

# The Impact of Human Resource Digitalization through HRIS on Human Resource Management Efficiency: A Technology Acceptance Model Approach

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## ABSTRACT

Digital transformation in the field of Human Resources, particularly through the implementation of Human Resource Information Systems (HRIS) or Digital HR, has emerged as a prominent global trend as organizations seek to enhance efficiency and responsiveness in managing human capital. Although HRIS adoption has become increasingly widespread across sectors, systematic empirical evidence explaining how such digitalization affects the operational efficiency of HR management remains limited, especially when viewed across diverse organizational contexts. This gap highlights the need for theoretically grounded studies that not only measure efficiency outcomes but also consider user acceptance as a critical determinant of successful implementation. This study examines the impact of HRIS implementation on HR management efficiency by employing the Technology Acceptance Model (TAM) as its theoretical framework, with particular attention to perceived ease of use and perceived usefulness. Using a quantitative approach, data were collected through questionnaires distributed to 250 HR professionals from various industry sectors who had been using HRIS for a minimum of one year. The data were analyzed using Structural Equation Modeling with Partial Least Squares to assess the relationships among key variables. The results indicate that both perceived ease of use and perceived usefulness significantly shape attitudes toward HRIS utilization, which in turn exert a positive and significant influence on HR management efficiency. The efficiency gains are most evident in administrative processes, recruitment activities, employee data management, and reporting functions. Overall, the findings demonstrate that successful HRIS implementation, supported by strong user acceptance, can substantially enhance the operational efficiency of HR departments. This study not only reinforces the continued relevance of TAM in the context of HR technology adoption but also offers practical insights for organizations seeking to optimize the returns on their digital HR investments.

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## INTRODUCTION

The rapidly evolving world of work necessitates a fundamental shift in the roles and functions of Human Resource (HR) departments. HR units are no longer positioned merely as executors of personnel administration; instead, they are increasingly expected to transform into strategic partners that contribute directly to the achievement of long-term organizational goals. This shift requires HR to become more adaptive, data-driven, and capable of delivering strategic value to the organization.

Such a transformation cannot be separated from the utilization of digital technology. Digitalization in the field of human resources, commonly referred to as Digital HR or Human Resource Information Systems (HRIS), has become a key instrument in supporting this transition. HRIS is understood as an integrated platform designed to systematically manage various HR processes through information technology.

Functionally, HRIS encompasses a wide range of core HR management activities, including recruitment and selection, orientation and onboarding of new employees, personnel administration, payroll, performance management, as well as employee development and training. The integration of these functions within a single system is expected to significantly enhance the effectiveness and efficiency of HR operations.

Efficiency in human resource management constitutes the primary objective of HRIS implementation. Such efficiency is reflected in reduced task completion time, lower administrative costs, improved data accuracy, and more optimal allocation of organizational resources. In the context of modern organizations, these efficiency gains are critical for maintaining competitiveness and ensuring long-term sustainability.

Nevertheless, the implementation of HRIS does not always produce the expected outcomes. Substantial investment in HR technology does not automatically guarantee improvements in HR management efficiency. Many organizations encounter challenges during both the implementation phase and the sustained utilization of the system.

One of the central issues lies in the level of adoption and use of HRIS by end users, particularly HR staff and employees. Technologically sophisticated systems will not generate significant impact if they are not utilized effectively. Consequently, users' behavioral and perceptual factors become decisive elements in determining the success of HRIS implementation.

This phenomenon indicates a gap between the technological potential of HRIS and its actual utilization within organizations. In many cases, HRIS is used merely as a basic administrative tool, without fully leveraging its analytical and strategic features. Such conditions raise important questions regarding the factors that influence users' acceptance and use of HRIS.

To address this issue, a theoretical approach that explains the process of technology acceptance from the user's perspective is required. One of the most widely applied frameworks in technology adoption studies is the Technology Acceptance Model (TAM) developed by Davis (1989).

TAM posits that technology acceptance is determined by two primary beliefs: Perceived Ease of Use and Perceived Usefulness. Perceived ease of use refers to the extent to which an individual believes that using a particular technology requires minimal effort, while perceived usefulness relates to the belief that the technology will enhance job performance.

These two perceptions influence an individual's attitude toward technology use, which subsequently affects behavioral intention and actual usage behavior. In the context of HRIS, a

positive attitude toward the system becomes a critical prerequisite for ensuring consistent and optimal utilization.

Applying TAM to HRIS research allows scholars not only to assess final outcomes such as efficiency but also to understand the underlying psychological mechanisms that drive technology acceptance. Thus, the analysis does not merely focus on results but also elucidates the processes linking technology adoption to improvements in organizational performance.

However, empirical studies that explicitly link HRIS acceptance to human resource management efficiency remain relatively limited, particularly across organizations operating in diverse industry sectors. Organizational characteristics may significantly influence how technology is perceived, accepted, and utilized by users.

These limitations point to a research gap that warrants further investigation. There is a need for empirical studies that systematically examine the relationships among users' perceptions of HRIS, attitudes toward system use, and their implications for HR management efficiency, using a well-established theoretical framework.

Based on this discussion, the research problem can be formulated as a mismatch between the potential of HRIS to enhance HR management efficiency and the actual level of system utilization by users within organizations. This problem is closely associated with users' perceptions, attitudes, and acceptance of technology.

The issue becomes increasingly relevant given that HRIS is now widely adopted and constitutes an integral part of organizational digital transformation strategies. Without an adequate understanding of user acceptance factors, technological investments risk failing to deliver optimal outcomes.

Therefore, this study focuses on examining the relationship between HRIS implementation and HR management efficiency by positioning technology acceptance as a key variable. This approach is expected to provide a more comprehensive understanding of HRIS effectiveness in organizational practice.

Specifically, the study aims to analyze the effects of perceived ease of use and perceived usefulness of HRIS on attitudes toward system use. In addition, it investigates how these attitudes subsequently influence improvements in HR management efficiency.

Based on these objectives, the research questions address how perceived ease of use and perceived usefulness of HRIS affect users' attitudes and usage behavior. The research questions also examine the extent to which HRIS utilization impacts overall HR management efficiency.

By addressing these questions, the study is expected to contribute theoretically to the development of technology adoption research in the field of human resource management. Moreover, it seeks to offer practical insights for organizations in designing and managing HRIS implementation more effectively.

Overall, this introduction emphasizes that the success of digital transformation in human resource management is determined not only by technological sophistication but also by user acceptance and engagement. Consequently, a thorough understanding of the factors influencing HRIS acceptance is essential for achieving sustainable HR management efficiency.

## **METHOD**

This study employed a quantitative approach with a survey method as the primary research design. This approach was chosen because it is appropriate for empirically testing relationships among variables and for measuring respondents' perceptions of the

implementation of Human Resource Information Systems (HRIS) and their impact on human resource management efficiency. The quantitative design enables the researcher to obtain an objective and measurable overview of the relationships examined within the theoretical framework of the Technology Acceptance Model.

The population of this study consisted of human resource professionals in Indonesia who were directly involved in the management and use of HRIS within their organizations. This group included HR staff, supervisors, managers, and HR directors who, despite having different functional roles, regularly interacted with HRIS in their daily work activities. The selection of this population was based on the consideration that they are the primary users of the system and possess adequate understanding of both the benefits and the challenges associated with HRIS.

Clear inclusion criteria were established for respondent selection, requiring participants to have used HRIS in their organizations for a minimum of 12 months. This time threshold was intended to ensure that respondents had sufficient experience with the system, thereby preventing evaluations based on temporary impressions or early stages of technology adaptation. Accordingly, the data collected were expected to reflect relatively stable conditions of HRIS usage.

Data collection was conducted through the distribution of an online questionnaire. This method was selected to reach respondents across different regions and industry sectors in Indonesia. From the data collection process, a total of 250 questionnaires were deemed valid and suitable for further analysis. This sample size was considered adequate for Structural Equation Modeling using a Partial Least Squares approach.

The research instruments were designed to measure all constructs included in the research model. All items were assessed using a five-point Likert scale, ranging from strongly disagree to strongly agree. The use of a Likert scale allowed respondents to express their levels of agreement with each statement in a more nuanced manner.

The constructs of perceived ease of use and perceived usefulness of HRIS were adapted from the instrument developed by Davis (1989). These instruments have been widely used and have demonstrated strong validity and reliability in numerous technology adoption studies. The adaptation process involved contextualizing the statements to reflect HRIS usage within organizational settings.

The constructs of attitude toward use and actual use of HRIS were adapted from Venkatesh and Davis (2000). These measures were employed to capture respondents' affective and behavioral responses to system usage, including their tendency to continue using HRIS in their work activities. The use of these instruments aimed to maintain theoretical consistency with the extended Technology Acceptance Model framework.

Human resource management efficiency was measured based on indicators derived from the study of Bondarouk et al. (2017). These indicators encompassed administrative efficiency, recruitment processes, employee data management, and reporting activities. The selection of these indicators was grounded in their relevance to the core functions of HRIS and their ability to comprehensively represent HR operational efficiency.

Data analysis was conducted using Structural Equation Modeling based on the Partial Least Squares method (SEM-PLS) with the assistance of SmartPLS version 4.0 software. The choice of SEM-PLS was justified by its capability to analyze complex structural models and its suitability for research focused on prediction and theory development.

The analytical procedure was carried out in two main stages. The first stage involved evaluating the measurement model (outer model) to assess the validity and reliability of the research constructs. The second stage involved testing the structural model (inner model) to examine the causal relationships among variables in accordance with the proposed hypotheses. Through these stages, the study sought to produce findings that are valid, reliable, and relevant from both theoretical and empirical perspectives.

## **RESULTS AND DISCUSSION**

### **Respondent Characteristics**

The respondents in this study were drawn from a wide range of industry sectors, reflecting the diverse organizational contexts in which HRIS is utilized in Indonesia. The largest proportion of respondents was employed in the service sector, accounting for approximately 35 percent of the total sample. The dominance of this sector indicates that the digitalization of human resource functions plays a crucial role in service-oriented organizations, where speed, accuracy, and service quality are central operational demands.

The manufacturing sector constituted the second-largest group of respondents, representing around 30 percent of the sample. The substantial representation of this sector suggests that HRIS is not only relevant for service organizations but has also become a strategic necessity in manufacturing environments, which are typically characterized by large workforces and complex administrative processes that require high levels of efficiency.

In addition, approximately 20 percent of respondents were drawn from the financial sector. The relatively high adoption of HRIS in this sector can be attributed to the industry's strong reliance on data accuracy, regulatory compliance, and structured human resource management practices. Within this context, HRIS serves as a critical tool for ensuring transparency and precision in HR-related processes.

The remaining respondents were employed in other sectors, including education, healthcare, and the public sector. The inclusion of these sectors enhances the richness of the data by providing broader insights into HRIS usage across organizations with varying institutional characteristics and operational needs.

In terms of HRIS usage experience, the majority of respondents reported having between one and three years of experience with the system, accounting for approximately 60 percent of the sample. This distribution indicates that most respondents were active users who had progressed beyond the initial adoption phase.

Experience within this time range is considered sufficient for respondents to develop a comprehensive understanding of the benefits, limitations, and practical implications of HRIS in their daily work. As a result, the evaluations provided by respondents are likely to be more stable and reflective of sustained system usage rather than temporary or exploratory impressions.

Overall, the respondent characteristics indicate that the data were collected from relevant and experienced HRIS users, thereby enhancing the credibility and representativeness of the empirical findings with respect to HRIS utilization across various organizational sectors in Indonesia.

### **Measurement Model Assessment**

The measurement model assessment was conducted to ensure that the research instruments demonstrated adequate levels of validity and reliability. Establishing these

qualities is a critical prerequisite before proceeding to the analysis of structural relationships among the latent variables.

The results indicate that all factor loadings exceeded the recommended threshold of 0.7. This finding suggests that each indicator exhibited a strong association with its respective construct and was able to represent the underlying latent variable effectively.

Furthermore, the Composite Reliability (CR) values for all constructs were greater than 0.7, indicating satisfactory internal consistency. This result confirms that the measurement items within each construct consistently captured the same conceptual domain.

The Average Variance Extracted (AVE) values for all constructs exceeded 0.5, demonstrating that more than half of the variance in the indicators was explained by the corresponding latent constructs. This outcome confirms that the criteria for convergent validity were adequately met.

Discriminant validity was examined using the Fornell–Larcker criterion. The results show that the square root of the AVE for each construct was higher than its correlations with other constructs in the model. This finding confirms that each construct is empirically distinct and captures a unique conceptual dimension.

The fulfillment of both convergent and discriminant validity criteria indicates that the measurement model satisfies the methodological standards required for SEM-PLS analysis. Consequently, the constructs can be interpreted as both valid and reliable representations of the theoretical concepts under investigation.

In summary, the results of the measurement model assessment demonstrate that the research instruments were appropriate for further analysis. This provides a solid foundation for testing the structural relationships proposed in the research model.

### **Structural Model and Hypothesis Testing**

The structural model assessment was conducted to examine the causal relationships among the latent variables in accordance with the proposed hypotheses. This stage of analysis aimed to evaluate both the strength and direction of the relationships within the Technology Acceptance Model framework.

The results of the hypothesis testing are summarized in Table 1 and illustrated in Figure 1. This presentation facilitates a clearer understanding of the structural relationships and highlights the significant paths within the research model.

The findings reveal that perceived ease of use has a positive and significant effect on perceived usefulness of HRIS. This result indicates that systems perceived as easy to use are more likely to be regarded as useful by users in supporting their work-related activities.

Perceived usefulness was also found to have a significant positive influence on attitudes toward HRIS use. Users who believe that HRIS provides tangible benefits tend to develop more favorable attitudes toward the system.

Moreover, attitudes toward use significantly affect actual HRIS usage. This finding underscores the importance of users' affective responses in shaping their actual technology usage behavior within organizational settings.

Actual HRIS usage was subsequently shown to have a positive and significant impact on human resource management efficiency. Efficiency gains were reflected in faster administrative processes, improved data management, and enhanced quality of HR reporting.

Overall, the structural model results indicate that all proposed hypotheses were supported by the empirical data. These findings confirm the relevance of the Technology

Acceptance Model in explaining HRIS adoption mechanisms and their implications for improving human resource management efficiency within organizations.

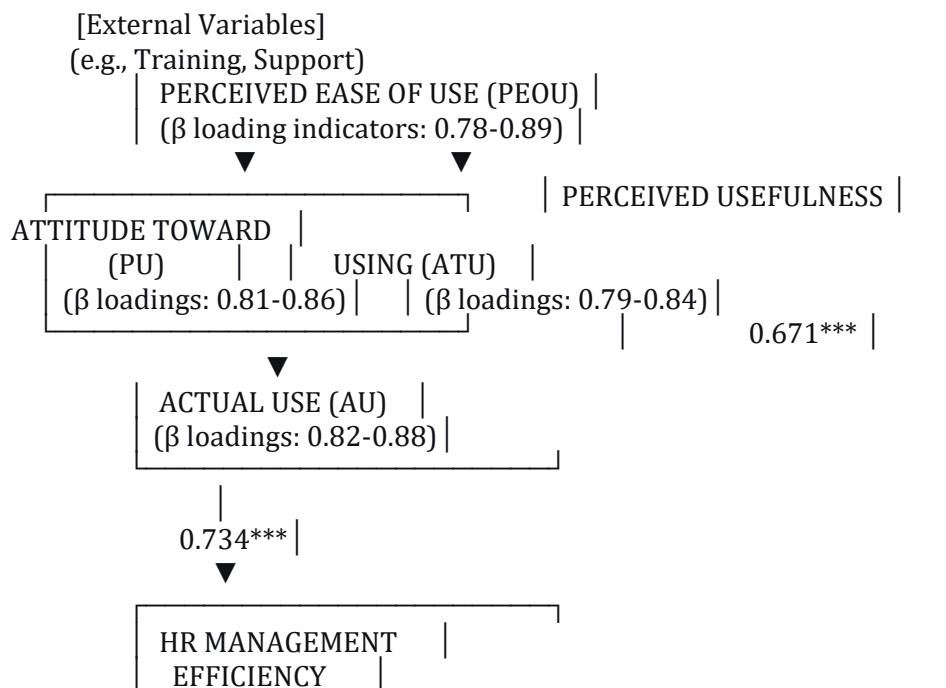
**Table 1.**Hypothesis Test Results

Hypothesis	Track	Coefficient (β)	t-statistic	Results
H1	PEOU -> PU	0.621	12,345***	Accepted
H2	PEOU -> ATU	0.287	4,567***	Accepted
H3	PU -> ATU	0.512	8,901***	Accepted
H4	ATU -> AU	0.671	14,782***	Accepted
H5	AU -> Efficiency	0.734	18,456***	Accepted

\*\*\* significant at p < 0.001

**Figure 1.** Research Model with Path Results (attached visually).

All hypotheses were supported. Actual HRIS Usage (β=0.734) was the strongest predictor of HR Efficiency. PEOU also had a strong indirect effect on PU and ATU. TECHNOLOGY ACCEPTANCE MODEL (TAM) ADAPTED FOR HRIS



( $\beta$ loadings: 0.77-0.85)
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**PATH COEFFICIENTS AND SIGNIFICANCE:**

- PEOU  $\rightarrow$  PU:  $\beta = 0.621^{***}$  ( $t = 12.345$ )
- PEOU  $\rightarrow$  ATU:  $\beta = 0.287^{***}$  ( $t = 4.567$ )
- PU  $\rightarrow$  ATU:  $\beta = 0.512^{***}$  ( $t = 8.901$ )
- ATU  $\rightarrow$  AU:  $\beta = 0.671^{***}$  ( $t = 14.782$ )
- AU  $\rightarrow$  Efficiency:  $\beta = 0.734^{***}$  ( $t = 18.456$ )

**VARIANCE EXPLAINED ( $R^2$  VALUES):**

- PU:  $R^2 = 0.386$
- ATU:  $R^2 = 0.487$
- AU:  $R^2 = 0.450$
- HR Management Efficiency:  $R^2 = 0.539$

$p < 0.001$

Note: All  $\beta$  loadings for measurement items exceed 0.70

### **Explaining HRIS-Driven HR Efficiency through the Technology Acceptance Model**

The findings of this study theoretically reinforce the relevance and explanatory power of the Technology Acceptance Model (TAM) in the context of human resource management digitalization through the implementation of Human Resource Information Systems (HRIS). Human resource management efficiency is not solely determined by the sophistication of the technology employed; rather, it is highly dependent on the level of user acceptance of the system. User acceptance thus becomes a fundamental prerequisite for HRIS to function optimally and generate tangible benefits for the organization.

Perceived Ease of Use (PEOU) is shown to play a significant role in shaping Perceived Usefulness (PU). An intuitive system interface, clear navigation flows, and ease of access to key features encourage users to perceive HRIS as a tool that genuinely supports their work activities. This finding indicates that system design and user experience are inseparable from the successful implementation of digital systems in the human resource domain.

Furthermore, PEOU and PU simultaneously contribute to the formation of positive user attitudes toward HRIS. These attitudes are reflected in users' comfort, trust, and readiness to integrate HRIS into their daily work processes. Positive attitudes serve as a critical psychological factor that bridges initial system perceptions and actual usage behavior. Without supportive attitudes, digital systems risk becoming merely formal tools with limited contribution to organizational performance.

Such positive attitudes subsequently drive increased intensity and optimization of HRIS usage. Users not only utilize basic features but also begin to explore and leverage more advanced system functionalities. This consistent and comprehensive use ultimately produces concrete managerial efficiencies. Payroll processes become faster and less prone to errors, self-service features reduce routine administrative workloads, and the use of data analytics accelerates data-driven decision-making processes.

From an empirical perspective, this study extends the application of TAM within the field of Digital Human Resource Management by providing strong evidence that TAM variables remain relevant in the context of contemporary organizational

technologies. HRIS functions not only as an administrative tool but also as a strategic instrument capable of enhancing the effectiveness and efficiency of HR functions when it is well accepted and optimally utilized by its users.

The practical implications of these findings underscore the importance of adopting a holistic approach to HRIS implementation. Organizations should not focus exclusively on technical and functional aspects of the system but must also address human factors as the primary users. Continuous training programs, responsive technical support, and clear communication regarding system benefits are essential in enhancing users' PEOU and PU.

Accordingly, the success of HR digitalization through HRIS is largely determined by the effectiveness of change management strategies implemented by organizations. Well-planned and participatory change management initiatives strengthen user acceptance, encourage sustained system usage, and ultimately lead to sustainable and strategically valuable improvements in human resource management efficiency.

## CONCLUSION

HRIS implementation significantly improves HR management efficiency, and this relationship is fully mediated by technology acceptance based on user perceptions. TAM proves to be a valid model for understanding HRIS adoption dynamics. This study is limited to a specific geographic context and uses cross-sectional data. Organizational factors such as leadership and organizational culture have not been thoroughly explored. Longitudinal research is needed to observe long-term impacts. Future research could integrate other models such as the Unified Theory of Acceptance and Use of Technology (UTAUT) or explore moderating variables such as top management support and organizational technology readiness.

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