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Human Resource Information Systems and Organizational Performance: The Mediating Role of Digital Competence in Private Higher Education Institutions in Makassar

Andi Irsandi Yusri [(1)] Amar Sani [(2)] Muhammad Difky Al Qadri [(3)] Reza Fadel Muhammad [(4)] Firisqi Nuryanti[(5)], Ilmi Ifayanti [(6)]*

[(1)] Department of Digital Business, STIE AMKOP Makassar, Makassar, Indonesia
[(2,3,5)] Department of Management, STIE AMKOP Makassar, Makassar, Indonesia
[(4)] Department of Entrepreneurship, STIE AMKOP Makassar, Makassar, Indonesia

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*Corresponding author.
E-mail addresses: amar@stieamkop.ac.id

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ABSTRACT

Digital transformation has encouraged higher education institutions to optimize the implementation of Human Resource Information Systems (HRIS) to improve human resource management and organizational performance. However, the effectiveness of HRIS implementation depends not only on system quality but also on users' digital competence in utilizing technology effectively. This study aims to examine the effect of Human Resource Information System (HRIS) on organizational performance through digital competence in private higher education institutions in Makassar, Indonesia. This study employed a quantitative approach using a survey method involving 200 lecturers and administrative staff selected through purposive sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The findings reveal that Human Resource Information System (HRIS) has a positive and significant effect on digital competence. Digital competence also has a positive and significant effect on organizational performance. Furthermore, HRIS directly influences organizational performance. The mediation analysis indicates that digital competence partially mediates the relationship between HRIS and organizational performance. These findings suggest that organizational performance improvement is determined not only by the implementation of information technology but also by the capability of human resources to utilize digital technology effectively. This study contributes to the development of digital human resource management literature and provides practical implications for private higher education institutions in optimizing HRIS implementation through the enhancement of digital competence.

Introduction

Digital transformation has evolved beyond the mere adoption of technology into a strategic change encompassing work processes, organizational structures, culture, and human resource development. In higher education, this transformation extends beyond teaching and learning to include academic governance, administration, data management, student services, and human resource management. Higher education institutions are therefore required to establish digital ecosystems capable of enhancing efficiency, flexibility, service quality, and decision-making accuracy. However, the success of digital transformation is not determined solely by technological availability; it also depends on organizational readiness and users' capabilities (Zhao et al., 2021). Studies on digital transformation in higher education have further identified human resource competencies, leadership, infrastructure, and governance as interconnected determinants of successful digital change (Wang et al., 2023).

These developments have encouraged higher education institutions to integrate various digital platforms, including the Higher Education Database (Pangkalan Data Pendidikan Tinggi—PDDIKTI), the

Integrated Resource Information System (Sistem Informasi Sumber Daya Terintegrasi—SISTER), learning management systems (LMS), academic information systems (Sistem Informasi Akademik—SIAKAD), and human resource information systems (HRIS). Such integration is essential because higher education institutions manage complex datasets encompassing faculty members, administrative staff, teaching and learning activities, research, community engagement, and student services. Integrated educational technologies can accelerate information exchange and facilitate more adaptive institutional governance. Nevertheless, these benefits can only be realized when digital systems are employed strategically rather than merely as administrative tools (Aripradono, 2024). Digital transformation in higher education should therefore be directed toward developing data-driven governance and strengthening institutional capabilities to respond effectively to environmental changes.

A central component of this transformation is the digitalization of human resource management. In this context, HRIS refers to an integrated system for collecting, storing, processing, and providing human resource information to support both the operational and strategic functions of an organization. HRIS may encompass personnel administration, recruitment, competency development, payroll, attendance, performance appraisal, career planning, and workforce-needs analysis. Its implementation enables organizations to reduce repetitive administrative tasks, improve data accuracy, accelerate service delivery, and provide relevant information for managerial decision-making (Satispi et al., 2023). HRIS has also become a foundation for human resource analytics because it generates data that can be used to identify performance patterns and support workforce planning (Cho et al., 2023).

Accordingly, HRIS should no longer be regarded merely as an administrative automation tool but as a strategic organizational resource. Its effective utilization can enhance transparency, accountability, interdepartmental coordination, and the quality of managerial decisions. Nyathi and Kekwaletswe (2022) found that electronic human resource management positively affects employee and organizational performance, with employee performance serving as a mechanism that strengthens performance outcomes at the organizational level. Similarly, Alebiosu et al. (2023) demonstrated that HRIS utilization can improve employee behavioral outcomes, including job satisfaction, organizational commitment, and work engagement. These findings indicate that the strategic value of HRIS is derived not only from its technological features but also from the behavioral and work-process changes it generates among users.

Nevertheless, implementing a digital system does not automatically improve organizational performance. Even a system equipped with sophisticated features may produce limited outcomes when it is misaligned with user needs, inadequately integrated into organizational processes, or unsupported by sufficient competencies. Research on e-HRM indicates that technology frequently contributes to organizational advantage through improvements in innovation, organizational agility, employee engagement, and decision-making capabilities (Elayan et al., 2023). Some studies have even found that the direct relationship between e-HRM and organizational performance is not always statistically significant. These findings suggest that HR technology requires an intervening mechanism capable of transforming system utilization into enhanced work capabilities and tangible organizational outcomes.

This issue is particularly relevant to private higher education institutions, which face increasing pressure to improve governance efficiency, service quality, accountability, and institutional competitiveness. Although various applications have been adopted to manage academic and human resource data, their utilization may remain fragmented and predominantly oriented toward administrative compliance. Under such conditions, digital systems tend to be used primarily for data entry and reporting rather than for generating strategic information to support planning, performance evaluation, and employee development. Studies of digital transformation in Indonesian education similarly demonstrate that scholarly attention remains concentrated on online learning and

pedagogical technologies, with comparatively limited emphasis on governance transformation and the digitalization of human resource management functions (Fuadiy et al., 2025).

This situation reveals a gap between technological ownership and an organization's capacity to derive value from technology. Infrastructure and applications merely provide the potential for value creation, whereas the realization of such value depends on users' ability to operate digital systems, evaluate digital information, and apply the resulting insights. HRIS implementation should therefore be examined in conjunction with digital competence as a critical dimension of human readiness for organizational transformation. Digital competence encompasses the ability to access and manage information, communicate and collaborate through technology, create digital content, protect data, and solve problems using digital tools (Zhao et al., 2021). Within higher education institutions, these competencies are required not only by administrative staff but also by faculty members and institutional leaders.

Digital competence enables users to understand HRIS functions, maintain data quality, independently utilize system features, and translate system-generated information into organizational decisions and actions. Huu (2023) found that digital competence strengthens the relationship between technology adoption and various work-related outcomes, including creativity, learning, and knowledge sharing. In higher education, the digital competence of faculty members also contributes to enhancing students' perceived learning value (Dang et al., 2024). These findings suggest that digital competence extends beyond the technical ability to operate digital devices. Instead, it represents a broader capability through which technology creates value for individuals and organizations.

This relationship can be explained through the socio-technical systems perspective, which views organizational performance as the product of alignment between technological and social systems. HRIS represents a technological resource, whereas digital competence reflects the human capacity required to adopt and effectively utilize that resource. Misalignment between these elements can result in underutilized systems, data-management errors, user resistance, and excessive dependence on particular system operators. Conversely, alignment between system capabilities and users' digital competence can enhance work effectiveness, coordination, innovation, and decision-making quality. Al-Faouri et al. (2024) emphasized that technology application can improve innovation performance when accompanied by intelligent human resource management practices that support its effective utilization.

Previous studies have generally reported a positive relationship between HRIS or e-HRM and organizational performance. Digital systems can reduce administrative costs, accelerate personnel-related processes, improve access to information, and strengthen the consistent implementation of human resource policies. Nevertheless, empirical findings remain inconclusive. Nyathi and Kekwaletswe (2022) identified a positive effect of e-HRM on organizational performance, whereas other studies have found no significant direct relationship when e-HRM fails to enhance employee engagement or when its implementation quality is inadequate. Raja and Devi (2025) likewise demonstrated that the effect of HRIS on organizational performance depends on system acceptance, the visibility of its benefits, and implementation conditions. The relationship between HRIS and organizational performance is therefore neither uniformly direct nor universally applicable across organizational contexts.

Other studies have explained this relationship through different mediating variables. Elayan et al. (2023) examined sustainable innovation and organizational agility as mediators, whereas Nyathi and Kekwaletswe (2022) positioned employee performance as the mediating mechanism. Meanwhile, studies of digital competence have predominantly treated it as a predictor of creativity, productivity, adaptability, or service quality rather than as a mechanism through which HRIS utilization improves organizational performance. Nevertheless, digital HRM practices can strengthen employees' perceived digital competence when their implementation is supported by a conducive organizational culture

(Zervas et al., 2025). This finding suggests that HRIS not only requires digital competence but may also function as a learning mechanism through which employees develop such competence through continuous engagement with digital technologies.

Based on previous findings, several research gaps warrant further investigation. First, prior studies have reported inconsistent findings regarding the direct effects of HRIS or e-HRM on organizational performance. Such inconsistencies suggest that system ownership and utilization do not necessarily improve performance unless organizations possess the internal capabilities required to translate digital information into productive action. Second, previous studies have primarily examined employee engagement, innovation, organizational agility, or individual performance as mediating variables, whereas digital competence has rarely been positioned as a mediator between HRIS and organizational performance. Third, HRIS research has predominantly been conducted in manufacturing companies, banks, government institutions, telecommunications companies, and service industries, while private higher education institutions remain relatively underexplored. Fourth, the literature on digital transformation in higher education has focused primarily on teaching, learning, and pedagogical competence rather than on the digitalization of human resource management.

This study is theoretically relevant because it integrates the HRIS, digital competence, and organizational performance literature into a unified conceptual framework. Such integration is necessary to explain that technology does not automatically generate performance outcomes but must first be internalized as users' digital capabilities. From a practical perspective, this study is relevant to private higher education institutions in Makassar because it provides a basis for evaluating whether investments in HRIS have been accompanied by the development of digital capabilities among faculty members, administrative staff, and institutional managers. This focus is particularly important because digital transformation in higher education requires a balance between strengthening technological infrastructure and developing human capacity (Mei et al., 2023).

The novelty of this study lies in developing an integrative framework that positions digital competence as a mediating mechanism in the relationship between HRIS and organizational performance within private higher education institutions. Unlike previous studies that have emphasized either the direct effects of HRIS or organizational-level mediators, this study proposes a human-centered process. Specifically, HRIS implementation provides users with access to, experience with, and exposure to digital information management; this process enhances their digital competence; and improved digital competence subsequently enables them to utilize HRIS more effectively in support of organizational performance. Thus, this study argues that the value generated by HRIS depends not only on the sophistication of the system but also on its capacity to develop the digital capabilities that connect technological resources with organizational outcomes.

Based on the preceding discussion, this study aims to review and synthesize previous research on the relationships among HRIS, digital competence, and organizational performance and to develop a conceptual framework relevant to private higher education institutions in Makassar. This review is expected to extend the digital human resource management literature by establishing digital competence as the missing link between technological investment and organizational performance. Practically, its findings may encourage higher education institutions not only to invest in digital applications but also to develop data literacy, system-use proficiency, digital security awareness, and information-based decision-making capabilities.

Hypothesis significance will be assessed through a bootstrapping procedure at the 5% significance level ($p < 0.05$). The mediating effect of digital competence will be examined by testing the significance of the indirect effect using the bootstrapping results.

The conceptual model comprises one independent variable, namely HRIS; one mediating variable, namely digital competence; and one dependent variable, namely organizational performance. Based on this model, the following hypotheses are proposed:

H1: Human Resource Information Systems have a positive effect on digital competence.
H2: Digital competence has a positive effect on organizational performance.
H3: Digital competence mediates the effect of Human Resource Information Systems on organizational performance.

Research Design and Methodology

This study employs a quantitative approach using a survey method to examine the relationships among Human Resource Information Systems (HRIS), digital competence, and organizational performance in private higher education institutions in Makassar. A quantitative approach was selected because it enables the causal relationships among the variables to be tested statistically using data collected from respondents. The study population comprises faculty members and administrative staff employed by private higher education institutions in Makassar who use information systems to perform academic or administrative duties. These respondents were selected because they directly interact with various digital systems, including HRIS, the Integrated Resource Information System (Sistem Informasi Sumber Daya Terintegrasi—SISTER), personnel management information systems (Sistem Informasi Manajemen Kepegawaian—SIMPEG), learning management systems (LMS), and other digital applications used to support human resource management in higher education institutions.

The respondents will be selected using purposive sampling based on the following criteria: (1) being permanently employed as a faculty member or administrative staff member; (2) having worked at the institution for at least one year; and (3) using or interacting with an HRIS or personnel information system in the performance of their duties. These criteria are intended to ensure that respondents have sufficient experience to assess HRIS implementation within their respective institutions. The sample size will be determined according to the requirements of partial least squares structural equation modeling (PLS-SEM), with a target of approximately five to ten respondents per indicator. Given an estimated 24–30 indicators, the recommended sample size ranges from 150 to 300 respondents, which is expected to provide sufficient statistical power for structural model analysis.

Primary data will be collected through a questionnaire developed by adapting indicators from previous studies. Each item will be measured using a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Before its full-scale administration, the questionnaire will undergo content validity assessment by experts and a pilot test to evaluate the clarity and comprehensibility of its items.

The HRIS construct will be adapted from previous studies on the effectiveness of human resource information systems. It will measure respondents' perceptions of system quality, information quality, ease of use, integration of human resource processes, and the benefits of HRIS in supporting their work. Digital competence will be measured through respondents' ability to operate digital technologies, manage digital information, communicate and collaborate through technology, and use digital tools to perform their duties effectively. Organizational performance will be assessed based on respondents' perceptions of work-process effectiveness, service quality, operational efficiency, organizational productivity, and institutional goal attainment.

The data will be analyzed using PLS-SEM with SmartPLS software. The analysis will be conducted in two stages. The first stage will evaluate the measurement model (outer model), including convergent validity based on outer loading values greater than 0.70 and average variance extracted (AVE) values greater than 0.50. Discriminant validity will be assessed using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT). Construct reliability will be evaluated using composite reliability (CR) and Cronbach's alpha, with values greater than 0.70 considered acceptable.

The second stage will evaluate the structural model (inner model) using the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and path coefficients.

Findings and Discussion

Respondent Characteristics

A total of **200 respondents** participated in this study, consisting of lecturers and educational staff from various private universities in Makassar City. Respondent characteristics are presented in Table

Table 1. Respondent Characteristics (n = 200)

Characteristics	Category	Frequency	Percentage (%)
Gender	Man	112	56.0
	Woman	88	44.0
Age	≤ 30 Years	32	16.0
	31–40 Years	78	39.0
	41–50 Years	56	28.0
	> 50 Years	34	17.0
Last education	S1	48	24.0
	S2	118	59.0
	S3	34	17.0
Employee Status	Lecturer	138	69.0
	Educational Personnel	62	31.0
Years of service	< 5 Years	41	20.5
	5–10 Years	73	36.5
	> 10 Years	86	43.0

Source: Processed primary data, 2026.

Based on Table 1, the research respondents were dominated by men, amounting to 112 people (56.0%), while female respondents amounted to 88 people (44.0%). Based on age group, the majority of respondents were in the 31–40 years range, amounting to 78 people (39.0%), followed by the 41–50 years age group, amounting to 56 people (28.0%), the age group over 50 years, amounting to 34 people (17.0%), and the age group of 30 years or less, amounting to 32 people (16.0%).

In terms of education level, the majority of respondents had a Masters (S2) degree (118 people) (59.0%), followed by Bachelor's (S1) graduates (48 people) (24.0%) and Doctoral (S3) graduates (34 people) (17.0%). Based on employment status, this study was dominated by lecturers (138 people) (69.0%), while education staff numbered 62 people (31.0%). Meanwhile, based on length of service, the majority of respondents had worked for more than 10 years (86 people) (43.0%), followed by a work period of 5–10 years (73 people) (36.5%) and less than 5 years (41 people) (20.5%).

The composition of the respondents indicates that the majority of the study participants were educators and administrative staff with adequate education and work experience. Given these characteristics, the respondents were deemed experienced in using Human Resource Information Systems (HRIS) and other digital systems in higher education, thus enabling them to provide relevant information in line with the research objectives.

Descriptive Statistics of Variables

Descriptive statistical analysis was conducted to provide an overview of respondents' perceptions of the Human Resource Information System (HRIS), Digital Competence, and Organizational Performance variables. Descriptive statistics include minimum, maximum, mean , and standard deviation *values* , as presented in Table 2.

Table 2. Descriptive Statistics of Research Variables

Variables	Minimum	Maximum	Mean	Standard Deviation	Category
Human Resource Information System (HRIS)	2.31	4.96	4.18	0.47	Tall
Digital Competence	2.45	5.00	4.26	0.44	Very high
Organizational Performance	2.58	4.98	4.21	0.46	Tall

Source: Processed primary data, 2026.

Based on Table 2, all research variables had an average value above 4.00, indicating that respondents' perceptions of Human Resource Information System (HRIS) implementation, digital competence, and organizational performance were in the high to very high category. The Digital

Competence variable had the highest average value of 4.26, followed by Organizational Performance at 4.21, and Human Resource Information System (HRIS) at 4.18.

The standard deviation values for all variables were below 1.00, indicating that respondents' responses were relatively homogeneous and there were no significant differences between respondents. This indicates that respondents' perceptions of HRIS implementation, digital competency levels, and organizational performance tended to be consistent. In general, the descriptive statistics provide an indication that digital transformation in private universities in Makassar City has been positively responded to by lecturers and educational staff, although the effectiveness of the relationships between variables still needs to be proven through structural model testing using SEM-PLS.

Evaluation of Measurement Model (Outer Model)

Evaluation of the measurement model (*outer model*) was conducted to test the quality of the research instrument through convergent validity and construct reliability testing. Convergent validity was assessed based on **the Average Variance Extracted (AVE) value** , while construct reliability was evaluated using **Cronbach's Alpha** and **Composite Reliability (CR)** . A construct is declared to meet convergent validity if it has an AVE value above 0.50, while construct reliability is declared good if the Cronbach's Alpha and Composite Reliability values are greater than 0.70.

Table 3. Results of Convergent Validity and Construct Reliability Tests

Variables	Number of Indicators	AVE	Cronbach's Alpha	Composite Reliability	Information
Human Resource Information System (HRIS)	8	0.691	0.936	0.947	Valid and Reliable
Digital Competence	7	0.714	0.933	0.945	Valid and Reliable
Organizational Performance	8	0.702	0.940	0.949	Valid and Reliable

Source: Processed primary data, 2026.

Based on Table 3, all research constructs have an Average Variance Extracted (AVE) value above 0.50, indicating that each construct has met the convergent validity criteria. The AVE values ranged from 0.691 to 0.714, thus concluding that each construct is able to explain more than 50% of the variance of the indicators that form it.

Furthermore, all constructs demonstrated excellent reliability. Cronbach's Alpha values ranged from 0.933 to 0.940, while Composite Reliability values ranged from 0.945 to 0.949, all exceeding the minimum threshold of 0.70. These results indicate that the research instrument has a high level of internal consistency and is suitable for use in structural model analysis.

Discriminant Validity Test

After all constructs have met convergent validity and reliability, the next step is to test discriminant validity to ensure that each construct has an adequate level of differentiation from the other constructs. Testing is conducted using the Heterotrait-Monotrait Ratio (HTMT) method. A construct is considered to have met discriminant validity if the HTMT value is below the 0.90 threshold.

Table 4. Results of the Discriminant Validity Test (HTMT)

Variables	HRIS	Digital Competence	Organizational Performance
Human Resource Information System (HRIS)	-		
Digital Competence	0.731	-	
Organizational Performance	0.684	0.792	-

Source: Processed primary data, 2026.

Based on Table 4, all HTMT values are below the maximum limit of 0.90. The correlation value between HRIS and Digital Competence is 0.731, the correlation between HRIS and Organizational Performance is 0.684, while the correlation between Digital Competence and Organizational Performance is 0.792. These results indicate that each construct has good discriminant validity because it is able to measure different concepts from each other.

By meeting convergent validity, construct reliability, and discriminant validity, all research instruments were declared suitable for use in testing the structural model (*inner model*). The next stage was to evaluate the model's ability to explain the relationships between variables through coefficient of determination analysis and hypothesis testing.

Structural Model Evaluation (*Inner Model*)

Structural model evaluation (*inner model*) was conducted to determine the model's ability to explain endogenous variables and to evaluate the research model's predictive ability. Testing was conducted using the coefficient of determination (R^2) and *predictive relevance* (Q^2) *values. The* R^2 value indicates the extent of variation in endogenous variables that can be explained by exogenous variables in the model, while the Q^2 *value* is used to assess the model's predictive ability. The results of the structural model evaluation are presented in Table 5.

Table 5. Structural Model Evaluation Results

Endogenous Variables	R^2	Q^2	Interpretation
Digital Competence	0.563	0.382	Moderate
Organizational Performance	0.687	0.471	Strong

Source: Processed primary data, 2026.

Based on Table 5, the Digital Competence variable has an R^2 value of 0.563, indicating that 56.3% of the variation in digital competency can be explained by the implementation of the Human Resource Information System (HRIS), while the remaining 43.7% is influenced by other factors outside the research model. This value indicates that the model has moderate explanatory power.

Meanwhile, the Organizational Performance variable obtained an R^2 value of 0.687, meaning that 68.7% of the variation in organizational performance can be explained by the combination of HRIS and Digital Competence variables, while the remaining 31.3% is influenced by other variables not included in the research model. This value indicates that the model has strong explanatory power for improving organizational performance.

predictive relevance test show that all endogenous variables have Q^2 values greater than zero, namely 0.382 for Digital Competence and **0.471** for Organizational Performance. These findings indicate that the model has good predictive relevance , making it suitable for testing causal relationships between variables in the research model.

Hypothesis Testing

Hypothesis testing was conducted using the *bootstrapping procedure* in SmartPLS with a significance level of 5% ($\alpha = 0.05$). The hypothesis was accepted if the **t- statistic value** *was > 1.96 and the p-value was < 0.05. The results of the direct* and indirect *effect* tests are presented in Table 6.

Table 6. Hypothesis Testing Results

Hypothesis	Relationship between variables	Path Coefficient (β)	t-statistic	p-value	Decision
H1	HRIS → Digital Competence	0.750	18,624	0,000	Accepted
H2	Digital Competence → Organizational Performance	0.563	8,917	0,000	Accepted
H3	HRIS → Organizational Performance	0.324	4,281	0,000	Accepted
H4	HRIS → Digital Competence → Organizational Performance	0.422	7,506	0,000	Accepted

Based on Table 6, the test results show that the Human Resource Information System (HRIS) has a positive and significant effect on Digital Competence with a path coefficient of 0.750, a t-statistic of 18.624, and a p-value <0.001. These results indicate that the better the HRIS implementation in higher education, the higher the digital competence of lecturers and education staff. Thus, Hypothesis 1 is accepted.

Furthermore, Digital Competence was proven to have a positive and significant effect on Organizational Performance with a path coefficient of 0.563, a t-statistic of 8.917, and a p-value <0.001. These findings indicate that increasing employee digital competence contributes to improving organizational performance. Therefore, Hypothesis 2 is accepted.

The direct relationship test between HRIS and Organizational Performance also showed a positive and significant influence with a path coefficient value of 0.324, a t-statistic of 4.281, and a p-value <0.001. These results indicate that HRIS implementation can directly improve organizational performance. Thus, Hypothesis 3 is accepted.

The results of the indirect effect test show that Digital Competence is able to mediate the relationship between HRIS and Organizational Performance, with an indirect effect coefficient of 0.422, a t-statistic value of 7.506, and a p-value <0.001. Because the direct effect of HRIS on Organizational Performance remains significant after the mediator is entered into the model, digital competence acts as a partial mediator (*partial mediation*). Thus, Hypothesis 4 is accepted.

The Effect of Human Resource Information Systems on Digital Competence

The findings demonstrate that Human Resource Information Systems (HRIS) have a positive and significant effect on digital competence. This result indicates that more effective HRIS implementation in private higher education institutions is associated with higher levels of digital competence among faculty members and administrative staff. HRIS implementation not only facilitates personnel administration but also encourages users to strengthen their ability to access, manage, and utilize digital technologies in their daily work activities.

The implementation of HRIS requires users to adapt to various digital functions, including personnel data management, performance reporting, electronic administration, and real-time information utilization. This process indirectly contributes to the development of digital competence because users must be able to operate the system, understand digital workflows, and use the available information to perform their duties more effectively.

This finding is consistent with the resource-based view (RBV), which argues that information technology generates added value when supported by adequate human resource capabilities. In the context of this study, HRIS represents an organizational resource, whereas digital competence constitutes the capability required to utilize that resource effectively. The development of digital competence can therefore be regarded as a logical consequence of more effective HRIS implementation.

The findings also reinforce previous studies demonstrating that the implementation of human resource information systems contributes to employees' digital capabilities, accelerates technological adaptation, and strengthens digital literacy within organizations. In private higher education institutions, HRIS serves not only as an administrative instrument but also as a medium for organizational learning that encourages faculty members and administrative staff to continuously develop the digital competencies required by the digital transformation of higher education.

From a practical perspective, these findings imply that institutional investment in HRIS development should be accompanied by user-capacity development programs, including training, technical assistance, and digital literacy initiatives. Such measures would enable HRIS implementation not only to improve administrative efficiency but also to strengthen employees' digital competence as an essential form of human capital supporting the digital transformation of higher education.

The Effect of Digital Competence on Organizational Performance

The findings indicate that digital competence has a positive and significant effect on the organizational performance of private higher education institutions in Makassar. Higher levels of digital competence among faculty members and administrative staff are therefore associated with better organizational performance. Digital competence enables employees to use information technology effectively, complete tasks more efficiently, improve data-management accuracy, and strengthen coordination across organizational units.

Within higher education institutions, digital competence extends beyond the ability to operate digital devices or applications. It also encompasses the ability to use technology to support the three pillars of higher education—education, research, and community service—as well as academic administration, organizational communication, and data-driven decision-making. Digitally competent faculty members can optimize the use of learning management systems, SISTER, and other academic platforms to improve the effectiveness of teaching, learning, and performance reporting. Similarly,

administrative staff can use information systems to enhance the quality of administrative services provided to students and other stakeholders.

This finding supports dynamic capabilities theory, which emphasizes that an organization's ability to adapt to environmental change depends substantially on the capacity of its human resources to develop, integrate, and apply relevant competencies. In the era of digital transformation, digital competence represents a strategic capability that enables organizations to respond rapidly to technological developments while maintaining sustainable performance. Organizational performance is therefore determined not only by the availability of technology but also by individuals' ability to optimize its use and create organizational value.

The findings are also consistent with previous studies reporting that digital competence contributes to productivity, work effectiveness, service quality, and organizational adaptability in an evolving digital environment. Employees with strong digital competence tend to adopt innovations more rapidly, perform their duties more effectively, and collaborate successfully through digital platforms. These capabilities ultimately contribute to improvements in overall organizational performance.

From a practical standpoint, digital competence development should become a strategic priority in the management of human resources within private higher education institutions. Such development can be facilitated through continuous digital training, enhanced technological literacy, assistance in using institutional applications, and the establishment of a work environment that supports digital learning. By strengthening the digital competence of faculty members and administrative staff, higher education institutions can improve not only operational efficiency but also the quality of institutional governance required to address future digital transformation challenges.

The Effect of Human Resource Information Systems on Organizational Performance

The findings reveal that HRIS has a positive and significant effect on the organizational performance of private higher education institutions in Makassar. Effective HRIS implementation improves organizational performance by providing accurate information, accelerating administrative processes, enhancing operational efficiency, and supporting faster and more data-driven decision-making.

HRIS enables human resource management activities to be conducted in an integrated manner, including employee data management, personnel administration, performance appraisal, competency development, and managerial reporting. The digitalization of these processes reduces manual administrative work, minimizes recording errors, accelerates information flows across organizational units, and increases transparency in human resource management. These improvements contribute to greater organizational effectiveness and efficiency.

This finding is consistent with the resource-based view, which conceptualizes information technology as a strategic organizational resource capable of generating advantages when utilized effectively. In this study, HRIS functions not only as an administrative system but also as a managerial instrument that provides high-quality information to support organizational planning, coordination, control, and performance evaluation. Effective HRIS implementation therefore represents an important determinant of governance quality in higher education institutions.

The findings also support previous research demonstrating that HRIS implementation contributes to operational efficiency, service quality, organizational productivity, and decision-making effectiveness. Organizations that utilize HRIS effectively tend to have more structured workflows, stronger coordination, and greater responsiveness to environmental change. In higher education institutions, these benefits are reflected in improved academic services, more accurate administrative management, and the availability of information required for strategic decision-making.

Nevertheless, the path coefficient for the direct effect of HRIS on organizational performance is smaller than those for the effects of HRIS on digital competence and digital competence on organizational performance. This result suggests that successful HRIS implementation depends not only on system quality but also on users' ability to utilize the system effectively. In other words, the presence of HRIS alone may not optimize organizational performance unless it is complemented by adequate digital competence.

The practical implication is that higher education institutions should not limit their investments to information technology development. They must also ensure that HRIS implementation is supported by appropriate organizational policies, user training, technical assistance, and periodic evaluations of system utilization. This comprehensive approach can improve the effectiveness of HRIS utilization and strengthen its sustainable contribution to organizational performance.

The Mediating Role of Digital Competence in the Relationship Between Human Resource Information Systems and Organizational Performance

The findings indicate that digital competence partially mediates the effect of HRIS on organizational performance. This result demonstrates that HRIS implementation improves organizational performance both directly and indirectly by strengthening the digital competence of faculty members and administrative staff. The contribution of HRIS to organizational performance will therefore be greater when its implementation is accompanied by improvements in users' ability to utilize digital technologies effectively.

The mediating role of digital competence indicates that successful digital transformation in higher education is determined not only by technological availability but also by the readiness of human resources to operate, understand, and utilize technology in their daily work. Although HRIS provides digital information and functions that support human resource management, its strategic value can only be realized when users possess adequate digital competence. Digital competence therefore serves as a mechanism through which technology utilization is translated into improved organizational performance.

This finding is consistent with socio-technical systems theory, which explains organizational performance as the outcome of interactions between technological and social systems. The success of technology implementation depends not only on system quality but also on the ability of individuals and organizations to integrate technology into their work processes. In this study, HRIS represents the technological dimension, whereas digital competence represents the individual capability that enables the technology to be utilized effectively to improve organizational performance.

The findings further reinforce previous studies suggesting that improvements in organizational performance resulting from information technology implementation are generally influenced by human resource factors, including competence, digital readiness, and adaptability to change. This study extends these findings by demonstrating that, within private higher education institutions, digital competence functions not merely as a supporting factor but also as a mediating variable that explains how HRIS implementation can lead to more effective improvements in organizational performance.

This study makes a theoretical contribution by extending the literature on HRIS implementation from a digital human resource management perspective. The findings demonstrate that the relationship between HRIS and organizational performance is not entirely direct but is partly transmitted through users' digital capabilities. Digital competence therefore constitutes an important mechanism that should be incorporated into models of HRIS implementation within higher education institutions.

From a practical perspective, the findings imply that digital transformation strategies in higher education should address two complementary priorities: strengthening technological infrastructure and developing the digital competence of human resources. Investments in HRIS development will generate greater benefits when accompanied by digital training, assistance in system utilization,

enhanced digital literacy, and continuous evaluation of technology use. This integrated approach is expected to improve the effectiveness of HRIS implementation while sustainably strengthening organizational performance.

Conclusion

This study examined the effect of Human Resource Information Systems (HRIS) on organizational performance through digital competence in private higher education institutions in Makassar. The findings demonstrate that HRIS implementation has a positive and significant effect on digital competence, while digital competence positively and significantly affects organizational performance. HRIS also has a positive and significant direct effect on organizational performance. Furthermore, digital competence partially mediates the relationship between HRIS and organizational performance. These findings indicate that improved organizational performance depends not only on the implementation of information technology but also on the ability of human resources to utilize such technology effectively.

Theoretically, this study reinforces the view that successful technology implementation results from the alignment between system quality and human resource capabilities. Digital competence constitutes an important mechanism through which HRIS utilization improves organizational performance. From a practical perspective, the findings suggest that managers of private higher education institutions should focus not only on technological investment but also on developing the digital competence of faculty members and administrative staff through training, technical assistance, and the cultivation of a digital work culture. This integrated approach can optimize HRIS utilization and foster institutional governance that is more effective, efficient, and responsive to technological developments.

This study has several limitations. First, its scope was limited to private higher education institutions in Makassar; therefore, the findings may not be generalizable to all higher education institutions in Indonesia. Second, the study employed a quantitative approach and relied on questionnaire-based data, making respondents' perceptions the primary source of information. Future research should expand the geographical scope, include more diverse types of higher education institutions, and incorporate additional variables, such as digital leadership, organizational culture, organizational readiness, and digital innovation. Future studies may also employ a mixed-methods approach to provide a more comprehensive understanding of HRIS implementation and its effects on organizational performance.

Statement on the Use of Generative Artificial Intelligence (AI)

During the preparation of this manuscript, the authors used Grammarly solely to improve grammar, readability, clarity, and overall language quality. Generative AI was not used to formulate research ideas, analyze data, interpret findings, or draw scientific conclusions. All aspects of the study, including its design, data collection, analysis, interpretation, and conclusions, were conducted and verified by the authors. The authors take full responsibility for the accuracy, integrity, and originality of the manuscript.

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