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Research Article

Adoption of Human Resource Information Systems

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Abstract.

This research investigated the critical factors influencing the successful adoption of E-HRM systems. Leveraging an updated DeLone and McLean IS Success Model, the impact of system quality, information quality, and service quality on system usage and user satisfaction were explored, ultimately linking these factors to E-HRM adoption success. A quantitative approach was employed, with data collected through a meticulously designed survey distributed to employees. Structural equation modeling (SEM) facilitated a rigorous analysis of the relationships between variables, while descriptive statistics painted a clear picture of the data landscape. SmartPLS 4.0 served as a robust tool for data analysis. The findings revealed a compelling narrative. Six of the nine hypotheses achieved significance, highlighting the direct and indirect influences of system quality, information quality, and service quality on system usage and user satisfaction. Notably, system usage emerged as a vital mediating variable, bridging the gap between system attributes and successful adoption. This underscores the pivotal role of encouraging user engagement and positive system experiences. Furthermore, the analysis unveiled a fascinating interconnectedness among all six variables. Each element, like a meticulously interwoven thread, contributes to the tapestry of successful E-HRM adoption. This interplay emphasizes the importance of a holistic approach, where no single factor reigns supreme but rather a harmonious synergy propels the system toward success. In conclusion, this study offers valuable insights for optimizing E-HRM implementation. High-quality systems with accurate and user-centric information, coupled with exceptional service, pave the way for a thriving E-HRM environment. By fostering user engagement and nurturing a holistic approach that recognizes the interconnectedness of key factors, organizations can unlock the true potential of their E-HRM systems, transforming them into catalysts for success.

Keywords: E-HRM, system quality, system use, user and system satisfaction

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1. Introduction

The growing application of information technology within human resource management, known as electronic-HRM (e-HRM), signifies its potential to enhance organizational efficacy and achieve desirable outcomes.[1, 2]. Although quantitative research into the adoption of e-HRM practices has proliferated, a comprehensive understanding of the qualitative dimensions of these practices, the factors that drive their implementation, and their diverse organizational consequences remains shrouded in obscurity. This

necessitates further investigation into the nuanced tapestry of e-HRM applications, their underlying motivations, and their impact on various facets of organizational functioning [3-6]. This perspective underscores the critical need for deeper qualitative inquiry to illuminate the diverse landscape of e-HRM manifestations, the intricate web of factors driving their adoption, and the multifaceted impact they unleash upon organizational contexts. Only through such nuanced exploration can we truly grasp the richness of e-HRM's potential and navigate its complexities to unlock its transformative power [4, 7, 8]. Adopting a configurationally lens proves advantageous in this endeavor, recognizing e-HRM as a dynamic interplay of multiple dimensions, offering a more nuanced and comprehensive representation of its essence. [9]. Building upon the limited body of existing research, this inquiry embarks on a systematic exploration of the multifaceted possibilities for leveraging IT in HRM, examining how these align with a spectrum of organizational goals. [4, 10].

Advances in information systems have fueled academic fascination with successful deployment. Effective IS adoption in firms demonstrably elevates employee performance [11]. Recognizing the dynamic nature of the information systems landscape, the Delone & McLean Success Model has been meticulously refined through subsequent research endeavors. Notably, the inclusion of crucial variables like service quality has enhanced its comprehensiveness. Moreover, the model's innovative "net benefit" dimension seamlessly integrates individual and organizational effects, providing a unified lens for evaluating information systems success. This revised framework has demonstrably earned its prominent position as a cornerstone of information systems research, with its elegance and explanatory power attracting widespread adoption by numerous scholars. [12]

Moving beyond the cumbersome limitations of manual processes and resource-heavy traditional HR models, e-HRM emerges as a transformative force. Its advantages, well-documented and far-reaching, include streamlined efficiency and cost savings within HRM operations, a strategic elevation of the HR function, and improved client service delivery. E-HRM solutions empower organizations to automate and digitize a wide range of administrative tasks, encompassing recruitment, selection, performance management, training, leave and attendance management, business travel management, and payroll.

In conclusion, early adoption dominates the literature on IT systems like E-HRM, but few studies explore post-adoption intentions and behaviors, calling for further research. [13]. According to earlier research [13], The motivations driving technology adoption are not static, but rather evolve and potentially transform across the distinct stages of initial acceptance, active usage, and subsequent appraisal.

The dynamic interplay between personal perceptions and user encounters with technology across adoption, use, and post-implementation phases shapes utilization patterns. This necessitates deeper exploration of technology utilization behavior especially in contexts like E-HRM, where potential user apprehension warrants specific attention. Consequently, this study delves into the critical factors influencing E-HRM adoption, seeking to optimize system integration and ensure long-term user acceptance.

There were several research issues identified: Does system utilization (Y1) significantly depend on system quality (X1)? Does system quality (X1) have a major impact on user satisfaction with E-HRM (Y2)? Does the quality of the information (X2) have a big impact on how the system is used (Y1)? How much of an impact does information quality (X2) have on E-HRM user satisfaction (Y2) service quality (X3) have a major impact on customer satisfaction with E-HRM (Y2)? Does system utilization (Y1) have a big impact on how happy users are with the E-HRM (Y2)? Does system use (Y1) have a major impact on the effectiveness of the E-HRM system (Y3)? Does E-HRM system success (Y3) significantly depend on E-HRM user happiness (Y2)?.

2. Material and Methods

Employees of the Indonesian company ESQ Group in Jakarta participated in the survey. System quality (X1), information quality (X2), service quality (X3), system utilization (Y1), satisfaction (Y2), and E-HRM system success are the six indicators used in this sort of quantitative study (Y3). The population and sample are determined using the Hair formula [14], and the score is calculated using the Likert scale:

$$Minimum\ sample\ size\ =\ Number\ of\ indicators\ x\ 5$$

Researchers calculated a minimum sample size of 130 (26 indicators x 5) and actively analysed data using SmartPLS 4.0, employing inferential statistics and meticulously following a six-step SEM process. (SEM), which will be assessed descriptively.)

3. Results and Discussion

3.1. Results

Researchers embark on a three-stage SEM analysis: (1) actively testing the outer model to examine indicator-latent construct relationships (the outer model or measurement

model), (2) rigorously probing the structural model to uncover latent construct interactions (the structural model), and (3) comprehensively evaluating model fit. Figure 1 showcases the results of construct validity and reliability tests, pivotal elements of outer model analysis. (measurement model).

Figure 1 unveils the outcomes of construct validity and reliability assessments. Adhering to established methodological principles, questions or indicators possessing loading factor values below the 0.7 threshold are systematically excluded from the model to ensure validity [14]. As evident in Figure 1, the initial model iteration reveals two loading factors falling short of this criterion: λX1.1 (0.218) and λY1.3 (0.630). These are subsequently removed iteratively, culminating in a refined outer model encompassing exclusively indicators with loading factors exceeding 0.7 after running three times.

Researchers actively probe the interplay between latent constructs through structural model analysis within SEM, mirroring path analysis techniques. This crucial stage puts research hypotheses to the test, revealing the veracity of theoretical predictions. Bootstrapping, implemented within SmartPLS software, takes center stage in this study, and Figure 2 showcases its outcomes. The subsequent sections meticulously dissect the key findings of this finding analysis.

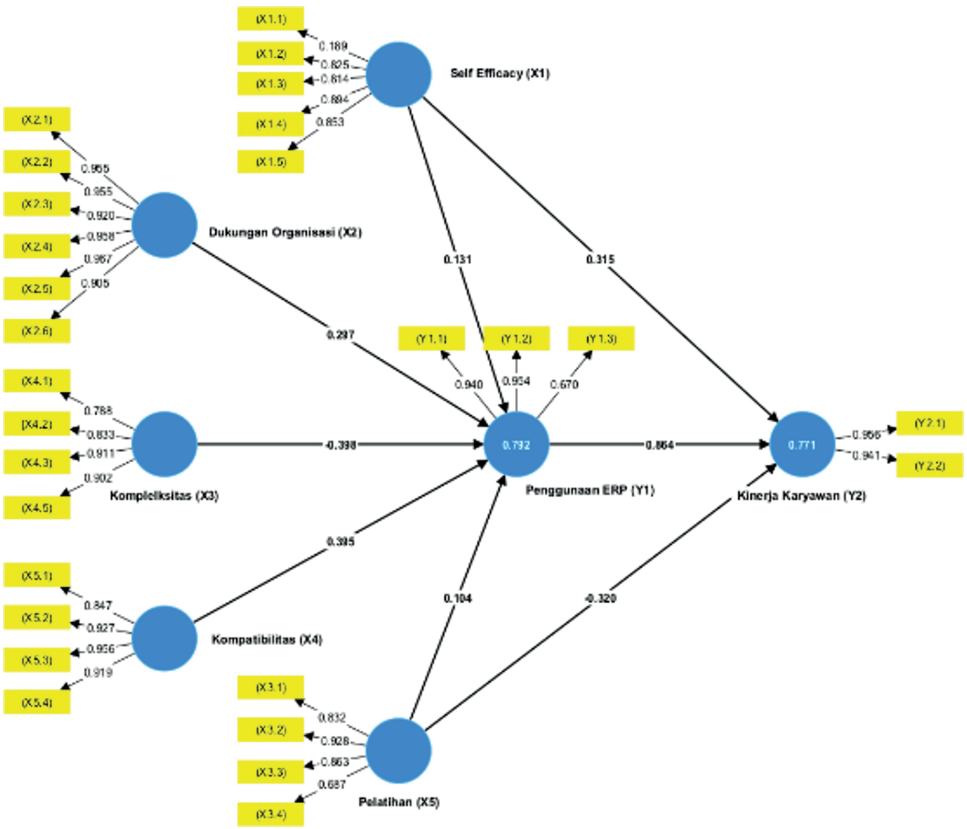

Figure 1: Test the validity and reliability of the construct. Source: Author's own work (2022).

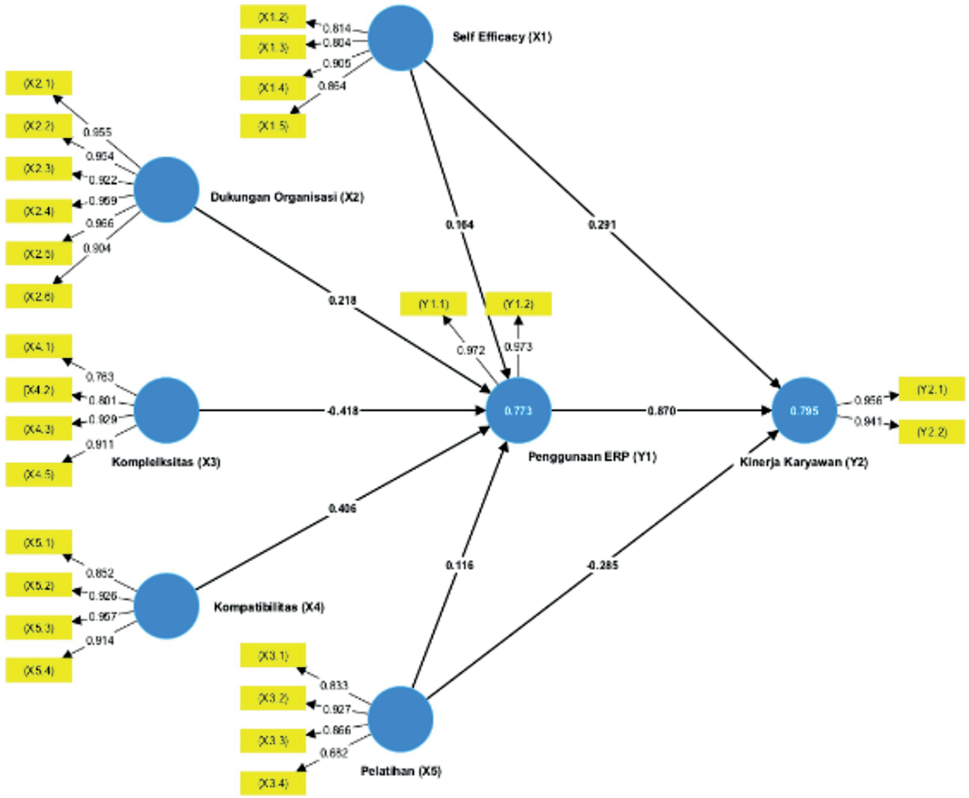

Figure 2: Research hypothesis test (inner model test). Source: Author's own work (2022).

Statistical analysis using bootstrapping, detailed in Table 1, has tested the relationships between various factors within the E-HRM system model. The findings unveil a complex interplay of influences, with some hypotheses supported and others not.

System quality (X1) and service quality (X3) exert significant effects on system use (Y1), suggesting that users are more likely to engage with systems that demonstrate high levels of quality in both areas.

Information quality (X2), however, does not directly impact system use but instead holds significant sway over user satisfaction (Y2). This implies that users are more likely to be satisfied with systems that provide accurate, relevant, and timely information.

Notably, system quality (X1) and service quality (X3) do not directly influence user satisfaction (Y2), suggesting that other factors may mediate this relationship.

System use (Y1) and user satisfaction (Y2) both contribute significantly to E-HRM system success (Y3), underscoring the importance of fostering both system utilization and positive user experiences.

The assessment of model fit within SEM encompasses a diverse array of measures, including the coefficient of determination (R square), f square, q square, the standardized root mean square residual (SRMR), and the NFI value. In the present study, researchers purposefully selected R square and SRMR as primary indicators of model fit. The initial

TABLE 1: Hypothesis test results.

	Original sample (O)	Average sample (M)	Standard deviation (STDEV)	T statistic (|O/STDEV|)	P_values	Infomation
System Quality (X1) System Use (Y1)	0.222	0.221	0.089	2.490	0.013	Accepted
System Quality (X1) User Satisfication (Y2)	0.022	0.020	0.052	0.429	0.668	Rejected
Information Quality (X2) System Use (Y1)	0.247	0.245	0.168	1.475	0.140	Rejected
Information Quality (X2) User Satisfication (Y2)	0.794	0.798	0.068	11.613	0.000	Accepted
Service Quality (X3) System Use (Y1)	0.363	0.366	0.153	2.376	0.018	Accepted
Service Quality (X3) User Satisfication (Y2)	-0.029	-0.027	0.067	0.425	0.671	Rejected
System Use (Y1) User Satisfication (Y2)	0.213	0.209	0.054	3.934	0.000	Accepted
System Use (Y1) eHRM System Success (Y3)	0.193	0.193	0.096	2.006	0.045	Accepted
User Satisfication (Y2) eHRM System Success (Y3)	0.651	0.653	0.086	7.592	0.000	Accepted

Source: Author's own work (2022)

phase of this evaluation involves scrutinizing the coefficient of determination (R square), with the calculated values meticulously presented in Table 2..

TABLE 2: The coefficient of determination (R square).

Variable Names	R-square	Adjusted R-square
System Use (Y1)	0.593	0.583
User Satisfaction (Y2)	0.902	0.899
e-HRM Sustem Sucess (Y3)	0.658	0.652

Source: Source: Author's own work (2022)

Table 2 shows that there is a significant effect.

System Quality (X1) System Use - Accepted, Information Quality (X2) System Use (Y1) - Rejected, and Service Quality (X3) the value of the coefficient of determination, R2 = 0.593 (59%), indicates system acceptance (Y1).

Similarly, there is a significant influence System Quality (X1) ⊠ User Satisfaction (Y2) - Rejected, Information Quality (X2) User Satisfaction (Y2) - Accepted, and Service Quality (X3) User Satisfaction (Y2) - Rejected, and System Use (Y1) User Satisfaction (Y2) - Accepted are indicated by the coefficient of determination, namely R2 = 0.902 (90%)

Then system use (Y1) e-HRM system success (Y3) - accepted and user satisfaction (Y2) e-HRM system success (Y3) - accepted are indicated by the value of the coefficient of determination, namely R2 = 0.658 (65%).

The calculated R squared values for system use (Y1) at 59%, user satisfaction (Y2) at 90%, and e-HRM system success (Y3) at 65% collectively provide compelling evidence that the developed model aligns effectively with the study's objectives. To further corroborate this suitability, researchers proceed to examine the standardized root mean square residual (SRMR) value, meticulously presented in Table 3.

TABLE 3: SRMR values in the model.

	Saturated model	Model estimates
SRMR	0.098	0.098
d_ULS	2.865	2.905
d_G	not available	not available

Source: Author's own work (2022)

The SRMR value stands as a pivotal measure of model fit, quantifying model-data discrepancies based on residuals. Lower SRMR values signify superior model accuracy and alignment with empirical observations. Adhering to established benchmarks, an SRMR value of 0.08 or below denotes a well-fitting model, values between 0.08 and 0.10 indicate marginal fit, and values exceeding 0.10 suggest an unsuitable model. In the present study, the SRMR value of 0.098, as presented in Table 3, falls within the marginal fit range, thus demonstrating acceptable yet potentially improvable model-data coherence.

4. Discussion

The analysis proceeded through a meticulous three-step process: first, evaluating the relationships between individual indicators and their underlying latent constructs; second, examining the interactions between these latent constructs; and lastly, assessing

the overall model fit to the empirical data, thereby testing the hypotheses established for the successful adoption of the E-HRM system.

Impact of System Quality (X1) on System Use (Y1): Hypothesis testing confirms a significant direct relationship between system quality (X1) and system use (Y1), as evidenced by the substantial effect size (p-value = 0.013). This finding reinforces the author's revised Delone and McLean Updated Model, suggesting hypothesis H1 possesses significant validity and applicability in future research. Moreover, it offers practical insights for companies seeking to promote system adoption success through improved system quality and subsequent increased system use.

Impact of System Quality (X1) on User Satisfaction (Y2): While hypothesis testing revealed a non-significant effect of system quality (X1) on user satisfaction (Y2) (p-value = 0.668), ranking among the weakest influences observed in this study, the model nonetheless underscores the imperative for high-quality information systems. This suggests that even in the absence of a direct, statistically significant relationship, maintaining a high-quality system remains a crucial prerequisite for overall user satisfaction and successful system adoption.

Impact of Information Quality (X2) on System Use (Y1): Contrary to expectations, hypothesis testing did not reveal a significant relationship between information quality (X2) and system use (Y1), as evidenced by the low effect size (p-value = 0.140). This suggests that despite being a fundamental requirement, information quality alone may not directly influence user engagement or system adoption success. While this finding departs from the theoretical model employed, it emphasizes the multifaceted nature of user behavior and the potential existence of mediating factors between information quality and system use. Therefore, ensuring high-quality information remains essential, but further investigation is needed to understand its indirect or nuanced implications for system adoption.

Impact of Information Quality (X2) on User Satisfaction (Y2): The empirical analysis revealed a statistically significant effect of information quality (X2) on user satisfaction (Y2). The minimal influence of other variables, coupled with factor loading and path coefficient values exceeding the recommended thresholds (0.7 and 0.000, respectively), further corroborates the validity of the tested variable. These findings solidify the notion that information quality, through its impact on user satisfaction, positively influences system adoption. This strengthens the existing evidence supporting TAM and UTAUT models.

Impact of Service Quality (X3) on System Usage (Y1). Our analysis found no statistically significant effect of service quality (X3) on system use (Y1). This is evidenced by the low

power of influence (0.018) compared to other factors, indicating that service quality plays a minimal role in influencing system usage within a successful E-HRM implementation.

Impact of Service Quality (X3) on User Satisfaction (Y2). Statistical analysis failed to establish a significant relationship between service quality (X3) and user satisfaction (Y2) within a successful E-HRM system. While individual factor loadings exceeded the 0.7 threshold, model compatibility testing revealed a path coefficient of 0.671, suggesting a weak influence of service quality on user satisfaction when accounting for other factors.

Impact of System Use (Y1) on User Satisfaction (Y2). Statistical analysis unequivocally demonstrates a significant positive effect of system use (Y1) on user satisfaction (Y2) within the E-HRM system. This is supported by a substantial power of influence (0.000), factor loadings exceeding 0.7, a path coefficient of 0.000, and a robust model fit of 90%. These findings underscore the pivotal role of system use in driving user satisfaction, which is integral to E-HRM system success.

Impact of System Use (Y1) on a Successful E-HRM System (Y3). Statistical analysis provides compelling evidence for a significant positive effect of system use (Y1) on E-HRM system success (Y3). This is supported by a substantial power of influence (0.045), robust factor loadings exceeding 0.7, a path coefficient of 0.045, and a satisfactory model fit of 59%. These findings emphasize the critical role of system usage in driving successful E-HRM system adoption and overall effectiveness.

Impact of User Satisfaction (Y2) on E-HRM System Success (Y3). Statistical analysis has convincingly demonstrated a powerful and positive association between user satisfaction (Y2) and E-HRM system success (Y3). This is substantiated by substantial factor loadings exceeding 0.7, a robust path coefficient of 0.000, and a satisfactory model fit of 65%, collectively solidifying the variable's validity. These findings show the critical role user satisfaction plays in driving system usage and fostering successful E-HRM system adoption.

5. Conclusion

In conclusion, this research has yielded valuable insights into the factors influencing the adoption and success of the E-HRM system, while also highlighting areas for further exploration. First, the findings confirm the significant impact of system quality on user satisfaction, as evidenced by a coefficient of determination of 90%. This underscores the importance of continuous investment in system refinement and infrastructure optimization to enhance user experiences. However, the study also identifies two variables with erroneous indicators, X1.4 ("E-HRM promptly responds to inquiries") and Y1.3 ("E-HRM enhances work performance"), which failed to yield results in internal

tests. This calls for a re-evaluation and potential revision of these indicators to ensure their effectiveness in future research. Moreover, while users acknowledge the E-HRM system's helpfulness in HR management, it has yet to achieve a fully satisfactory level of adoption and integration. This suggests the need for a dual focus on both technical and human aspects: Continuously enhance system quality and infrastructure to maximize its functionality and accessibility; concurrently, improve the quality of human resources and policies to ensure alignment with diverse user needs and expectations. Furthermore, the coefficient of determination of the system use variable (R2=59%) indicates that additional variables beyond those examined in this study likely influence E-HRM adoption success. Therefore, further research is strongly recommended to uncover these hidden factors and develop a more comprehensive understanding of the system's overall impact. By embracing these recommendations, organizations can embark on a journey to not only optimize the E-HRM system but also strategically leverage its potential to transform HR processes and elevate the overall employee experience.

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