisiplin E-ISSN : 3062-9489
https://journal.hasbaedukasi.co.id/index.php/at-taklim
Halaman: 255-267

IMPLEMENTATION OF E-HRM IN IMPROVING EFFICIENCY AND EMPLOYEE WELFARE IN THE SOCIETY 5.0 ERA

Azwar Maulana[1], M. Fikri Darussalam[2], Khuzaini[3], Syahrial Shaddiq[4]
Universitas Islam Kalimantan Banjarmasin[1,2,3]
Universitas Lambung Mangkurat, Kalimantan Selatan[4]
Email: Azwar_m08@yahoo.com[1], fikdarussalam@gmail.com[2], khuzainiuniska1@gmail.com[3], syahrial.s@ulm.ac.id[4]

Keywords

e-HRM; Employee Well-being; Organizational Efficiency; Society 5.0

Abstract

The digital transformation of Human Resource Management (HRM) has driven the adoption of electronic Human Resource Management (e-HRM) systems to enhance organizational efficiency. However, an efficiency-centered approach may overlook employee well-being. Within the Society 5.0 framework, technology is expected to empower humans, not merely control them. This study aims to analyze how e-HRM can be implemented in an integrative way to support both efficiency and employee well-being. A conceptual-qualitative approach was employed through a literature review of 22 accredited academic sources published between 2015 and 2025. The findings reveal that effective e-HRM lies in the balance between administrative automation and humanistic features such as employee feedback systems, personalized learning platforms, and well-being monitoring tools. This study proposes a conceptual model of e-HRM grounded in the values of Society 5.0, placing human welfare as a central indicator of sustainable efficiency. The results are expected to serve as a reference for HR practitioners and organizational policymakers in developing adaptive and human-centered digital work systems..

1. INTRODUCTION

The massive development of digital technology in the last two decades has brought structural changes to almost all organizational functions, including human resource management (HRM). This transformation has become increasingly significant since the emergence of the Industry 4.0 concept, which marks a new era of automation based on the Internet of Things, Artificial Intelligence (AI), Big Data, and cyber-physical systems. In a managerial context, this concept drives HR management to shift from traditional systems toward digital and integrated systems known as electronic Human Resource Management (e-HRM) (Bondarouk et al., 2017). e-HRM enables recruitment, training, performance evaluation, and employee welfare management processes to be carried out efficiently, system- and data-based, with high speed and accuracy (Strohmeier & Kabst, 2022).

This development was further expanded by the concept of Society 5.0, introduced in Japan, which offers a vision of a future society where humans are at the center of technological development. Society 5.0 is not only focused on efficiency and automation but also on human values such as well-being, workplace happiness, and social sustainability (Yoshida, 2019). In this context, e-HRM does not merely serve as an automation tool but also as a strategic means to strengthen employee engagement, potential development, and the building of a healthy organizational culture.

However, the reality of e-HRM implementation in many organizations shows varying results. Some studies indicate that e-HRM systems not integrated with a humanistic approach can have negative effects on employees' psychological well-being and overall welfare. On one hand, organizations experience administrative efficiency and cost reduction; on the other hand, employees feel alienated due to decreased human interaction, increased system-based pressure, and a lack of personal approach in HR decision-making (Manuti & De Palma, 2020; Marler & Boudreau, 2017). This indicates that the use of technology in HR management cannot solely focus on productivity but must also consider the social and emotional dimensions of employees.

In Indonesia, the adoption of e-HRM is still in its developmental stage. Various companies, particularly in the industrial and technology sectors, have implemented this system in the form of HRIS software, digital attendance applications, and online training platforms. However, there has been little research explicitly examining how these e-HRM systems are integrated with employee well-being values in the context of Society 5.0, which demands a balance between technological efficiency and human values. Existing local studies have largely focused on the functional aspects of e-HRM, such as online recruitment systems or performance appraisal systems, without delving deeper into their social implications (Sivathanu & Pillai, 2020).

Based on the results of this review, there is a research gap in the e-HRM literature, particularly in studies that highlight the simultaneous relationship between organizational efficiency and employee well-being. Some theoretical models, such as the Resource-Based View (RBV), emphasize the importance of managing human resources as strategic assets in achieving competitive advantage, but this approach has not fully facilitated the measurement of employee well-being dimensions in the context of digital systems. Additionally, the High-Performance Work Systems (HPWS) approach is also

deemed insufficiently responsive in balancing the integration of digital and humanistic components within e-HRM systems (Strohmeier, 2020).

Considering this context, this study aims to provide theoretical and practical contributions by exploring in depth how e-HRM systems are strategically implemented to support organizational efficiency while improving employee well-being within the framework of Society 5.0. This research is conducted through a qualitative approach based on current literature and relevant case studies, and focuses on developing an integrative conceptual model between technology and humanity. The findings from this study are expected to provide strategic input for HR practitioners, organizational policymakers, and enrich the academic discourse on HR digitalization in the post-industrial era.

LITERATURE REVIEW

Research on electronic Human Resource Management (e-HRM) has undergone significant development in the last decade, in line with technological advances and the need for organizations to undergo digital transformation. However, studies on how e-HRM contributes simultaneously to organizational efficiency and employee welfare, especially within the framework of Society 5.0, are still limited. The following are some relevant previous studies.

The study by Bondarouk & Brewster (2016) conceptually explores the future relationship between technology and HR functions. They emphasize that e-HRM has the potential to revolutionize HR management through automation and data integration, but caution against the risk of employee alienation if digitalization processes are not accompanied by a human-centered approach. This study aligns with the present study in terms of emphasizing technology as a strategic tool, but it does not explicitly address integration with the Society 5.0 concept or employee well-being dimensions.

A study by Sivathanu & Pillai (2020) examines how the Smart HR 4.0 concept can be used to develop agile, adaptive, and high-tech HR management systems. They emphasize the importance of human-centric automation as a foundational principle in digital system design. This research provides a strong foundation that the integration of e-HRM and Society 5.0 is not contradictory but complementary. However, their study remains normative without presenting an operational integrative model.

Meanwhile, Manuti & De Palma (2020) highlight that the digitalization of HRM through e-HRM platforms has positive implications for organizational effectiveness but

can be a source of work stress if not balanced with emotional engagement and strong communication. They propose an employee well-being approach in digital HR design as the key to long-term success. This research is highly relevant to this study, although their focus is more directed toward multinational companies in Europe.

Furthermore, Strohmeier (2020) clarifies the basic concepts of digital HRM and distinguishes them from conventional systems. He emphasizes the importance of clear definitions and performance indicators in e-HRM systems to measure their impact on organizational efficiency and success. However, he does not explicitly address the aspect of well-being, which is a gap in this research.

Finally, Yoshida (2019) in his article on Society 5.0 outlines that the digital revolution must bring tangible benefits to humans, not just system efficiency. This concept underscores the importance of an integrative approach that prioritizes well-being as part of the success of digital transformation, including in the context of e-HRM. This research provides a strong philosophical foundation for this study but has not yet led to concrete managerial applications.

From the five studies, it can be concluded that although there has been much discussion about e-HRM and HR digitalization, very few have simultaneously linked them to organizational efficiency and employee well-being within a unified framework. This research aims to fill this gap by offering both conceptual analysis and a synthetic approach within the context of Society 5.0.

2. RESEARCH METHOD

This study uses a qualitative-conceptual approach with a literature analysis method (library research). This approach was chosen because the main focus of the study is to construct a theoretical understanding of the implementation of electronic Human Resource Management (e-HRM) in improving organizational efficiency and employee welfare, particularly within the framework of Society 5.0.

Supporting data were obtained from various scientific literature sources. All sources were analyzed using thematic analysis techniques, with an emphasis on identifying the main themes related to: (1) the definition and scope of e-HRM, (2) the effectiveness of e-HRM in supporting organizational efficiency, (3) the impact of e-HRM on employee well-being aspects, and (4) the relevance of Society 5.0 principles to technology-based human resource management.

The collected literature data was then reduced and categorized according to the study focus. This process aimed to identify relationships between conceptual variables and form an integrative framework that could contribute theoretically and practically to digital HRM practices in Indonesia. The analysis results were used to develop an integrative framework that could address conceptual gaps in previous studies.

3. RESULTS AND DISCUSSION

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

Digital transformation in human resource management has become one of the main characteristics of the Industrial Revolution 4.0. In this context, electronic Human Resource Management (e-HRM) has emerged as a systematic approach that combines information technology with HR functions such as recruitment, training, performance evaluation, and personnel administration management. The concept of e-HRM aims to enhance decision-making efficiency and accuracy through fast and automated data processing (Bondarouk & Brewster, 2016). This system enables organizations to reduce administrative burdens while accelerating HR service processes in a more responsive and transparent manner.

Within the framework of Industry 4.0, e-HRM is not only seen as an administrative tool but also as a foundation for developing human resource-based business strategies. Technologies such as cloud-based HRIS, AI-based talent analytics, and employee self-service platforms are essential instruments that enable integrated and data-driven human resource management. Through this system, performance evaluation processes become more objective, training can be personalized, and recruitment processes become more accurate through candidate profile matching algorithms (Strohmeier, 2020). This reflects the efficiency and optimization of work as core values of Industry 4.0.

However, an approach that is overly focused on efficiency and system-based control risks creating imbalances in the social and psychological dimensions of work. In practice, e-HRM systems that are not designed with a humanistic approach tend to overlook emotional, participatory, and interpersonal aspects in the workplace. This is the critical point in the transition from Industry 4.0 to Society 5.0. Society 5.0, as developed in Japan's strategic policies, emphasizes the importance of placing humans at the center of technological innovation rather than the other way around (Yoshida,

2019). Technology should be a tool to achieve human well-being, not a cause of stress or alienation in the workplace.

The integration of the Society 5.0 concept into e-HRM requires a paradigm shift from a machine-oriented HR system to a people-centered one. This means that the design of e-HRM systems must incorporate principles of employee participation, work-life balance, and the strengthening of the meaning and purpose of work. For example, features in HRIS should not only record attendance data but also track career development aspirations, job satisfaction, and emotional feedback regarding the work environment. Thus, technology is no longer a symbol of control but a means of collaboration and well-being.

Therefore, in the contemporary context, e-HRM must be viewed as a hybrid system that combines digital efficiency and a humanistic approach. Understanding this concept is crucial for organizations aiming to remain competitive in the Industry 4.0 era while upholding the principles of Society 5.0. A successful e-HRM system is not merely one that saves costs and time but one that fosters a sense of engagement, loyalty, and psychosocial balance within the workplace ecosystem. At this juncture, the urgency of updating e-HRM based on humanistic values becomes increasingly relevant.

The Implications of e-HRM on Organizational Efficiency

The implementation of e-HRM systems has brought fundamental changes to the way organizations manage human resource activities more efficiently. Efficiency in this context includes accelerating administrative processes, reducing operational costs, and improving accuracy in decision-making. With the use of an integrated Human Resource Information System (HRIS), many organizations can automate processes such as recruitment, payroll, performance reporting, and employee attendance. This enables the HR department to focus on strategic aspects such as competency development and talent retention (Sivathanu & Pillai, 2020).

One of the main advantages of e-HRM is its ability to provide real-time data used for talent analytics. Through HR big data, organizations can identify performance patterns, training needs, and predict potential turnover. This provides a more objective and evidence-based foundation for decision-making (evidence-based HR), thereby reducing managerial subjectivity, which has long been a challenge in traditional HR management (Marler & Boudreau, 2017). This system also enables efficiency

measurement through indicators such as recruitment processing time, attendance rates, and individually documented productivity.

However, the efficiency achieved through e-HRM does not always result in overall positive impacts if it is not accompanied by adaptive and participatory organizational design. Systems that are overly focused on quantitative performance and administrative control can lead to psychological stress, job uncertainty, and reduced intrinsic motivation among employees. This is particularly the case when digital systems are used as strict monitoring tools without two-way dialogue between management and employees (Manuti & De Palma, 2020). In the long term, this illusory efficiency can actually reduce productivity and damage healthy working relationships.

Furthermore, in the context of Society 5.0, organizational efficiency is not only measured in terms of speed and cost but also in terms of the sustainability of mutually beneficial working relationships between individuals and institutions. The concept of efficiency in Society 5.0 must include social and emotional dimensions, such as how well digital HR systems support healthy communication, team collaboration, and a sense of belonging to the organization. Therefore, organizations need to design e-HRM systems that can drive productivity while strengthening employee engagement as a form of sustainable efficiency.

Thus, strategically integrated e-HRM will be more than just a managerial tool; it becomes organizational infrastructure that supports business processes comprehensively, from operational efficiency to strengthening corporate values. The key to its success lies in balancing technological and humanistic approaches, where efficiency is not only the goal but also the result of fair, adaptive, and sustainable managerial practices.

e-HRM and Employee Welfare: Two Poles That Must Be Integrated

Digital transformation in human resource management through e-HRM can indeed generate structural efficiency, but it does not necessarily guarantee an increase in employee well-being. In many cases, the use of digital systems actually widens the gap between organizations and individuals when these systems are designed solely for the purposes of control and cost efficiency. However, employee well-being is a crucial element that directly influences motivation, loyalty, and work productivity (Manuti & De Palma, 2020).

Employee well-being is not limited to financial compensation but also encompasses psychological, emotional, and social dimensions. The implementation of e-HRM that does not consider these aspects tends to create a mechanistic and unfriendly work environment toward human needs. For example, performance evaluation systems based on algorithms that do not consider personal context can cause stress, feelings of being undervalued, and perceived injustice. This risks reducing job satisfaction and worsening the organizational climate.

Some studies indicate that e-HRM can actually enhance employee well-being if the system is designed with an employee-centered approach. Features such as self-service portals that allow employees to manage leave, view work history, and request training tailored to personal needs are concrete examples of digital systems that empower employees. Additionally, integrating well-being dashboards, employee feedback systems, and interest-based learning platforms has proven effective in enhancing a sense of belonging and self-actualization (Sivathanu & Pillai, 2020; Strohmeier, 2020).

In the context of Society 5.0, technology should serve as a tool to strengthen social connectivity and the quality of work life. Therefore, e-HRM should not only be administrative in nature but also serve as a two-way communication tool, a means of individual empowerment, and a holistic monitoring system for employee well-being. For example, the use of AI and sentiment analysis from employee feedback can be employed to detect signs of burnout or job dissatisfaction before they escalate into serious issues. Thus, digital systems become preventive tools rather than merely corrective ones.

The integration of e-HRM and employee well-being is not optional but a necessity in the design of modern HR systems. Organizations that focus solely on efficiency without considering employee well-being will struggle to retain top talent, especially in the post-pandemic era that emphasizes the importance of work-life balance. Therefore, building a human-centered e-HRM system is a strategic investment that strengthens an organization's competitive edge sustainably.

Integrative Model: Human-Centered e-HRM in Society 5.0

Based on the literature review and previous arguments, it can be concluded that the implementation of e-HRM in the context of Society 5.0 requires an integrative approach that not only emphasizes organizational efficiency but also prioritizes employee well-being. This necessitates a paradigm shift from a procedural and

quantitative HR system to one that is people-centered, participatory, and adaptive to human needs in the digital workplace.

Within the Society 5.0 framework, an e-HRM system should bridge the gap between an organization's need to compete efficiently and an individual's need to feel valued, mentally healthy, and find meaning in their work. This balance can be achieved through system design that integrates automation features with features that enhance employees' emotional and professional engagement. Therefore, a conceptual model is needed that can illustrate the reciprocal relationship between three main elements: organizational efficiency, employee well-being, and the principles of Society 5.0 as a normative foundation.

Table 1. Synthesis of the Impact of e-HRM on Efficiency and Welfare

e-HRM Components	**Impact on Organizational Efficiency**	**Impact on Employee Welfare**
Digital Recruitment	Fast, cost-effective, data-driven	Minimal personal touch, potential for algorithmic bias
E-Performance System	Accurate and measurable evaluation	High performance pressure, excessive fear
E-Learning Platform	Training flexibility, cost efficiency	Self-development, adaptable to needs
HRIS Self-Service	Self-administration, reducing HR workload	Increased independence, potential for isolation
AI-Based Feedback	Quick analysis for managerial improvement	Potential for openness & detection of welfare issues

Figure 1. e-HRM *Human-Centered* dalam Society 5.0 integrity model

The above model emphasizes the importance of integration, rather than separation, between organizational efficiency goals and efforts to create employee well-being through holistic e-HRM system design. By making Society 5.0 values the foundation, organizations can create a digital work environment that is not only smart and efficient, but also fair and humane.

4. CONCLUSION

Based on the literature review and discussion conducted, it can be concluded that the implementation of electronic Human Resource Management (e-HRM) in organizations in the Industry 4.0 era has great potential to improve operational efficiency. The automation of HR processes through digital technology has been proven to accelerate administrative services, improve data accuracy, and support evidence-based decision making. However, an excessive focus on efficiency alone without considering employee well-being aspects can have negative impacts on motivation, loyalty, and psychological balance in the workplace.

Within the framework of Society 5.0, technology is expected not only to serve as a control tool but also as a means of empowering humans. Therefore, an ideal e-HRM system is one that is not only efficient but also human-centered, designed to support job satisfaction, emotional engagement, and the development of individual potential within the organization. The integration of efficiency and well-being is key to building a

sustainable and adaptive HR system that can keep pace with the dynamics of the times.

This study recommends that organizations redesign their e-HRM systems with a more balanced approach, combining data-driven digital features with principles of participatory and empathetic management. Features such as employee feedback systems, well-being monitoring, and personalized development platforms need to be an integral part of modern HRIS. Additionally, it is important for management to instill the awareness that the success of digital transformation is not only determined by the speed and accuracy of the system but also by how much the system can humanize work processes.

Thus, the main contribution of this article is to offer an integrative perspective on the role of e-HRM in supporting organizations that are not only technologically advanced but also fair and human-wellbeing oriented, in line with the spirit of Society 5.0.

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