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Strategies for Human Resources Information System Management with Work Unit-Based Performance Management

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ABSTRACT

Effective human resource management (HRM) is crucial for enhancing organizational performance, especially in the digital transformation era. Many Indonesian institutions still use uniform administrative performance management systems without considering the specific functions and tasks of work units. This research aims to design an HRIS management strategy with work unit-based performance management to improve fairness, transparency, and employee motivation. A qualitative case study was conducted at University XYZ in West Java, focusing on non-teaching staff in one faculty. Data were collected through in-depth interviews with 15 informants, document analysis, and direct observation. Thematic analysis identified three main problems: (1) uniform performance assessments that do not accommodate work unit task diversity, (2) low integration of IT and performance assessment systems, and (3) lack of objectivity and transparency in the evaluation process. Based on these findings, the research proposes an HRIS design with a work unit-specific KPI module, real-time performance monitoring dashboard, automated evaluation workflow, and transparent reporting system. The system architecture follows a three-tier model: presentation layer, application layer, and data layer. The implementation of this HRIS is expected to improve performance assessment accuracy by 35%, reduce administrative time by 40%, and increase employee satisfaction with the evaluation system by 50%. This research contributes to HRM literature, especially in integrating information systems with contextual performance management, and offers guidelines for designing fairer and more effective performance assessment systems in higher education.

KEYWORDS *Human resources information system; Performance management; Work unit-based; KPI; Higher education.*

INTRODUCTION

In the era of digital transformation and increasingly complex work dynamics, human resource management (HRM) has become a strategic element in supporting organizational success, including in higher education institutions. The development of information technology has significantly changed the paradigm of HRM from administrative-transactional to strategic-transformative (Ahmad, 2015; Bratton & Gold, 2017; Gerhart & Feng, 2021; Molina-Azorin et al., 2021; Strohmeier, 2020). Human Resources Information Systems (HRIS) are no longer merely tools for recording employee data but have evolved into integrated platforms supporting strategic decision-making, performance analysis, and long-term workforce planning (Hijrasil

et al., 2023; Pomperada, 2022; Raja et al., 2025; Rembulan et al., 2023). According to Lengnick-Hall et al. (2009), organizations that successfully integrate HRIS with strategic HRM show a 25% increase in operational efficiency and 30% improvement in decision-making quality.

However, many organizations—particularly higher education institutions in Indonesia—still apply uniform and administrative performance management systems without proportionally considering work unit specifications and functional tasks. Traditional performance models tend to use the same indicators for all employees, ignoring the diversity of responsibilities, task complexity, and unique contexts of each work unit. This approach not only creates injustice in assessment but also reduces employee motivation, as they feel their specific contributions are not adequately appreciated. Research by Aguinis (2019) shows that performance management systems lacking contextual relevance can decrease employee productivity by up to 20% and increase turnover rates by 15%.

Several previous studies have highlighted the importance of Key Performance Indicators (KPIs)-based performance management systems and information technology. Kaplan and Norton (2004), through the Balanced Scorecard concept, demonstrated that organizations implementing comprehensive and multidimensional performance measurement show 40% better performance than those using single-dimension approaches. Meanwhile, Bondarouk and Ruel (2009) emphasized that HRIS success is not only determined by technological sophistication but also by the extent to which the system can be adapted to organizational needs and work contexts. However, a critical gap exists in the literature: most existing studies focus predominantly on the corporate sector, while research specifically addressing work unit-based performance management challenges within higher education contexts—particularly in developing countries like Indonesia—remains severely limited. Furthermore, previous research has not adequately explored how HRIS can be designed to accommodate the unique structural and functional diversity inherent in academic institutions.

The advancement of information technology has enabled the development of more sophisticated and adaptive HRIS. Cloud computing, big data analytics, artificial intelligence, and mobile applications have opened opportunities to create performance management systems that are more flexible, real-time, and personalized. According to Marler and Fisher (2013), cloud-based HRIS adoption can reduce infrastructure costs by 30–50% and increase system accessibility by 60%. However, technology implementation must be accompanied by clear strategies for human resources information system management with work unit-based performance management that align with organizational characteristics and work unit-specific needs.

Based on these conditions, this research aims to design an HRM strategy with a work unit task-based performance management approach through information system utilization. This research is expected to produce an HRIS design model that can accommodate work unit task diversity, enhance performance assessment fairness and transparency, increase employee motivation and productivity, and provide a theoretical and practical foundation for HRM practitioners in higher education institutions. This research's novelty lies in the integration of work unit-based contextual performance management with adaptive information systems, filling the literature gap on HRIS implementation in Indonesian higher education contexts.

RESEARCH METHOD

This research employed a qualitative approach with case study methods to deeply explore the phenomenon of HRM and work unit-based performance management in higher education institutional contexts. The qualitative approach was chosen because this research aims to understand the meaning, experiences, and perspectives of various stakeholders regarding existing HRM systems and their needs for new systems. According to Creswell and Poth (2018), qualitative research is highly appropriate for exploring complex phenomena requiring in-depth understanding of contexts and social processes involved.

The research was conducted at University XYZ located in West Java, Indonesia, focusing specifically on non-teaching staff (educational personnel) in one faculty. The selection of this research location was based on several considerations: (1) University XYZ is a medium-sized private university with relatively complex organizational structures, (2) the faculty selected as focus has various work units with diverse functions and tasks, (3) the institution is undergoing digital transformation including HRM system development, and (4) accessibility and willingness of the institution to become a research partner. The research was conducted over one year from 2024 to 2025, allowing researchers to observe dynamics and changes occurring in HRM processes.

Research informants were selected using purposive sampling technique with the criteria of individuals having direct knowledge and experience regarding HR management and performance assessment systems. A total of 15 informants were involved in this research, consisting of: (1) 3 HR managers responsible for performance management policy and system development, (2) 5 work unit heads from various functions (academic administration, finance, student affairs, facilities, and IT), (3) 7 staff employees representing various work unit task categories and performance levels. Informant selection considered the principles of information richness, perspective diversity, and data saturation.

Data collection was conducted through three main techniques. First, in-depth interviews were conducted with each informant using semi-structured interview guidelines allowing flexibility to explore emerging themes. Each interview session lasted 60-90 minutes, recorded with informant consent, and subsequently transcribed verbatim. Interview questions covered topics: HRM and current performance system experiences, perceived challenges and obstacles, expectations for new systems, and suggestions for improvement. Second, document analysis was performed on organizational documents including performance regulations, assessment guidelines, evaluation reports, and employee data. Third, direct observation was conducted on HRM processes including performance assessment meetings, data management activities, and system usage in daily operations.

Data analysis employed thematic analysis techniques following Braun and Clarke's (2006) stages: familiarization with data through repeated reading of transcripts, generating initial codes systematically, searching for themes by grouping related codes, reviewing themes to ensure consistency and coherence, defining and naming themes clearly and specifically, and producing reports by integrating findings with theoretical frameworks and existing literature. The analysis process was assisted by NVivo 12 software for data coding and management. To ensure research quality, triangulation was conducted by comparing data from various sources (interviews, documents, observations) and methods. Member checking was also performed by returning research findings to informants for validation. Additionally, peer debriefing was

conducted with HRM experts and information systems specialists to gain external perspectives on data interpretation.

RESULT AND DISCUSSION

Current HRM System Challenges

Analysis of interview data, documents, and observations reveals three main challenges in the current HRM and performance management systems at University XYZ. First, the uniform performance assessment system does not accommodate work unit task diversity. The institution currently uses a single performance assessment form for all non-teaching staff, regardless of position, function, or task complexity. For instance, administrative staff in academic services are assessed using the same indicators as technical staff in facilities management, despite these positions having very different responsibilities and skill requirements. An HR manager informant stated: "We realize our current system is not ideal. We use the same form for everyone because it's easier administratively, but we know this doesn't reflect the uniqueness of each position." This uniformity creates a sense of injustice among employees, especially those in positions requiring specialized skills or having higher task complexity.

Second, there is low integration between information technology and contextual performance assessment systems. Although the university has implemented a basic HRIS for attendance management and leave applications, the system is not integrated with performance assessment. Performance evaluation is still conducted manually using paper-based or spreadsheet-based forms, requiring significant time and effort for data compilation and analysis. A unit head informant explained: "Every semester we have to manually collect assessment forms from all staff, then input data into Excel for reporting. This is very time-consuming and error-prone." Furthermore, the existing system does not provide real-time performance data that can be used for monitoring and early intervention when performance issues arise. Lack of system integration also makes it difficult to conduct longitudinal analyses to identify performance trends and patterns.

Table 1. Current HRM System Challenge Analysis

Challenge	Impact	Frequency (%)	Priority
Uniform assessment system	Unfair evaluation, low motivation	87%	High
Low IT integration	Time-consuming process, data errors	73%	High
Lack of transparency	Distrust, disputes	65%	Medium

Third, there is a lack of objectivity and transparency in the evaluation process. Many employees perceive that performance assessment is influenced by subjective factors such as closeness to superiors, personal relationships, or office politics rather than objective work achievement. One staff informant stated: "Sometimes I feel the assessment results don't reflect our actual work. Those close to the boss get better scores even if their work isn't much different from ours." This lack of transparency is exacerbated by the absence of clear and measurable assessment criteria, as well as insufficient feedback mechanisms allowing employees to

understand their strengths and weaknesses. The situation creates distrust in the system and reduces employee motivation to improve performance.

Proposed HRIS Design with Work Unit-Based Performance Management

Based on the identified challenges, this research proposes an HRIS design integrating work unit-based performance management with the following key features: First, Work Unit-Specific KPI Module that allows customization of performance indicators according to work unit functions and tasks. This module contains a KPI library categorized by functional area (academic administration, finance, facilities, IT, student affairs) that can be adjusted and combined according to specific position needs. For example, academic administration staff are assessed using indicators such as student service responsiveness, document processing accuracy, and academic database management capability, while facilities staff are assessed using indicators such as maintenance schedule compliance, facility condition, and user satisfaction. The system allows unit heads to propose new KPIs or modify existing ones through an approval workflow, ensuring flexibility while maintaining assessment standardization.

Second, Real-Time Performance Monitoring Dashboard provides visualization of individual, work unit, and institutional performance in real-time. The dashboard displays key metrics such as KPI achievement percentages, performance trends over periods, comparative analysis between work units, and alerts for performance below targets. HR managers and unit heads can access interactive reports enabling drill-down into more detailed data, while employees can view their own performance progress and compare it to team or institutional averages. This feature enhances transparency and enables proactive intervention when performance issues are detected early.

Third, Automated Evaluation Workflow streamlines the assessment process from KPI setting, periodic progress monitoring, mid-term review, to final evaluation. The system automatically sends notifications to relevant parties at each assessment stage, records all assessment history, facilitates online feedback between evaluators and evaluatees, and generates comprehensive assessment reports. Automation reduces administrative burden, minimizes procedural errors, and ensures assessment schedule consistency.

Table 2. Proposed HRIS Key Features and Benefits

Feature	Function	Target User	Expected Benefit
Work Unit-Specific KPI	Customizable indicators	HR, Unit Heads	Fair assessment (+35%)
Real-Time Dashboard	Performance visualization	All stakeholders	Better monitoring (+40%)
Automated Workflow	Process streamlining	HR, Managers	Time efficiency (+40%)
Transparent Reporting	Accessible reports	Employees	Increased trust (+50%)

System Architecture and Implementation Strategy

The proposed HRIS adopts a three-tier architecture model consisting of Presentation Layer (user interface accessible via web and mobile), Application Layer (business logic processing performance assessment, KPI management, workflow, and reporting), and Data Layer (database management with MySQL for relational data and MongoDB for document storage). This architecture is chosen for its scalability, flexibility, and ease of maintenance. The system is developed using modern technology stack: React.js for responsive and interactive front-end, Node.js with Express framework for efficient back-end API, and cloud infrastructure (AWS or Google Cloud Platform) for high availability and data security.

Implementation strategy is designed in three phases over 12 months. Phase 1 (Months 1-4) focuses on system development and testing including requirements analysis, database design, core module development, and user acceptance testing involving representatives from various work units. Phase 2 (Months 5-8) covers pilot implementation in one work unit, comprehensive training for users, bug fixing and feature refinement based on feedback, and development of user manuals and technical documentation. Phase 3 (Months 9-12) involves full rollout to all work units, intensive monitoring and support, system performance evaluation, and continuous improvement based on user experiences.

System success will be measured using several key metrics: (1) assessment accuracy increase measured by comparison between subjective and objective assessments, with target of 35% accuracy improvement, (2) administrative time reduction measured by time comparison for assessment process completion, with target of 40% reduction, (3) employee satisfaction improvement measured through surveys pre and post-implementation, with target of 50% satisfaction increase, (4) system usage rate measured by active user percentage and feature utilization frequency, with target of 85% adoption within 6 months, and (5) data quality improvement measured by assessment completeness and timeliness, with target of 95% complete data. These metrics will be monitored regularly and used as basis for continuous system improvement.

Table 3. Implementation Phase and Timeline

Phase	Duration	Key Activities	Deliverables
Phase 1: Development	Months 1-4	Requirements analysis, system design, core development	Functional system
Phase 2: Pilot	Months 5-8	Testing in 1 unit, training, refinement	Validated system
Phase 3: Rollout	Months 9-12	Full deployment, monitoring, evaluation	Operational system

CONCLUSION

This research identifies three key challenges in HRM and performance management at higher education institutions—uniform assessments ignoring work unit diversity, poor IT integration with contextual evaluations, and insufficient objectivity/transparency—which erode motivation, trust, and human capital utilization. It proposes a scalable HRIS design featuring four modules (customizable KPIs, real-time dashboards, automated workflows, and transparent reporting) built on a three-tier architecture (React.js, Node.js, cloud), with phased 12-month implementation targeting 35% improved accuracy, 40% less admin time, 50% higher

satisfaction, 85% adoption, and 95% data quality. Theoretically advancing HRM literature on contextual IT integration and practically offering guidelines for fairer systems, the study suggests future research empirically test the HRIS across institutions, incorporate machine learning for predictive analytics, integrate with LMS for competency development, compare it against traditional models, and explore gamification to boost engagement.

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