

## **E-HRM: The Key to Modern Employee Performance with Productivity as the Mediator**

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### ***ABSTRACT***

*This study aims to analyze the impact of electronic human resource management (e-HRM) on employee performance, both directly and indirectly through the mediating role of work productivity. Using a quantitative approach and saturated sampling method, the data were analyzed using Structural Equation Modeling (SEM). The results show that e-HRM does not have a significant direct effect on employee performance, but it does have a significant effect on work productivity. In addition, work productivity significantly affects employee performance and effectively mediates the relationship between e-HRM and performance. These results indicate that the implementation of e-HRM does not automatically improve performance, but operates indirectly by encouraging increased work productivity. Theoretically, this study expands the understanding of the role of e-HRM by emphasizing the importance of productivity as a key mechanism for explaining the relationship between e-HRM systems and employee performance.*

**Keywords:** *Electronic Human Resource Management, Employee Performance, Work Productivity*

### **Introduction**

The development of digital technology has encouraged logistics service companies to improve operational efficiency through the implementation of internet-based systems, including in human resource management. At PT Sicepat Ekspres Parung Serab Ciledug, fierce service competition and the need for high operational quality demand improved employee performance. However, Key Performance Indicator (KPI) data for the 2022–2024 period shows that performance achievements are still below target, particularly in terms of delivery time, service quality, and compliance with standard operating procedures (SOP). These findings indicate the need for optimization of the human resource management system, particularly through the implementation of Electronic Human Resource Management (e-HRM), which according to Strohmeier (2020) is an evolution of web-based hrm, namely the digital transformation of HR functions and processes, which utilizes information technology to improve efficiency and create value for stakeholders.

E-HRM is believed to improve the efficiency of human resource services by automating processes such as attendance, training, performance appraisal, and payroll. Several empirical studies show that the implementation of e-HRM has a positive impact on employee performance perceptions (El-Saeed et al., 2025), although its influence is often moderated by work productivity factors. Conversely, employee productivity at

Sicepat Ciledug has shown a downward trend over the past three years. In fact, work productivity is measured as the output in the form of goods or services against inputs in the form of employees, capital, materials, or raw materials and equipment (Cascio, 2020). This condition indicates a research gap regarding the effectiveness of e-HRM implementation on employee performance, given the role of productivity as a mediating variable.

Based on this context, this study poses the following questions: (1) Does HRM-el affect employee performance? (2) Does HRM affect work productivity? (3) Does work productivity affect employee performance? and (4) Does HRM-el affect employee performance through the mediation of work productivity? These questions are relevant to initiating how the integration of technology in human resource functions can drive organizational performance improvement, particularly in the logistics service sector, which operates under the pressure of providing fast and accurate services.

The objectives of this study include analyzing the influence of eHRM on employee performance, testing the impact of eHRM on work productivity, measuring the contribution of productivity to employee performance, and evaluating the mediating role of productivity in the relationship between eHRM and performance. The results of this study are expected to contribute theoretically by enriching the literature on the relationship between e-HRM, productivity, and employee performance in the digital era. Practically, this study can serve as a basis for evaluation for PT Sicepat Ekspres in improving technology-based human resource policies and strategic planning to optimize employee productivity and performance.

### **Theoretical Framework And Hypothesis**

This study refers to a number of previous studies that indicate that the implementation of electronic human resource management (e-HRM) contributes significantly to increased productivity and organizational performance. Widjaja and Wijayadne (2025) identified that e-HRM has a substantial impact on employee productivity, especially when supported by the optimization of technological assets. Parallel findings were obtained by Nurshabrina and Adrianti (2025), who showed that e-HRM practices such as e-recruitment, e-compensation, and e-performance appraisal play a crucial role in increasing efficiency and productivity. Furthermore, Farhan et al. (2025) reinforce this argument by emphasizing that e-HRM has a positive influence on productivity, especially when considering the moderation of the organizational climate. These findings collectively form an empirical basis that confirms that digital transformation in human resource (HR) functions has a concrete impact on individual and organizational performance.

Theoretically, this study relies on primary sources relevant to the main construct. The concept of e-HRM refers to the application of digital systems in carrying out human resource (HR) functions, such as recruitment, training, and performance appraisal, as defined by Vardarlier (2020) as the use of computer systems and telecommunications networks for HR activities. Work productivity is adopted from the framework of Ichikawa

et al. (2024), which highlights the aspects of work, economic satisfaction, and work relationships as components that shape productivity. Employee performance is measured using indicators developed by Pradhan et al. (2017), which include task, adaptive, and contextual performance dimensions. In summary, “e-HRM creates systemic efficiencies that impact work ability and satisfaction, thereby potentially increasing productivity and performance”.

Through the integration of theory and empirical findings, this study formulates four main hypotheses: (1) e-HRM has a positive effect on employee performance; (2) e-HRM has a positive effect on work productivity; (3) work productivity has a positive effect on employee performance; and (4) productivity mediates the effect of e-HRM on performance. These hypotheses are designed to evaluate whether the digitization of HR processes not only has a direct impact on performance but also operates through increased productivity as the main mechanism in the context of the operational work environment, such as at PT Sicepat Ekspres Parung Serab Ciledug.

## Research Methods

### Samples and Sampling Techniques

This study adopts a quantitative methodology to assess the effect of Electronic Human Resource Management (e-HRM) on employee performance, incorporating work productivity as a mediating variable. This research was conducted at PT Sicepat Ekspres Indonesia in Parung Serab, Ciledug. The research population consisted of 105 employees, with all members acting as respondents through a saturated sampling technique. This approach was chosen because of the relatively small population size and the ease of reaching each element, thus enabling comprehensive data collection and minimizing potential sampling bias.

Data collection involved a structured questionnaire designed with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The research tools included indicators for e-HRM, work productivity, and employee performance variables, which were adapted from previous studies to ensure content validity. In addition to the questionnaire, researchers conducted field observations to gain insight into operational processes and the implementation of e-HRM systems, as well as documentation studies to obtain secondary data such as performance reports and company productivity metrics.

Data analysis was performed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software version 4.1. Measurement model evaluation included assessing convergent validity through outer loading values and Average Variance Extracted (AVE), as well as discriminant validity through the Heterotrait–Monotrait (HTMT) ratio. Construct reliability was tested using Cronbach's Alpha and Composite Reliability. In addition, structural model evaluation included testing direct effects, analyzing indirect effects (mediation), and assessing predictive ability to test research hypotheses regarding the relationship between e-HRM, work productivity, and employee performance.

## Results And Discussion

The results of this study indicate that Electronic Human Resource Management (e-HRM) has no direct impact on employee performance, but significantly increases work productivity, thereby driving further performance improvements. This indirect relationship highlights that e-HRM functions as an intermediary factor rather than an instant catalyst, challenging the assumption that digital HR platforms inherently produce superior performance metrics.

Theoretically, these results are consistent with the Technology-Performance Chain Model, which states that technological interventions only affect performance when they improve task execution and strengthen individual competencies. Echoing the opinion of Ruel et al. (2004), this evidence reinforces that e-HRM largely facilitates performance through simplified administrative processes and operational efficiency, rather than triggering direct changes in behavior or motivation. As a result, productivity emerges as an important mediating mechanism linking e-HRM to performance achievement.

In addition, the tangible impact of work productivity on employee performance highlights the importance of non-technical elements, including time efficiency, workplace flexibility, and work-life balance, especially in demanding sectors such as logistics. These findings expand Hasibuan's (2019) productivity paradigm by illustrating that productivity-oriented performance can be maintained amid intense work demands by relying on digital tools that reduce procedural complexity. The results show that productivity serves as an intrinsic compensation mechanism, empowering employees to maintain performance standards despite physical and operational obstacles.

Researchers attribute the absence of a direct effect of e-HRM on performance to deficiencies in system usability and user readiness. In line with Nawangsari and Sutawidjaya (2021), these findings indicate that a technological framework requires adequate organizational readiness and user expertise to generate direct performance benefits. This study enriches the discussion on e-HRM by empirically proving that usability barriers shift the role of e-HRM from a performance catalyst to a productivity facilitator.

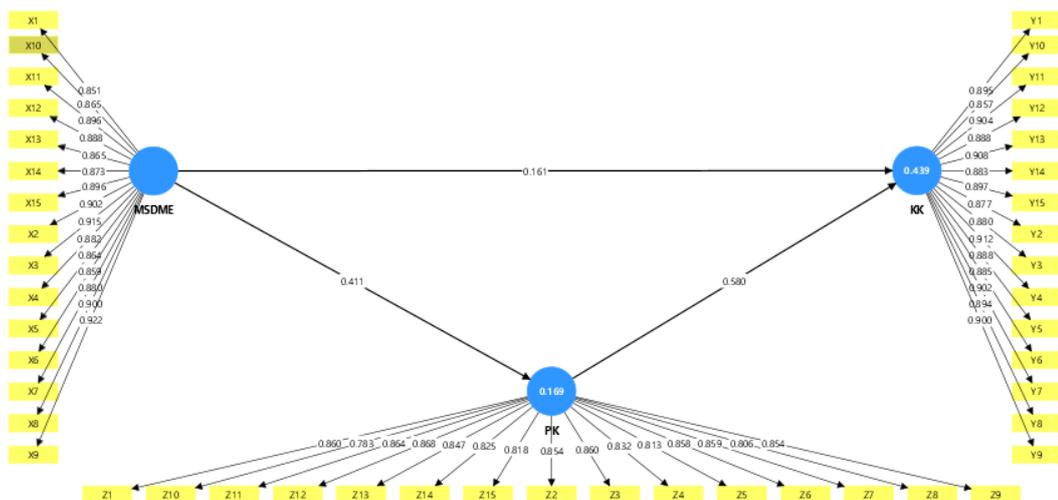
Most importantly, mediation analysis proves that work productivity significantly mediates the relationship between e-HRM and employee performance. This finding provides significant theoretical progress by establishing productivity as the main channel through which digital HR systems create value. Rather than viewing e-HRM as an isolated performance tool, this study explains that its effectiveness depends on its ability to optimize productive workflows. Therefore, the implication is that future e-HRM implementations should emphasize system usability, user skill enhancement, and seamless process integration to ensure sustainable performance improvement.

**Table 1.**  
**Significance Test**

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
MSDME -> KK	0.161	0.158	0.091	1.775	0.076
MSDME -> PK	0.411	0.418	0.089	4.604	0.000
PK -> KK	0.580	0.585	0.066	8.823	0.000

**Table 2.**  
**Mediation test**

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
MSDME -> PK -> KK	0.238	0.246	0.065	3.668	0.000



**Figure 1**  
**Structural Model**

**Conclusion, Implications, Suggestions, And Limitations**

This study concludes that the implementation of an Electronic Human Resource Management System (e-HRM) does not directly improve employee performance, but it significantly increases work productivity, which in turn drives further performance improvement. Work productivity emerges as an important mediating factor linking e-HRM to employee performance, indicating that digital HR platforms only drive performance improvement when they skillfully enhance operational efficiency and

effectiveness. As a result, the research objectives and problem statements have been comprehensively addressed.

Theoretically, this study enriches the field of e-HRM by providing empirical evidence that challenges assumptions about the linear relationship between technology and performance. The results of this study expand the mediation framework that can be applied in e-HRM studies, showing that productivity plays an important interpretive channel through which digital HR systems generate performance benefits. This research reinforces the perspective that human resource technology shapes performance indirectly through the reconfiguration of workflows, rather than through direct modification of performance metrics.

Empirically, this study contributes by presenting insights gained from the logistics sector in emerging markets, particularly in last-mile delivery operations characterized by high workload demands and time constraints. The evidence suggests that the implementation of digital HR in this context generally maintains performance through increased productivity, rather than through instant performance improvements.

In practical terms, the results of this study emphasize that entities must prioritize improving system usability, digital process integration, and employee competency development to optimize productivity before expecting tangible performance improvements.

However, this study has several limitations. It focuses on a single independent variable (e-HRM), limits its scope to one operational division of PT Sicepat Ekspres Indonesia, and uses a relatively small sample. Therefore, its conclusions may not fully cover various organizational scenarios. Future research should integrate additional variables such as leadership dynamics, workload factors, and motivational elements and use a multi-location methodology with a larger sample size to strengthen the generalization of results and enrich the understanding of the interaction between HR digitization, productivity, and performance in the field of logistics.

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