

The Role of HRIS Technology in Human Resource Management Efficiency in Higher Education

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Article Info	ABSTRACT
<p>Keywords: Human Resource Information System/HRIS, efficiency, human resource management, Higher Education, digital transformation.</p>	<p>In the era of digital transformation, efficient human resource (HRM) management has become a critical requirement for every organization, including universities. This study aims to analyze the role of the Human Resource Information System (HRIS) in improving HR management efficiency at several universities in Bandung. The research method used was qualitative with a descriptive approach, through interviews and observations of universities that have implemented HRIS. The results show that HRIS implementation has a significant impact on improving operational efficiency and HR governance. HRIS facilitates centralized employee data integration, automates administrative processes, and provides analytical data for strategic decision-making. Furthermore, this system also supports more targeted employee competency and career development and strengthens higher education institutions' digital transformation efforts. Thus, HRIS plays a crucial role not only in improving HR management efficiency but also in realizing modern, transparent, and highly competitive higher education governance.</p>
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INTRODUCTION

In the ever-evolving digital era, information technology has brought significant changes to almost all aspects of life, including human resource (HR) management in various organizations (Wahyudi et al., 2023). Digital transformation requires companies to adapt to more sophisticated, efficient, and integrated systems to improve performance and competitiveness in the global market. Efficient and effective HR management is now a key factor in organizational success, not only in administrative matters but also in employee development and retention strategies (Kirana et al., 2023).

In this context, the Human Resource Information System (HRIS) presents itself as a technological innovation capable of optimizing various HR management functions, from recruitment and payroll processes, performance evaluations, to real-time and accurate employee data management (Abdullah et al., 2024). HRIS enables companies to make data-driven decisions, reduce manual errors, and increase operational time and cost efficiency. Thus, HRIS implementation not only supports administrative activities but also serves as a strategic instrument for strengthening HR governance in the digital era (Setianingrum, 2024).

Human Resource Information System (HRIS) technology is a system designed to integrate all data and processes related to human resources into a single, centralized,

computerized platform (Kinasih & Azhar, 2025). Through this system, various HR management activities, such as employee data recording, job information management, recruitment processes, performance appraisals, and training and development, can be carried out automatically and systematically (Rohmat & Nuriyah, 2023). HRIS also plays a crucial role in maintaining the consistency and security of employee data, as all information is stored in an easily accessible yet secure database. This integration makes it easier for HR managers to monitor employee development, identify training needs, and manage personnel administration more quickly and efficiently (Pratama & Ali, 2024).

The implementation of HRIS has a significant impact on increasing a company's operational efficiency. With an automated system, various administrative tasks that previously took a long time can now be completed more quickly and accurately (Hanafi & Anwar, 2023). Furthermore, HRIS also supports data-driven decision-making, allowing management to analyze performance trends, absenteeism rates, and workforce needs in real time. This enables companies to formulate more targeted HR strategies that are responsive to changes in the business environment (Lubis & Adlina, 2025).

Increasing competition is now not only occurring in the commercial sector but also extends to the world of education, including higher education institutions. Universities are required to compete by producing quality graduates, providing superior educational services, and optimally managing their resources (Abdillah, 2024). In this context, human resource (HR) management is a crucial aspect because HR is the primary driving force behind all academic and administrative activities. A higher education institution's ability to effectively manage lecturers, educational staff, and administrative staff will directly impact the institution's performance and reputation at the national and global levels (Indriati et al., 2023).

According to Mesiono (2024), for higher education institutions to survive and thrive, they must be able to adapt to the dynamic changes of the times, particularly in the use of information technology. One strategic step that can be taken is to implement a Human Resource Information System (HRIS) as a support system for HR management. HRIS enables universities to manage personnel data, recruitment processes, performance evaluations, and competency development of teaching and administrative staff more efficiently and transparently. Implementing an HRIS simplifies administrative processes, minimizes human error, and allows for quick and accurate strategic decisions related to HR management (Muhammad & Niki, 2018).

Research conducted by Raflian (2022) shows that implementing a Human Resource Information System (HRIS) can increase efficiency in human resource management through the automation of administrative processes and the integration of employee data. The results confirm that HRIS helps reduce administrative workloads, improves data accuracy, and accelerates HR decision-making. These findings reinforce the importance of implementing an HRIS as part of a digital HR management strategy across various organizations.

Furthermore, research by Sumanti (2024) revealed that the success of HRIS implementation is highly dependent on the organization's readiness and user competence in utilizing the technology. HRIS functions not only as an administrative tool but also as a decision support system that plays a strategic role in developing HR policies. In the context

of educational institutions, Siswanto et al. (2018) demonstrated that the use of HRIS in higher education can improve the effectiveness of teaching staff management, accelerate the recruitment process, and increase transparency in the career management of lecturers and administrative staff.

The novelty of this research lies in its focus on examining the role of HRIS technology in improving the efficiency of human resource management in higher education environments, a context rarely studied in-depth compared to the corporate or industrial sectors. This research not only addresses the technical aspects of HRIS implementation but also highlights how the system supports digital transformation in academic and administrative HR governance in higher education.

METHOD

This study uses a qualitative method with a descriptive approach to deeply understand the role of Human Resource Information System (HRIS) technology in improving the efficiency of human resource management at several universities in Bandung City. This approach was chosen because it is able to describe the phenomenon realistically based on the experiences and views of HR management practitioners directly involved in HRIS implementation. Research informants were determined using a purposive sampling technique, selected based on their relevance and involvement in HRIS management, such as the head of personnel, HR staff, and teaching and administrative staff. Data were collected through in-depth interviews, direct observation, and documentation of HRIS-based HR management activities at the universities. Data analysis was carried out interactively through the processes of data reduction, data presentation, and drawing conclusions. To ensure the validity of the results, this study used triangulation of sources and methods, by comparing the results of interviews, observations, and supporting documents. (Nasution, 2023) Through this method, the study is expected to provide a comprehensive picture of the effectiveness of HRIS use in improving the efficiency of HR management at universities in Bandung City.

RESULT AND DISCUSSION

Human resource (HRM) management efficiency through the implementation of a Human Resource Information System (HRIS) refers to an organization's ability to increase the effectiveness and speed of HR management processes by utilizing integrated information technology. HRIS enables various administrative activities such as recruitment, payroll, attendance recording, and performance evaluation to be carried out automatically and systematically. With this system, previously manual work can be completed more quickly, accurately, and efficiently, thereby reducing the potential for human error and administrative workload. Furthermore, HRIS supports transparency and consistency in employee data management because all information is stored in a single database that is easily accessible to relevant parties.

Furthermore, the use of HRIS adds value to data-driven decision-making. Through real-time data analysis, management can identify employee performance trends, training needs,

and the effectiveness of HR policies more accurately and quickly. This not only improves overall organizational productivity but also helps create a more efficient and adaptive work culture. Thus, HRIS HR management efficiency is not simply about saving time and money, but also about digital transformation that strengthens the strategic function of HR management in achieving organizational goals. So, what is the role of HRIS in HR efficiency in higher education? Based on observations and interviews with several stakeholders at higher education institutions in Bandung that have implemented HRIS, the following findings were obtained. The following is an explanation:

1. Integration of HR Data and Information

Integration of human resource (HR) data and information is one of the primary functions of implementing a Human Resource Information System (HRIS) in higher education institutions. HRIS serves as an integrated system that manages all personnel information, from lecturer and administrative staff data, employment status, training history, performance appraisals, to compensation and career development. In an academic context, this integration refers to the process of combining various data sources into a single, centralized system to ensure consistency, accuracy, and efficiency in information management (Dessler, 2020). Thus, HRIS functions not only as a repository for administrative data but also as a knowledge base that supports managerial processes in higher education.

Furthermore, data integration through HRIS facilitates management's monitoring, analysis, and strategic decision-making related to HR management. For example, lecturer performance data recorded in the system can be quickly accessed for functional position assessments or promotion planning. Similarly, data on attendance, training, and competency of educational staff can be used to determine employee capacity building needs. Academically, this integration concept aligns with management information systems theory, where the system functions as a cross-functional coordination tool for achieving work efficiency and effectiveness (Laudon & Laudon, 2018).

Furthermore, HRIS data integration also has implications for improving the quality of institutional governance (good governance). With a centralized system, the risk of data duplication and input errors can be minimized, resulting in more accurate and accountable information. This is crucial in the context of higher education institutions that demand transparency and accountability in every personnel administration process. Integrated data also enables better collaboration between work units, such as personnel, academic, and finance, all of which depend on the accuracy of HR data.

2. Administrative Process Automation

Automation of administrative processes is one of the key contributions of implementing a Human Resource Information System (HRIS) in improving the efficiency of human resource management, including in higher education environments. HRIS enables various administrative activities previously performed manually—such as recruitment, payroll, attendance recording, performance appraisals, and leave requests—to be carried out automatically through an integrated digital system. According to Mondy and Martocchio (2016), automation in HRIS systems serves to reduce human involvement in routine administrative activities, thereby minimizing errors, accelerating processes, and saving work

time. In the context of higher education, this means that personnel staff no longer need to manually manage data but can instead utilize the system to update, verify, and monitor personnel information more efficiently.

In addition to increasing speed and accuracy, HRIS automation also impacts the overall quality of HR management. For example, an HRIS-based recruitment system can automatically screen applicants based on predetermined qualifications, thereby accelerating the selection process for prospective lecturers or educational staff. Similarly, a computerized performance appraisal system allows evaluation results to be compiled objectively based on well-documented data. This supports the principles of transparency and accountability in HR management, as emphasized by Rivai and Sagala (2013), who argued that administrative automation is not only about efficiency but also about increasing fairness and professionalism in performance management systems.

Furthermore, automating administrative processes through HRIS also enables universities to implement work systems that are more adaptive to developments in digital technology. With HRIS, administrative activities such as leave requests, payroll, and attendance reporting can be conducted online, supporting work flexibility in a dynamic academic environment. This automated system also generates real-time data that can be directly analyzed by management for strategic decision-making purposes, such as workforce planning and faculty workload management. Thus, the automation provided by HRIS not only improves operational efficiency but also strengthens the strategic role of the HR unit as a crucial partner in achieving the university's vision and mission in the digital era.

3. Increased Operational Efficiency

The implementation of a Human Resource Information System (HRIS) directly contributes to increased operational efficiency in human resource management in higher education institutions. Through an integrated digital system, various HR administrative processes can be carried out more quickly and systematically, thereby saving time and operational costs. HRIS replaces manual processes that previously required extensive labor and physical documents, with an automated system capable of processing data in real time and centrally. According to Dessler (2020), operational efficiency in HR management is achieved when organizations are able to utilize technology to optimize resources and minimize wasted time and effort in carrying out administrative tasks. In this context, HRIS is a crucial instrument in helping higher education institutions achieve this efficiency.

In addition to saving time, HRIS can also reduce operational costs arising from conventional administrative activities. For example, by digitizing payroll processes, attendance recording, and employee data management, universities no longer require extensive resources for repetitive administrative tasks. HRIS systems enable workflow automation, reducing reliance on printed documents and accelerating communication between units. This aligns with the findings of Turban et al. (2018), who stated that utilizing a management information system can create organizational efficiency by reducing transaction costs and increasing workforce productivity. Thus, HRIS is not only an administrative tool but also a sustainable efficiency strategy for higher education institutions.

Furthermore, the operational efficiency resulting from HRIS implementation also allows HR staff to shift from routine administrative tasks to more strategic roles. By reducing the burden of manual work, HR staff can focus on value-added activities, such as career development planning, employee competency development, and formulating HR policies aligned with institutional goals. This situation reinforces Ulrich's (2015) view, which states that the modern HR function should transform from an administrative role to a strategic one oriented toward organizational development. Therefore, HRIS implementation in higher education is not only about time and cost efficiency, but also about enhancing the strategic role of HR management in supporting institutional competitiveness and sustainability in the digital era.

4. Support for Data-Driven Decision-Making

One of the main advantages of implementing a Human Resource Information System (HRIS) is its ability to provide real-time data and analytical reports that can be used as a basis for managerial decision-making. HRIS collects and processes various types of personnel data—from personal information, employment history, attendance, to performance appraisal results—which are then presented in comprehensive and easy-to-understand reports. According to Laudon and Laudon (2018), management information systems such as HRIS play a crucial role in supporting data-driven decision-making, which is a decision-making process based on objective data analysis, rather than mere intuition or assumptions. In the context of higher education, this capability significantly assists management in planning workforce needs, managing lecturer workloads, and ensuring effective and efficient HR policies.

Furthermore, HRIS enables in-depth analysis of employee performance trends and patterns over time, allowing management to identify potential problems and take appropriate strategic steps. For example, lecturer absence and productivity data can be used to assess workload balance and the need for additional training. HRIS also helps universities assess the effectiveness of HR development programs and determine promotion strategies based on systematically documented performance data. Thus, this system serves not only as an administrative tool but also as a source of strategic information that strengthens evidence-based decision-making processes (evidence-based management). This aligns with Armstrong and Taylor (2020), who stated that HRIS improves the quality of management decisions by providing access to relevant, accurate, and timely data.

Furthermore, supporting data-driven decision-making through HRIS also implies increased transparency and accountability within higher education institutions. Decisions made based on measurable data are more easily accounted for, both internally to institutional leaders and externally to stakeholders such as the government and accreditation bodies. Furthermore, open yet controlled access to data encourages collaboration between units, for example, between academic, finance, and personnel departments, in formulating HR development policies. Thus, HRIS not only strengthens HR management efficiency but also fosters a culture of rational, transparent decision-making oriented toward sustainable organizational performance improvement.

5. Employee Competency and Career Development

HRIS plays a crucial role in supporting employee competency development and career planning in higher education institutions. This system stores data related to the educational history, work experience, performance appraisal results, and training attended by lecturers and administrative staff in a structured and easily accessible manner. This information serves as the basis for HR departments to identify training needs and develop development programs tailored to employee potential and positions. According to Mathis and Jackson (2019), systematic HR data management through HRIS enables organizations to tailor training strategies to individual needs and institutional goals, making competency development processes more effective and targeted.

Furthermore, HRIS helps universities plan clearer and more measurable career paths for their employees. Individual performance and achievement data can be analyzed to determine opportunities for promotion, job rotation, or advancement to specific strategic positions. Thus, career development decisions are no longer subjective, but rather based on performance indicators and objective data available within the system. This supports fairness and transparency in employee career management, as Dessler (2020) notes that HRIS systems can increase employee engagement because employees feel they have fair, merit-based career opportunities.

Furthermore, HRIS also serves as a strategic tool for maintaining the sustainability of human resource development in higher education institutions. With accurate competency mapping, institutions can anticipate future teaching and administrative staff needs and prepare succession planning programs for key positions. This approach aligns with the principles of strategic human resource management, which emphasizes that human resource development must be integrated with the organization's long-term vision. Therefore, implementing HRIS not only improves administrative efficiency but also strengthens the foundation for sustainable employee competency and career development to support higher education institutions' competitiveness in the digital era.

6. Supporting Digital Transformation in Higher Education

The implementation of a Human Resource Information System (HRIS) is a strategic step in supporting digital transformation in higher education. In this fast-paced digital era, higher education institutions are required to adapt to developments in information technology to create modern and efficient governance. HRIS plays a crucial role in digital transformation because it integrates various human resource management functions into a single, centralized digital platform. According to Al-Emran et al. (2020), the implementation of information technology in educational institutions not only improves administrative efficiency but also strengthens the organization's capacity to respond adaptively to environmental changes. Thus, HRIS serves as a crucial foundation for higher education institutions to move towards more responsive and sustainable technology-based governance.

More than just an administrative tool, HRIS also strengthens institutional governance by increasing transparency, data accuracy, and accountability in HR management. This system enables higher education leaders to monitor employee performance in real time, assess organizational needs, and conduct data-driven strategic planning. This integration

reflects good governance practices in the digital era, where every decision is based on valid and documented information. Consistent with the opinion of Westerman et al. (2014), effective digital transformation in educational institutions encompasses not only technology adoption but also a shift in work culture toward more transparent and data-driven decision-making. With HRIS, universities can strengthen their management systems toward a more efficient, accountable, and competitive model.

In addition to improving efficiency and governance, HRIS implementation also contributes to the image and competitiveness of universities at the national and global levels. Institutions that successfully implement digital systems will more easily adapt to international standards, including accreditation, performance reporting, and technology-based HR management. HRIS supports the creation of a smart campus ecosystem, where all administrative and strategic processes are integrated and efficient. Thus, HRIS is not only an operational support instrument but also a key driver of digital transformation, leading universities toward modern governance, high competitiveness, and readiness to face the challenges of the Industrial Revolution 4.0 era.

The six points above can be summarized in a table, highlighting the role of HRIS in improving the efficiency of human resource management in higher education institutions;

Tabel 1 Peran HRIS dalam Efisiensi MSDM di Perguruan Tinggi

No.	HRIS Role Aspects	Description Academic	Impact to Efficiency
1	HR Data and Information Integration	Merge all personnel data to in One system centralized For avoid duplication and data errors.	Quick access to information and data accuracy increases.
2	Administrative Process Automation	Automate recruitment, attendance, payroll, and assessment performance.	More process fast, cost reduced, and human error decreased.
3	Improvement Efficiency Operational	Save time and cost operational through digitalization HR services.	Productivity increased and HR staff can focus on the task strategic.
4	Data -Driven Decision Making	Provide report real-time analytics for planning power work and evaluation performance.	More decisions precise, objective, and based proof.
5	Development Employee Competence and Career	Monitoring need training and compiling plan career lecturer as well as power education.	Improvement competence and fairness in promotion position.
6	Support Digital Transformation	Part of effort towards modern and empowered governance global competitiveness.	Realization digital, efficient, and adaptive HR management.

CONCLUSION

Based on the explanation presented, it can be concluded that the implementation of a Human Resource Information System (HRIS) plays a crucial role in improving the efficiency of human resource management in higher education institutions. Through the integration of personnel data, automation of administrative processes, and support for data-driven decision-making, HRIS can create a faster, more accurate, and more transparent HR management system. The resulting efficiencies not only result in time and cost savings but also enable HR staff to shift to more strategic functions, such as career development planning, competency development, and the formulation of quality-oriented institutional policies. Thus, HRIS becomes a crucial instrument in realizing professional, effective, and sustainable HR governance in higher education. Furthermore, HRIS implementation is also an integral part of the digital transformation process in higher education institutions, fostering modern and globally competitive institutional governance. Universities that successfully utilize HRIS optimally will not only achieve operational efficiency but also strengthen a technology- and data-driven work culture. In the long term, this will contribute to improving the quality of educational services, developing superior human resources, and preparing institutions to face the challenges of the digital era. Therefore, the implementation of HRIS needs to be continuously developed and adapted to the needs and dynamics of the organization so that it can become the main foundation in realizing a higher education institution that is adaptive, innovative, and highly competitive.

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