

## TRANSFORMATION OF EMPLOYEE PERFORMANCE EVALUATION BASED ON ELECTRONIC HUMAN RESOURCE MANAGEMENT (E-HRM) TO INCREASE THE EFFECTIVENESS OF HUMAN RESOURCE MANAGEMENT IN THE INDUSTRY 5.0 ERA

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Informasi	Abstract
Volume : 3 Nomor : 7 Bulan : Juli Tahun : 2026 E-ISSN : 3062-9624	<p><i>This study aims to analyze the transformation of employee performance evaluation based on Electronic Human Resource Management (e-HRM) in improving the effectiveness of human resource management in the Industry 5.0 era. This study employed a qualitative approach with a case study design through in-depth interviews, observations, and document analysis related to the implementation of e-HRM in employee performance evaluation. The findings reveal that digitalization through e-HRM enhances the accuracy and transparency of performance assessment, accelerates evaluation processes, facilitates real-time monitoring, and supports data-driven decision-making. Furthermore, e-HRM contributes to employee development, organizational agility, and sustainable human resource management practices aligned with Industry 5.0 principles. However, several challenges remain, including digital literacy disparities, organizational resistance, system integration issues, and technological infrastructure limitations. The study concludes that e-HRM-based performance evaluation transformation is a strategic approach for strengthening human resource management effectiveness and enhancing organizational competitiveness in the Industry 5.0 era.</i></p> <p><b>Keyword:</b> <i>e-HRM, employee performance evaluation, human resource management, digital transformation, Industry 5.0.</i></p>

### A. INTRODUCTION

The rapid advancement of digital technology has transformed organizational management practices and accelerated the evolution from Industry 4.0 to Industry 5.0. Unlike Industry 4.0, which emphasizes automation and cyber-physical systems, Industry 5.0 focuses on human-centricity, sustainability, and resilience by integrating intelligent technologies with human creativity and capabilities (Breque et al., 2021). This paradigm shift requires organizations to redesign their human resource management (HRM) practices to support collaboration between humans and advanced technologies while maintaining employee well-being and organizational competitiveness.

Human resource management has become a strategic function that enables organizations to adapt to digital transformation. Industry 5.0 emphasizes that employees are not merely resources but strategic assets capable of generating innovation and sustainable competitive advantage (Veeramani & Arunkumar, 2026). Consequently, organizations are required to develop flexible and data-driven HR systems that can support employee development, productivity, and organizational resilience.

One of the essential functions of HRM is employee performance evaluation. Performance evaluation provides information for compensation, promotion, training, and career development decisions. However, traditional performance appraisal systems are often characterized by subjectivity, lack of transparency, delayed feedback, and administrative inefficiencies (Marler & Parry, 2016). Such limitations reduce the effectiveness of HR practices and hinder organizations from responding quickly to environmental changes.

Electronic Human Resource Management (e-HRM) has emerged as a strategic solution to address these challenges. e-HRM refers to the application of information and communication technologies to support human resource management activities, including recruitment, training, compensation, and performance management (Bondarouk & Brewster, 2016). Through digital platforms, organizations can automate administrative processes, monitor employee performance continuously, and facilitate evidence-based decision-making.

Previous studies have demonstrated that e-HRM contributes significantly to organizational efficiency and employee performance. Faridah et al. (2023) found that e-HRM implementation positively affects employee commitment, job satisfaction, and performance in the context of Industry 4.0 and Society 5.0. Similarly, Bondarouk et al. (2022) argued that digital HR transformation strengthens strategic HR functions and enhances organizational agility. Furthermore, Sánchez et al. (2023) revealed that digital technologies and HR practices complement each other in improving organizational performance and competitiveness.

Industry 5.0 introduces a human-centered perspective that shifts performance evaluation from merely measuring productivity toward continuous development, collaboration, and employee well-being. According to Xu et al. (2021), human-machine collaboration is the central characteristic of Industry 5.0, requiring organizations to establish adaptive performance management systems. In addition, Hunková and Haviernikova (2024) emphasized that strategic human resource management in Industry 5.0 should focus on sustainability, resilience, and workforce flexibility.

## **B. RESEARCH METHOD**

This study employed a qualitative approach using a case study design to obtain an in-depth understanding of the transformation of employee performance evaluation based on Electronic Human Resource Management (e-HRM) in improving the effectiveness of human resource management in the Industry 5.0 era. A qualitative approach was selected because it enables researchers to explore social phenomena comprehensively and understand organizational experiences regarding digital transformation in HR practices (Creswell & Creswell, 2018). The case study method was considered appropriate because it allows the investigation of actual practices and interactions among organizational members involved in the implementation of e-HRM (Yin, 2018).

The study utilized both primary and secondary data. Primary data were obtained through semi-structured interviews with human resource managers, supervisors, and employees who were directly involved in performance evaluation processes using e-HRM systems. Meanwhile, secondary data were collected from organizational documents, performance reports, policy manuals, and previous literature related to digital human resource management and Industry 5.0 (Saunders et al., 2019). Data collection techniques consisted of in-depth interviews, direct observations, and document analysis to ensure the validity and reliability of findings.

The collected data were analyzed using the interactive model developed by Miles et al. (2014), which consists of data reduction, data display, and conclusion drawing. During the reduction stage, important information regarding e-HRM implementation and performance evaluation practices was categorized and coded. Subsequently, data were organized and interpreted systematically to identify patterns and relationships among themes. Finally, conclusions were drawn continuously throughout the research process to ensure consistency and credibility. This study was conducted over a three-month period and focused on organizations that have implemented digital performance management systems in line with Industry 5.0 principles.

## **C. RESULTS AND DISCUSSION**

### **Implementation of e-HRM in Employee Performance Evaluation**

The findings indicate that the implementation of Electronic Human Resource Management has significantly transformed conventional performance evaluation systems into digital and integrated mechanisms. The use of e-HRM platforms enables organizations to

conduct performance assessments more systematically, transparently, and efficiently. Human resource managers stated that digital systems facilitate the management of the entire performance appraisal cycle, ranging from target setting, progress monitoring, and feedback provision to final evaluation.

Observation results revealed that performance data such as attendance records, task completion rates, key performance indicators, and employee achievements are automatically recorded through the system. Consequently, manual administrative procedures have been substantially reduced, minimizing human errors and increasing the accuracy of performance information. Employees also have access to digital dashboards that provide real-time information regarding their work progress and performance achievements.

The implementation of self-assessment and supervisor-assessment features allows employees and supervisors to participate actively in the evaluation process. Employees can review their achievements and identify areas for improvement, while supervisors are able to provide immediate feedback based on actual performance records. Such mechanisms support continuous performance management, which is considered essential in the Industry 5.0 environment where employee development and adaptability are highly emphasized (Pulakos et al., 2019).

Furthermore, accessibility through mobile devices and web-based applications increases employee engagement and participation. Employees can submit reports, review their performance records, and receive feedback anytime and anywhere. This flexibility supports collaborative and human-centered HR practices that characterize Industry 5.0.

### **Impact of e-HRM-Based Performance Evaluation on Human Resource Management Effectiveness**

#### **a. Improving Accuracy and Objectivity**

One of the most significant findings is the improvement in the accuracy and objectivity of performance evaluations. Digital systems automatically collect and process employee performance data, reducing subjectivity and bias associated with manual assessments. Supervisors rely on factual information rather than personal perceptions when evaluating employees. These findings support the argument of Marler and Parry (2016), who emphasized that digital HR technologies enhance evidence-based decision-making.

Employees also perceive digital performance evaluation as fairer and more transparent because every activity and achievement is recorded systematically. Consequently, trust between employees and management increases, creating a positive organizational climate.

b. Enhancing Transparency

The implementation of e-HRM strengthens transparency in performance management. Employees are able to access performance indicators, assessment criteria, and feedback from supervisors directly through digital platforms. This transparency helps employees understand organizational expectations and encourages them to improve their competencies continuously.

Managers also benefit from integrated performance information, which facilitates communication and performance discussions. The availability of complete performance histories simplifies the provision of constructive feedback and reduces misunderstandings between supervisors and employees. According to Robbins and Judge (2019), transparent communication contributes to higher employee commitment and job satisfaction.

c. Increasing Efficiency and Decision-Making Speed

Digitalization through e-HRM significantly reduces administrative burdens and shortens performance evaluation cycles. Human resource departments no longer need to collect paper documents or manually process data. As a result, performance reports can be generated quickly, enabling management to make timely decisions regarding promotions, rewards, and employee development.

Managers stated that real-time information allows them to respond more effectively to organizational changes. The ability to access updated performance data contributes to organizational agility, which is one of the core characteristics of Industry 5.0 (Breque et al., 2021).

d. Supporting Continuous Performance Monitoring

Another important finding is the capability of e-HRM systems to support continuous performance monitoring. Digital dashboards provide real-time information regarding work progress and achievement levels. Managers can identify performance problems early and provide corrective actions immediately.

Continuous monitoring encourages regular communication between supervisors and employees, facilitating coaching and mentoring activities. Employees become more aware of their responsibilities and organizational goals. Such a mechanism is consistent with the concept of continuous performance management proposed by Pulakos et al. (2019), which emphasizes ongoing feedback rather than annual evaluations.

## **CHALLENGES OF E-HRM IMPLEMENTATION**

Despite its benefits, the implementation of e-HRM still faces several challenges.

a. Digital Literacy Differences

Variations in employees' digital competencies constitute one of the primary barriers to effective e-HRM implementation. Senior employees and those unfamiliar with digital technologies often experience difficulties in using digital platforms. Such differences increase the possibility of data input errors and require additional training programs.

b. Resistance to Organizational Change

The transition from manual systems to digital platforms is not always accepted positively. Some employees are reluctant to change because they are accustomed to traditional procedures. Others perceive digital monitoring systems as increasing work pressure and reducing flexibility. According to Lewin (1947), resistance is a natural response to organizational change and should be managed through communication and employee involvement.

c. System Integration Limitations

Another challenge concerns the lack of integration among organizational information systems. Some performance-related documents still need to be processed manually or transferred between different platforms. This situation creates inefficiencies and duplicates administrative activities, limiting the full potential of digital transformation.

d. Technological Infrastructure Constraints

Several organizations still face technological limitations, including insufficient hardware, unstable internet connections, and inadequate digital facilities. These factors negatively affect system accessibility and user experiences, particularly during peak periods of performance evaluation.

## **DISCUSSION**

The findings demonstrate that e-HRM is no longer merely an administrative tool but has become a strategic instrument in the Industry 5.0 era. The integration of digital technologies with human-centered management principles enables organizations to establish more adaptive, transparent, and sustainable HR practices.

Industry 5.0 emphasizes collaboration between humans and intelligent technologies rather than replacing human capabilities. Therefore, e-HRM should not only focus on efficiency but also support employee development, well-being, and continuous learning. Human resource managers are required to adopt strategic approaches that combine technological innovation with employee empowerment.

Moreover, the implementation of e-HRM contributes to organizational agility and competitiveness. Real-time performance information allows managers to make data-driven decisions and respond rapidly to dynamic business environments. These capabilities are essential for organizations operating in highly competitive and technology-driven industries.

However, successful implementation requires organizational readiness, digital competencies, and supportive cultures. Technology alone cannot guarantee effectiveness. Continuous training, leadership commitment, and change management strategies are essential to ensure that digital transformation creates long-term benefits for both employees and organizations.

#### **D. CONCLUSION**

Based on the findings of this study, it can be concluded that the transformation of employee performance evaluation through Electronic Human Resource Management (e-HRM) significantly enhances the effectiveness of human resource management in the Industry 5.0 era. The implementation of e-HRM improves the accuracy, objectivity, transparency, and efficiency of performance evaluations while enabling continuous monitoring and evidence-based decision-making. Furthermore, e-HRM supports human-centered management practices that emphasize employee development, collaboration, and organizational agility.

Nevertheless, several challenges remain, including differences in digital literacy, resistance to organizational change, limitations in system integration, and inadequate technological infrastructure. Therefore, organizations should strengthen digital capabilities, improve technological readiness, and develop effective change management strategies to maximize the benefits of e-HRM.

Overall, e-HRM-based performance evaluation should be viewed not only as a digital administrative system but also as a strategic instrument for promoting sustainable human resource management and enhancing organizational competitiveness in the Industry 5.0 era.

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