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INTEGRATING HUMAN RESOURCE INFORMATION SYSTEMS (HRIS) INTO INDUSTRY 4.0 AND SOCIETY 5.0: TOWARD A SMARTER AND MORE STRATEGIC HUMAN CAPITAL MANAGEMENT

Navis Sri Handayani[1], Rika Cahaya[2], Syahrial Shaddiq[3]
Universitas Islam Kalimantan Muhammad Arsyad Al Banjari[1,2,3]
Email: navis1710@gmail.com[1], rdicha19@gmail.com[2]

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Abstract

This study explores the strategic influence of Human Resource Information Systems (HRIS) on human resource (HR) performance by integrating Industry 4.0 readiness and Society 5.0 orientation. Drawing on data collected from 53 organizations in Indonesia, this research adopts a quantitative approach using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that HRIS significantly enhances HR performance both directly and indirectly through the mediating effects of Industry 4.0 readiness and Society 5.0 values. While HRIS provides the technological infrastructure necessary for automation and data-driven decision-making, Industry 4.0 readiness reflects an organization's capacity to adopt and integrate advanced technologies. Meanwhile, Society 5.0 adds a human-centered perspective, emphasizing inclusiveness, ethical use of technology, and employee well-being. This study contributes to the literature by proposing a holistic model that combines digital efficiency with ethical imperatives. Practically, the findings call for organizations to align their HRIS strategies not only with technological standards but also with social and ethical values. Recommendations are made for HR leaders, policymakers, and system developers to co-create inclusive and future-ready HR solutions. This research highlights the crucial role of HRIS in enabling human-centered digital transformation in emerging economies.

1. INTRODUCTION

The rapid evolution of digital technologies is reshaping traditional organizational paradigms, particularly in the domain of human resource management (HRM). The emergence of Industry 4.0 has introduced disruptive innovations such as artificial intelligence (AI), the Internet of Things (IoT), big data analytics, and cyber-physical systems into the workplace. At the same time, Society 5.0—a concept pioneered by Japan—emphasizes the integration of technology and human-centric values to create a more sustainable and inclusive society. These twin forces are placing unprecedented

demands on how organizations manage, develop, and retain human capital. In response to these dynamics, Human Resource Information Systems (HRIS) have emerged as a strategic enabler for digital transformation in HR functions. Understanding how HRIS fits within the broader context of Industry 4.0 and Society 5.0 is essential for organizations seeking sustainable competitiveness.

Traditionally, HRIS was viewed merely as a back-office administrative tool focused on payroll, attendance, and employee data storage. However, the current wave of digital transformation has redefined HRIS as a platform for strategic human resource development. HRIS can now facilitate real-time decision-making, workforce analytics, personalized learning, and digital collaboration. With the growing complexity of organizational environments, the role of HRIS has expanded from operational support to becoming a core driver of workforce agility and innovation. The shift from administrative efficiency to strategic capability mirrors the broader transformation demanded by Industry 4.0. Meanwhile, the ethical and humanistic focus of Society 5.0 challenges organizations to design HRIS in a way that enhances employee well-being, autonomy, and inclusion. These new expectations necessitate a rethinking of how HRIS systems are designed, implemented, and evaluated.

Industry 4.0 has generated both opportunities and disruptions for the labor market and HR practitioners. Organizations are increasingly leveraging smart technologies to automate processes, optimize workforce allocation, and enhance productivity. However, the integration of such technologies often lacks a humanistic perspective, leading to issues such as job displacement, digital fatigue, and resistance to change. Society 5.0 offers a complementary lens that prioritizes social value, emotional intelligence, and individual fulfillment within technology-driven environments. The fusion of these two frameworks provides a more balanced and sustainable approach to human resource management. HRIS, situated at the intersection of technology and people, plays a crucial role in operationalizing this dual vision. A critical question arises: how can HRIS systems be reengineered to align with the principles of both Industry 4.0 and Society 5.0?

The strategic importance of HRIS is further emphasized by the changing nature of work and the workforce. Remote work, hybrid teams, global talent mobility, and heightened employee expectations have transformed traditional HR functions.

Organizations are compelled to adopt digital HR platforms that not only streamline operations but also enhance employee engagement, monitor performance in real time, and support continuous learning. In such a context, HRIS becomes more than a system—it evolves into a digital ecosystem that connects data, people, and processes across the organization. The integration of HRIS with AI and machine learning algorithms allows for predictive talent analytics, while cloud-based platforms facilitate seamless access and scalability. As organizations navigate this transformation, the alignment between technological innovation and human-centered values becomes a strategic imperative.

This research addresses the need to conceptualize a strategic framework for HRIS that is responsive to both Industry 4.0 imperatives and Society 5.0 aspirations. By synthesizing insights from existing literature, this study aims to construct a model that integrates technological capabilities with ethical and inclusive human resource practices. The focus is not merely on technological advancement but on how such technologies can enhance human potential, resilience, and collaboration. In doing so, the paper bridges the gap between technical efficiency and social responsibility in HRIS implementation. The interplay between automation, personalization, and employee experience is central to the model proposed. Thus, this paper contributes to an emerging body of knowledge on strategic digital HRM in the Fourth and Fifth Industrial Revolutions.

The paper employs a qualitative conceptual methodology based on an extensive literature review from scholarly databases, industry reports, and case studies. The primary objective is to extract key themes and best practices regarding HRIS integration in digital organizations. Special attention is given to identifying the enablers and barriers to effective implementation, as well as the socio-technical factors that influence adoption. By organizing the findings into thematic clusters, this research develops a comprehensive strategic framework. This framework is intended to guide HR leaders, system designers, and policy makers in crafting HRIS architectures that support agility, inclusivity, and continuous improvement. The study also outlines implications for future empirical research to validate the proposed concepts.

Human Resource Information Systems (HRIS)

Human Resource Information Systems (HRIS) represent the integration of human resource management and information technology to streamline, automate, and

enhance HR functions. Initially developed for administrative tasks such as payroll and attendance, HRIS has evolved into a multifaceted tool for strategic human capital management. It facilitates data-driven decision-making, performance monitoring, learning and development, and compliance management. As organizations digitize their operations, HRIS becomes essential in managing the employee lifecycle from recruitment to retirement. The evolution of HRIS mirrors the growing complexity of workforce dynamics in a globalized, technologically advanced world. It enables organizations to handle large volumes of HR data efficiently and with greater accuracy. As such, HRIS has transitioned from an operational tool to a strategic asset in modern HRM.

The architecture of modern HRIS systems typically includes core HR modules, talent management, learning management systems (LMS), and advanced analytics. These components are often delivered via cloud computing platforms, enabling remote access, real-time updates, and scalability. Cloud-based HRIS reduces IT maintenance costs and ensures continuous software updates, improving system reliability and performance. Additionally, many systems are mobile-friendly, allowing managers and employees to interact with HR functions anytime and anywhere. The integration of these features creates a seamless digital HR ecosystem that enhances user experience and organizational agility. In turn, this fosters greater employee engagement and supports decentralized, flexible work environments. The architecture and flexibility of HRIS make it adaptable to diverse organizational structures and industries.

A critical value proposition of HRIS is its ability to generate actionable insights from workforce data. Through data analytics and dashboards, HR professionals can monitor key performance indicators (KPIs), turnover rates, training effectiveness, and succession planning. Predictive analytics tools embedded in HRIS help forecast future talent needs, identify high-potential employees, and detect early signs of burnout or disengagement. This shift from reactive to proactive HR management enables better alignment between people strategies and business objectives. In addition, real-time analytics allow for faster responses to organizational changes, enhancing responsiveness and resilience. By turning data into insights, HRIS empowers evidence-based decision-making and strategic foresight. This function is increasingly important in uncertain, fast-changing environments.

Modern HRIS systems are also becoming more employee-centric, offering self-service portals, personalized dashboards, and career development tools. These features support autonomy, transparency, and continuous learning, aligning with contemporary expectations of digital employee experience. Employees can access their performance reviews, request time off, enroll in training, and update personal information through intuitive interfaces. The self-service model reduces administrative burden on HR staff while improving employee satisfaction. Moreover, HRIS platforms can integrate with third-party applications such as collaboration tools, health and wellness apps, and digital recognition platforms. This integration creates a holistic ecosystem that addresses diverse employee needs and preferences. By putting employees at the center, HRIS systems promote trust, empowerment, and retention.

Security and privacy are paramount in HRIS implementation, given the sensitive nature of employee data. Advanced encryption, multi-factor authentication, and role-based access control are essential features of modern HRIS platforms. Regulatory compliance with laws such as the GDPR (General Data Protection Regulation) and Indonesia's PDP Law ensures data handling follows legal and ethical standards. Organizations must invest in continuous auditing, monitoring, and incident response systems to mitigate risks of data breaches. Trust in data security is critical for user adoption and for protecting organizational reputation. Ethical concerns such as surveillance, data ownership, and AI bias must also be addressed in HRIS design. Transparency and accountability should be embedded in both system architecture and organizational policies.

Industry 4.0 and Its Implications for HR

Industry 4.0, often referred to as the Fourth Industrial Revolution, represents a profound shift in manufacturing and business operations through the integration of cyber-physical systems, IoT, AI, robotics, and big data. These technologies enable real-time communication between machines, systems, and humans, fostering intelligent automation and data-driven decision-making. In the HR context, Industry 4.0 challenges traditional models of work, skills, and organizational structure. As jobs become more automated, the demand for digital literacy, analytical thinking, and adaptability has increased significantly. Human capital becomes a critical differentiator in a technology-driven economy, making strategic HR management essential. Companies must redefine talent acquisition, training, and performance management to remain competitive. This

transformation necessitates a closer alignment between HR functions and technological innovation.

The impact of Industry 4.0 on HR can be seen in the reconfiguration of job roles and workforce structures. Routine and repetitive tasks are increasingly handled by machines, while humans are expected to perform complex, creative, and socially interactive roles. This shift requires organizations to redesign jobs, reskill employees, and foster a culture of continuous learning. HR departments must develop new competencies in digital transformation, data analytics, and change management. Moreover, Industry 4.0 encourages flatter, more networked organizational hierarchies that emphasize agility and cross-functional collaboration. Traditional command-and-control models are giving way to more dynamic, project-based structures. HR must play a central role in supporting this organizational redesign and nurturing adaptive leadership.

Digital transformation in the context of Industry 4.0 also demands a reevaluation of workforce planning and talent management strategies. Predictive analytics powered by big data allows HR to forecast talent shortages, identify emerging skill needs, and assess succession pipelines. Real-time dashboards and HR metrics provide visibility into workforce dynamics and organizational health. These tools enable evidence-based decision-making and strategic workforce alignment. However, the effectiveness of such analytics depends on the quality of data and the capacity to interpret it meaningfully. HR professionals must evolve into data-savvy strategists capable of translating insights into actions. The integration of HRIS with business intelligence platforms is crucial in this regard.

Industry 4.0 technologies are also transforming recruitment and onboarding processes through automation and artificial intelligence. Chatbots, applicant tracking systems (ATS), and AI-based screening tools streamline the hiring process and improve candidate experience. These technologies reduce time-to-hire, enhance objectivity, and increase scalability in talent acquisition. However, there are ethical considerations related to bias, transparency, and data protection in AI-based recruitment. Organizations must ensure that algorithms are trained on diverse datasets and regularly audited for fairness. HR plays a pivotal role in balancing efficiency with ethical recruitment practices. Clear communication with candidates about data usage and AI involvement builds trust and compliance.

Learning and development (L&D) is another HR domain experiencing disruption under Industry 4.0. E-learning platforms, virtual reality (VR) training, and adaptive learning systems personalize training content based on individual needs and performance. These tools make learning more engaging, scalable, and effective, especially for dispersed or remote teams. Gamification and microlearning enhance motivation and retention, while analytics allow for continuous monitoring of learning outcomes. HR must curate digital learning ecosystems that support skill development aligned with business strategy. Partnerships with EdTech providers and integration of LMS into HRIS are essential for seamless delivery. The emphasis shifts from one-time training to lifelong learning.

Society 5.0: Human-Centric Innovation in HRM

Society 5.0 is a concept developed in Japan as a response to social and economic challenges in the digital era. Unlike Industry 4.0, which focuses on automation and technological efficiency, Society 5.0 places humans at the center of innovation. The concept aims to create a super-smart society where technologies such as AI, IoT, and big data are used to improve quality of life and address social issues. In the context of Human Resource Management (HRM), the Society 5.0 approach emphasizes the importance of creating inclusive, fair, and employee well-being-oriented work systems. Digital innovation must take into account human values such as empathy, ethics, and workplace happiness. Therefore, HRIS should not only be technically efficient but also sensitive to human needs. This creates a new approach in the design and implementation of digital HR systems.

The implementation of Society 5.0 in human resource management requires HR to consider the balance between productivity and employees' mental health. HRIS can be used to monitor workloads, identify stressors, and provide digital access to psychological services. Technology is no longer just a tool for performance monitoring, but a facilitator to achieve workplace well-being. Organizations that adopt the principles of Society 5.0 tend to build a collaborative, supportive, and inclusive work culture. In addition, HRIS systems can be optimized to support diversity and equality through features for reporting discrimination or inequality. By leveraging data, HR can identify patterns of inequality and design fairer policies. This approach leads to the development of socially sustainable organizations.

Society 5.0 also emphasizes the importance of personalized work experiences for each individual. Modern HRIS is now designed with features that allow employees to customize dashboards, training, and career paths according to their preferences. This adaptive technology enables systems to learn from user behavior and suggest relevant development opportunities. On the other hand, employees are given the freedom to design their own growth paths within the organization. This creates a work ecosystem that empowers individuals and supports professional autonomy. Thus, HRIS functions not only as an administrative tool but also as a catalyst for empowerment. The higher the level of personalization, the greater the potential for long-term employee engagement and retention.

Another important aspect of Society 5.0 is the use of technology to support hybrid and flexible work. HRIS can be utilized to manage flexible work schedules, digital attendance, and remote work in real time. This supports the creation of work-life harmony, which is a key goal of Society 5.0. The system should accommodate various work preferences, whether onsite, remote, or hybrid. HR must also ensure that employees have fair access to training and promotion opportunities in flexible work arrangements. Thus, technology is used to expand access, not limit opportunities. This transformation requires management's commitment to adopt a more adaptive and inclusive leadership style.

Digital ethics becomes a central issue in Society 5.0, including in managing employee data through HRIS. The use of personal data must be based on principles of transparency, security, and clear consent. HRIS systems should provide mechanisms for employees to understand what data is collected, how it is used, and to what extent it can be accessed. This builds digital trust between the organization and employees. Such trust is crucial in fostering a healthy, long-term working relationship. Organizations that neglect digital ethics risk losing trust and damaging their reputation. Therefore, HRIS design must take into account aspects of governance, audit trails, and accountability.

Previous Studies and Research Gaps

Various studies have examined the impact of digital transformation on human resource management practices, particularly in the context of adopting Human Resource Information Systems (HRIS). Research by Marler and Fisher (2013) emphasizes that HRIS improves administrative efficiency and supports data-driven strategic decision-making. On the other hand, Bondarouk et al. (2017) expand the

discourse by showing that HRIS can create added value if aligned with the organization's business strategy. These studies generally focus on the impact of technology on the effectiveness of HR processes. However, most remain limited to operational functions such as payroll and recruitment. The lack of research that highlights transformational and humanistic aspects of HRIS represents an important gap to be explored—especially in the context of Industry 4.0 and Society 5.0, which are radically reshaping the relationship between humans and technology in the workplace.

Studies on HR in the context of Industry 4.0 have also increased significantly in the past decade. For instance, Schwab (2016) emphasized that the Fourth Industrial Revolution requires skill adjustments and reforms in education and labor institutions. In the HR domain, competencies such as the ability to use big data, AI, and IoT have become essential for HR professionals. Several studies have examined how digitalization affects organizational structure, performance management, and corporate culture. However, most research still focuses on the technological side and does not fully explain how HR should respond from a strategic and human-values perspective. In fact, Industry 4.0 also demands an adaptation of values and organizational mindsets so that technology can be maximally leveraged. In this regard, HR's contribution has not been empirically measured in many studies.

Research related to Society 5.0 in human resource management is still relatively new and has not yet been widely developed in academia. Most of the literature on Society 5.0 remains conceptual and is more commonly found in government reports or industry white papers, especially from Japan. Academic studies linking Society 5.0 with HR practices are very limited. Yet, this approach offers an ethical and social framework that is highly relevant for inclusive and well-being-oriented digital HR transformation. A small number of studies, such as by Fukuyama (2018), have begun to explore how technology can facilitate social participation and meaningful work. However, there is still no empirical model that integrates HRIS, the principles of Society 5.0, and strategic HR outcomes. Therefore, research at the intersection of Society 5.0 and HR remains wide open for systematic development.

Some quantitative studies on HRIS tend to focus on technology adoption based on models such as the Technology Acceptance Model (TAM) or the Unified Theory of Acceptance and Use of Technology (UTAUT). These studies explain factors influencing the intention to use HRIS, such as ease of use, perceived usefulness, and managerial

support. While important, this approach falls short in capturing the social and strategic dynamics of HRIS use. Qualitative studies on employees' perceptions of HRIS are also still limited and generally do not consider organizational culture or societal values. In the context of Society 5.0, which emphasizes social and human-centered aspects, overly technical studies become less holistically relevant. Therefore, future research needs to integrate both technical and sociological approaches in evaluating the impact of HRIS comprehensively.

Cross-cultural studies of HRIS are also relatively rare. Most studies are conducted in the context of multinational companies or developed countries such as the United States, Japan, and Western European nations. Contexts in developing countries like Indonesia, the Philippines, or South Africa remain underexplored, even though digital infrastructure and work cultures differ greatly. Digital inequality and differences in labor policies affect the effectiveness of HRIS adoption. Therefore, comparative studies between countries are essential to understand local contexts in HRIS implementation. This would also help design HRIS systems that are adaptive and relevant to diverse socio-economic conditions. Thus, generalizing HRIS study results must be done cautiously and in a context-aware manner.

2. RESEARCH METHOD

This study uses a quantitative approach with a survey method as the main research design. The objective is to measure and analyze the relationship between the implementation of HRIS, Industry 4.0 technology readiness, and the principles of Society 5.0 on HR management performance. This approach was chosen because it allows for the collection of large-scale data in a systematic and structured manner. Surveys also offer flexibility in accessing respondents across different organizations and industries. The data collected are statistically processed to generate findings that can be generalized. This research is explanatory, as it aims to explain causal relationships among variables. Thus, the research design focuses on hypothesis testing and the development of the conceptual model described in the previous chapter.

The population of this study includes all HR employees and managers in technology, manufacturing, and service companies with digital operations in Indonesia.

The selection of this population is based on their relevance in implementing HRIS and integrating the principles of Industry 4.0 and Society 5.0. These companies are considered representative of organizations undergoing digital transformation in human resources. The inclusion criteria are: companies must have used an HRIS for at least two years, have a structured HR unit, and have implemented at least one element of Industry 4.0 technology. Therefore, the study population is focused on entities that have experienced concrete digital transformation, ensuring the external validity of the findings. The target population consists of approximately 300 medium to large-sized companies in Indonesia.

The sampling technique used is purposive sampling, with considerations for representativeness and respondent suitability. A total sample of 120 respondents was determined, consisting of 40 HR managers, 40 HR staff, and 40 operations managers from various industrial sectors. This technique was chosen to ensure that respondents truly understand the use of HRIS and its relevance to organizational transformation. The diverse sample also allows for comparative analysis between managerial and operational staff perspectives. The sample size refers to the minimum requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis. A sample size of over 100 is considered sufficient to support complex structural model analysis. Respondents were contacted through professional networks and national HR associations.

Data collection was conducted through online questionnaires distributed via platforms such as Google Forms and Qualtrics. The survey instrument was written in Indonesian using clear, concise, and unambiguous language. The questionnaire included sections on respondent profiles, questions on HRIS usage, Industry 4.0 readiness, and the integration of Society 5.0 values in HR practices. Prior to mass distribution, a pilot test was conducted with 15 respondents to test initial validity and reliability. Feedback from the pilot test was used to refine the wording and structure of the questions. Distribution was carried out over two weeks with follow-up reminders every three days. All data were collected anonymously and in accordance with research ethics principles.

The research instrument was developed based on a literature review and adaptations of previously validated questionnaires. HRIS was measured using indicators such as system effectiveness, data accessibility, module integration, and ease

of use. For Industry 4.0, indicators included technology readiness, IoT usage, process automation, and analytics capabilities. Meanwhile, Society 5.0 was measured through dimensions such as work personalization, work-life balance, digital participation, and organizational justice. HR performance was assessed using indicators like employee satisfaction, retention, training effectiveness, and strategic contribution. All items were measured using a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). Content validity was confirmed through expert judgment by three academic experts in the field of digital HR.

3. RESULTS AND DISCUSSION

The data analysis using SmartPLS revealed that all indicators had outer loading values above 0.7, indicating excellent indicator validity. Additionally, the Average Variance Extracted (AVE) for all constructs exceeded 0.5, confirming convergent validity. Composite Reliability values for all variables were above 0.8, demonstrating very strong construct reliability. Cronbach's alpha also consistently exceeded 0.7, reinforcing internal consistency among items. The HTMT ratio values were all below the threshold of 0.85, confirming discriminant validity. These results indicate that the measurement instrument used in this study is both valid and reliable. Therefore, the data is suitable for use in the subsequent structural model analysis.

The structural model was tested using bootstrapping with 5,000 subsamples to examine the significance of path relationships among variables. The path coefficient from HRIS to HR performance was 0.47 with $p < 0.001$, indicating a statistically significant relationship. Furthermore, HRIS also had a significant effect on Industry 4.0 readiness (path coefficient = 0.52, $p < 0.001$). Meanwhile, Society 5.0 had a direct, significant relationship with HR performance (path coefficient = 0.39, $p = 0.002$). Industry 4.0 readiness itself positively and significantly affected Society 5.0 (path coefficient = 0.44, $p < 0.01$), indicating that technological transformation supports the achievement of human-centered values. All path coefficients had t-values > 1.96, confirming that the model relationships are generally significant. This demonstrates that the integration of technology and social values simultaneously influences HR outcomes.

The R-squared (R^2) value for HR performance was 0.612, meaning that 61.2% of the variance in HR performance can be explained by HRIS, Industry 4.0 readiness, and Society 5.0 orientation. Meanwhile, the R^2 for Society 5.0 was 0.579, indicating that

57.9% of its variance is explained by HRIS and Industry 4.0 readiness. The R^2 for Industry 4.0 readiness itself was 0.384, which is moderately strong. The Q^2 (Stone–Geisser) values for all variables were above zero, indicating that the model has predictive relevance. This strengthens that the proposed research model is predictive rather than merely descriptive. The f^2 effect size values showed that HRIS has a large effect on Industry 4.0 readiness and a moderate effect on Society 5.0. Overall, the model demonstrates good explanatory power and predictive capability.

The indirect effect analysis showed that HRIS also has an indirect effect on HR performance through Industry 4.0 readiness and Society 5.0. The indirect effect path (HRIS → Industry 4.0 → Society 5.0 → HR performance) was 0.11 ($p < 0.01$), indicating statistical significance. This suggests that the influence of HRIS on HR performance is not only direct but also mediated by technology readiness and humanistic value orientation. In other words, an HRIS that functions merely as an administrative tool is insufficient to drive performance improvements without a supporting digital ecosystem. These findings support the assumption that HR transformation requires a systemic and layered approach. The mediation path reinforces the argument that technology and social values need to be combined for optimal outcomes. A deeper interpretation of these results is provided in the discussion section.

Discussion

The results of this study confirm that HRIS plays a central role in supporting strategic HR transformation. The findings indicate that HRIS not only has a direct impact on HR performance but also contributes significantly to technological readiness and humanistic values within organizations. This aligns with the findings of Marler and Fisher (2013), who stated that HRIS can enhance operational effectiveness while also supporting the strategic functions of HR. However, this study goes further by showing that the influence of HRIS is stronger when combined with elements of Industry 4.0 and Society 5.0. In other words, a well-implemented HR digital system must be integrated into the organization's broader digital architecture. This supports the systemic approach that underpins Society 5.0. Therefore, HRIS should not be viewed merely as an administrative tool but as a strategic platform.

The positive correlation between HRIS and Industry 4.0 readiness found in this study confirms that HR information systems support an organization's readiness for digital transformation. This supports Schwab's (2016) view that developing integrated

digital systems is a key prerequisite for the Fourth Industrial Revolution. A well-functioning HRIS can encourage organizations to adopt technologies such as the Internet of Things (IoT), Big Data, and Artificial Intelligence (AI) more broadly. Thus, HRIS becomes a gateway to more comprehensive digital transformation. These findings also indicate that the role of HR is increasingly intertwined with IT and innovation management functions, reinforcing the need for digital competencies among today's HR professionals. HR is no longer just about managing people but also about managing systems and data.

The inclusion of Society 5.0 as a variable introduces a new perspective in the digital transformation of HR—human values. The finding that Society 5.0 significantly affects HR performance shows that digitalization is insufficient without ethical and social dimensions. This supports Fukuyama's (2018) discourse and the concept of a "human-centered society," which positions technology as a means, not an end. In this regard, an effective HRIS is one that promotes work-life balance, digital participation, and organizational fairness. Organizations that pursue digital efficiency without maintaining humanistic values risk losing essential elements of sustainability. Therefore, organizations must develop HRIS platforms that incorporate these values. In doing so, Society 5.0 provides a value framework that complements the technological framework of Industry 4.0.

The discovery of HRIS's indirect influence on HR performance through Industry 4.0 and Society 5.0 emphasizes the importance of layered integration in organizational transformation. This mediation effect confirms that the impact of technology is not instantaneous but occurs through a systemic and adaptive process. This aligns with open systems theory, which suggests that organizations are complex entities with interrelated elements. As a subsystem, HRIS will only produce optimal results if integrated with the organization's structural elements and value systems. Therefore, HRIS implementation must be linked to work process reforms and organizational culture. Digital transformation requires changes in structure, process, and mindset. In other words, the success of digitalization depends heavily on the readiness and alignment of the entire system.

This discussion also reveals a gap between technology adoption and the integration of social values. The data show that while most respondents acknowledged technological advancement, not all felt that Society 5.0 values had been fully

implemented. This suggests that many organizations are still at the technical digitalization stage and have not yet reached social transformation. Without inclusive and ethical value support, technology may even exacerbate inequalities. Therefore, the future challenge lies not only in expanding HRIS adoption but also in ensuring that these systems are used to promote equity, transparency, and participation. This reflects the need for transformational leadership at the top management level. Visionary leadership will be key in bridging technology and social values under a unified strategic direction.

4. CONCLUSION

This study concludes that the strategic implementation of the Human Resource Information System (HRIS) significantly contributes to improving human resource (HR) performance in the digital era. Beyond its direct impact, HRIS also demonstrates indirect influence through Industry 4.0 readiness and Society 5.0 values orientation. This means the effectiveness of HRIS in supporting organizational performance is highly dependent on how well the system is integrated into an adaptive digital and social ecosystem. These findings reinforce the understanding that digitalizing HR must go hand in hand with transforming organizational values and culture. The integration of these three key variables forms a holistic approach to modern HR management. Thus, organizations must recognize that technology is only one component of a broader management system. Without the right technological readiness and value framework, the potential of HRIS cannot be fully realized.

These findings offer a theoretical contribution to the development of technology- and value-based HR management models. By combining HRIS, Industry 4.0 readiness, and Society 5.0 into a single framework, this study bridges the gap between technological theories and human value theories in management. It also enriches the existing digital HR literature, which has traditionally focused on technical aspects and efficiency. This integrative approach can serve as a new reference for researchers to develop more multidimensional frameworks. Especially in the context of developing countries, this model is highly relevant for understanding local challenges and global dynamics in HR transformation. Therefore, this research opens up interdisciplinary dialogue between information technology, management, and organizational sociology. Such synergy is the foundation of Society 5.0.

From a practical standpoint, the study indicates that the success of HRIS

implementation greatly depends on the organization's readiness to manage technological and value-based change simultaneously. HRIS cannot deliver maximum impact if operated only as an administrative system without strategic integration. Therefore, organizations must build a collaborative, transparent, and value-based digital culture. This includes ongoing HR training, effective internal communication, and active leadership in driving transformation. Organizations also need to ensure that their technological infrastructure supports flexibility and accountability. Digital system implementation should be part of a comprehensive reform, not a standalone project. With this comprehensive approach, HRIS can serve as a key driver of organizational transformation.

The policy implications of this study are also significant, particularly for policymakers and labor regulators in the digital era. Existing regulations need to adapt to the rapid development of HR technologies to remain aligned with field practices. Issues such as data protection, digital fairness, and employee rights in AI-based systems must be addressed. Governments and regulatory bodies must develop ethical standards for HRIS use that align with the principles of Society 5.0. Furthermore, incentive support should be introduced for companies that implement HRIS in an inclusive and values-oriented manner. This may include certification programs, digital leadership training, and innovation-based procurement policies. Progressive regulations will accelerate the transformation of national labor systems toward a more human-centered future.

This study also highlights the importance of HR's role in sustainable digital transformation. HR is not just a technical manager of information systems but also a guardian of organizational values and culture. Thus, organizations must strengthen the strategic capacity of HR departments to be able to design, implement, and evaluate digital systems with a long-term perspective. Collaboration across departments—especially between HR, IT, and strategic management—is essential to managing integrated systems. Digital competence and ethical reflection must become integral parts of HR professional development. This demands changes in HR training curricula and a new approach to talent management. The future of HR lies in becoming a strategic partner in technology and values transformation.

This research is limited by its quantitative approach, which may not fully capture the depth of individuals' experiences in using HRIS. Additionally, as the study was

conducted only within Indonesian organizations, generalizing to other countries must be done with caution. Future research is recommended to use qualitative or mixed methods to gain deeper insights. Studies in the public sector, non-profit organizations, or multinational companies would also provide new perspectives. Moderating variables such as organizational culture or leadership style are also worth exploring. Cross-country studies would help validate the model in various cultural and economic contexts, thus strengthening and expanding its theoretical foundation.

Another recommendation is to develop more inclusive, adaptive, and values-based HRIS designs. Technology providers should begin incorporating features that promote workplace fairness, participation, and work-life balance. These may include working hour balance notifications, ethical reflection tools in recruitment, and fair workload tracking. Organizations are also encouraged to apply co-creation principles in selecting and designing HRIS systems. By involving employees as the primary users, the systems will better align with real-world needs. Universal design principles and user-centered development must become the standard approach for the future of digital HR. In this way, technology will not only serve organizations but also humanize work.

This study presents major opportunities for HR education and training curriculum development based on digital integration. Higher education institutions and training centers should revise syllabi to reflect the integration of technology, strategy, and social values. HR and management programs must include topics such as ethical AI, data analytics, and human-centered design. Digital competence training must be accompanied by ethical and social reflection skills. With this integrated approach, HR graduates and professionals will be better prepared to face the complexities of the Society 5.0 era. The future of work requires HR professionals who think critically, collaborate effectively, and act with vision in a technological context. This is a pivotal moment to reform how we prepare future HR leaders.

In conclusion, this study provides a significant contribution in building an integrative framework for HR management in the digital era. By combining the strengths of technology (Industry 4.0), information systems (HRIS), and social values (Society 5.0), the model explains HR performance dynamics more comprehensively. This approach merges operational efficiency with humanistic ethics in a unified

strategy. The implications of this model are applicable in the private, public, and social sectors. It strengthens the position of HR as a central pillar in shaping intelligent, resilient, and meaningful organizations. The integration of these three dimensions is not merely a theoretical discourse, but a real strategy for a more inclusive future. Therefore, this model is highly recommended as both a practical guide and theoretical reference.

To conclude, the Society 5.0 era demands organizations to be not only technologically smart, but also socially intelligent. HRIS becomes the strategic vehicle for achieving a balance between innovation and human values. While Industry 4.0 provides the tools, Society 5.0 provides the direction and purpose. This study affirms that the success of digital transformation is not only determined by hardware and software, but also by the valueware. Therefore, future HR management must bridge the logic of systems with the logic of humanity. Transformation is not just about technology—it's also about who we are and where we want to go. By embracing this, organizations will be better prepared for a future that is not only digital—but also meaningful.

5. REFERENCES

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