

The Role of Human Resource Information Systems in Transportation and Logistics Companies

Primadi Candra Susanto ^{1*}, Rintis Eko Widodo ², Ovi Sari Hamidah ³, Nur Zaeni ⁴, Lily Yuntina ⁵

^{1*} Management and Business Study Program, Institut Transportasi dan Logistik Trisakti, East Jakarta City, Special Capital Region of Jakarta, Indonesia

² Management Study Program, Faculty of Management Business, Universitas Kristen Krida Wacana, West Jakarta City, Special Capital Region of Jakarta, Indonesia

³ Management Study Program, Faculty of Business and Social Science, Universitas Dian Nusantara, West Jakarta City, Special Capital Region of Jakarta, Indonesia

⁴ Nautical Studies Program, Akademi Maritim Djadajat, North Jakarta City, Special Capital Region of Jakarta, Indonesia

⁵ Education Study Program, Faculty of Education Science, Universitas Pancasakti, Bekasi City, West Java Province, Indonesia

Email: primstrisakti@gmail.com ^{1*}, rintis.ew@gmail.com ², ovi.hamidah.sari@undira.ac.id ³, nurzaeni1974@gmail.com ⁴, lyuntina@gmail.com ⁵

Article history:

Received August 8, 2026

Revised September 10, 2026

Accepted September 14, 2026

Abstract

This study aims to comprehensively examine, analyze, and synthesize the influence of training, human resources (HR), and digital organizational culture on the effectiveness of Human Resource Information System (HRIS) implementation in transportation and logistics companies in Indonesia. This study employs a qualitative approach using a literature review method. The data consist of secondary sources obtained from scientific articles and previous research published in reputable journals and indexed academic databases, including Scopus, Springer, Sage, Elsevier, Emerald, Web of Science, EBSCO, Copernicus, and SINTA. The findings indicate that training, human resources, and digital organizational culture contribute to effective HRIS implementation by strengthening employee competencies, supporting organizational readiness, and fostering digital adoption. However, this study is limited to descriptive conceptual analysis based on secondary literature published between 2021 and 2026. Therefore, the findings have not been empirically validated through quantitative testing within a specific logistics corporation. In addition, the study does not examine external macro-level factors, such as domestic cargo rate volatility, government regulations, technological infrastructure, and industry dynamics, which may influence HRIS implementation.

Keywords:

Human Resource Information System; Training; Human Resources; Digital Organizational Culture.

1. INTRODUCTION

The transportation and logistics sector plays a strategic role in supporting Indonesia's economic growth as the world's largest archipelago, with more than 17,000 islands; population and economic activity remain concentrated on Java, while natural resources are widely distributed across eastern Indonesia. Efficient transportation networks and integrated logistics systems are therefore essential to connect production centers, markets, ports, and industrial areas, ensuring the smooth movement of goods, services, and people throughout the country. Reliable infrastructure can reduce logistics costs, improve supply chain performance, strengthen regional connectivity, and enhance national competitiveness. Furthermore, transportation and logistics support trade expansion, investment attraction, and equitable economic development by facilitating access to remote regions and unlocking the potential of resource-rich areas. As Indonesia advances toward sustainable development, strengthening transportation and logistics remains critical (Mulyono & Verawati, 2021). These geographical conditions make effective and efficient interregional connectivity a key prerequisite for the

smooth distribution of goods, passengers, and information, while also serving as a determining factor for the competitiveness of the national economy as a whole (Susanto et al., 2026).

Data from the Central Statistics Agency (BPS) shows that the transportation and warehousing sector has consistently grown at a rate above the national economic growth average in recent years. This sector grew by 19.87% in 2022 and 13.96% in 2023, far surpassing the national Gross Domestic Product (GDP) growth rates of 5.31% and 5.05%, respectively, during the same period, and is projected to maintain double-digit growth of 12.53% (year-over-year) in 2025, with its contribution to the national GDP reaching Rp1,623.65 trillion (Central Statistics Agency, 2022). In terms of employment, the transportation and warehousing sector employed approximately 6.3 million workers, or 4.28% of the total 146.54 million working population in Indonesia as of August 2025, making it one of the strategic labor-intensive sectors in the national employment structure (Central Statistics Agency, 2025).

Data on the growth of the transportation and warehousing sector compared to Indonesia's national GDP growth for the 2021–2025 period is presented in Figure 1.

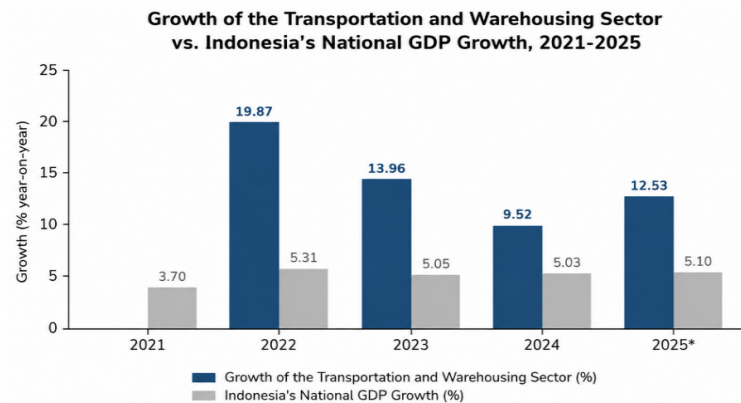


Figure 1. Growth of the Transportation and Warehousing Sector vs. Indonesia's National GDP Growth, 2021–2025, Source: (Supply Chain Indonesia, 2026)

Although growth in the transportation and warehousing sectors has been impressive, Indonesia's overall logistics performance has actually declined on a global scale. According to the Logistics Performance Index (LPI) released by the World Bank in 2023, Indonesia's ranking plummeted by 17 places from 46th in 2018 to 63rd out of 139 countries, with its score dropping from 3.15 to 3.0, placing Indonesia sixth among ASEAN countries, behind Singapore, Malaysia, Thailand, Vietnam, and the Philippines (World Bank, 2020). The most significant declines occurred in the dimensions of timeliness and tracking and tracing, while national logistics costs remain relatively high, ranging from 14.2% to 14.3% of GDP—far above the average for developed countries, which generally falls below 10% of GDP.

In summary, supporting data on the performance of Indonesia's transportation and logistics sector are presented in Table 1.

Table 1. Supporting Data on the Performance of Indonesia's Transportation and Logistics Sector

No	Indicator	Achievement/Value	Source
1	Indonesia's Logistics Performance Index (LPI) Ranking	Ranked 63rd out of 139 countries, with a score of 3.0 (down from 46th place and a score of 3.15 in 2018)	World Bank (2023)
2	Contribution of the transportation and warehousing sector to national GDP	Rp1,623.65 trillion, growing by 12.53% (year-over-year) in 2025 (projection)	BPS; Supply Chain Indonesia (2025)
3	Growth of the transportation and warehousing sector (year-over-year)	19.87% (2022); 13.96% (2023); 9.52% (2024, projected)	BPS; Supply Chain Indonesia (2025)
4	Employment in the transportation and warehousing sector	6.3 million people, or 4.28% of Indonesia's total workforce of 146.54 million	BPS (2025)
5	National logistics costs as a percentage of GDP	Ranges from 14.2% to 14.3% of national GDP	(Pelindo, 2023)
6	Companies in the Asia-Pacific region that have implemented a comprehensive digital transformation of their HR functions	Only about 38% of all companies	Deloitte (2024)

Amid this growth in business volume and the significant increase in workforce size, human resource management at companies in the transportation and logistics sector faces unique job characteristics namely, a geographically dispersed and mobile workforce, such as drivers, transportation crews, and field or warehouse staff making personnel administration, payroll processing, and performance monitoring which are still conducted manually prone to errors, delays, and inefficiencies. Kaswanti & Veri., (2026), Recent studies reveal that only about 38% of companies in the Asia-Pacific region have fully implemented digital transformation in their human resource systems, while most organizations still depend on manual processes that contribute to recruitment delays, administrative errors, and limited data availability for strategic decision-making. This condition highlights the importance of implementing a Human Resource Information System (HRIS) as a digital solution that integrates human resource management activities into a single, accurate, real-time, and efficient platform. The adoption of HRIS is particularly important for transportation and logistics companies in Indonesia to improve workforce management, operational efficiency, and organizational competitiveness (Giovany & Almigo, 2026; Lubis & Adlina, 2025).

Various previous studies have examined the factors influencing the successful implementation of HRIS, such as system quality and technological readiness Pradnyaswari & Wijanarko., (2026), technology acceptance models for HRIS (Colie & Barus, 2023), and the antecedents of HRIS adoption in public sector organizations (Purwantono, 2025). However, there is a fairly fundamental research gap. First, the majority of research on HRIS still focuses on the manufacturing, banking, education, and public service sectors, while studies specifically addressing the implementation of HRIS in transportation and logistics companies in Indonesia remain very limited. Second, previous studies generally examined the effects of training, human resources, and digital organizational culture on HRIS separately and in different organizational contexts; consequently, no conceptual model has yet been developed that integrates these three variables simultaneously within a single study, particularly in the context of transportation and logistics companies, which are characterized by a unique field-based workforce.

The novelty of this study lies in the integration of three independent variables training, human resources, and digital organizational culture into a single conceptual model based on a literature review that specifically focuses on the implementation of HRIS in transportation and logistics companies in Indonesia, a context with operational characteristics and workforce structures that differ from those of other service sectors. The uniqueness of this research (state of the art) also lies in its systematic literature review approach, which synthesizes findings from internationally reputable scientific publications from 2021 to 2026, thereby generating theoretical propositions that can serve as a basis for developing hypotheses for future quantitative research, while also providing practical contributions to the management of transportation and logistics companies in designing strategies to strengthen training, human resources, and digital organizational culture to optimize the implementation of HRIS.

The uniqueness of this study lies in the development of a Human Resource Information System (HRIS) perspective specifically applied to the context of transportation and logistics companies in Indonesia. Unlike previous HRIS studies that generally focus on organizations across various industries, this study integrates training, human resources, and digital organizational culture as three key factors influencing the successful implementation of HRIS. The transportation and logistics sector presents unique characteristics, including geographically dispersed workforces, high employee mobility, and the need for real-time coordination among headquarters, ports, warehouses, depots, fleets, and distribution centers. Therefore, HRIS implementation is not merely concerned with the digitalization of HR administration but also with the organization's ability to manage workforce complexity and operational dynamics.

Another unique aspect of this study is its examination of HRIS success through three dimensions: system quality, information quality, and service quality, while linking these dimensions to human resource factors such as competence, commitment, and adaptability. This integration provides a more comprehensive perspective on HRIS as an essential component of organizational digital transformation rather than merely an administrative software system. Furthermore, this study proposes a conceptual framework that can serve as a foundation for future empirical testing using Structural Equation Modeling (SEM) with SmartPLS. The proposed framework is expected to contribute both theoretically and practically to the development of effective and sustainable HRIS implementation strategies within Indonesia's transportation and logistics sector.

2. RESEARCH METHOD

This study employs a descriptive qualitative approach using a literature review design to describe, analyze, and synthesize concepts and findings from previous studies related to training, human resources, digital organizational culture, and human resource information systems (HRIS), particularly within Indonesia's transportation and logistics sector. This literature-based approach does not statistically test hypotheses but aims to develop a comprehensive conceptual understanding of the relationships among the research variables. The findings are expected to generate theoretical propositions that can provide a foundation for developing hypotheses in subsequent quantitative research (Zulfikar et al., 2024).

The data used in this study consist of secondary data obtained from scientific journal articles and previous research published in reputable academic databases, including Springer, Wiley, ProQuest, Emerald, Taylor & Francis, Sage, SINTA, Copernicus, and Google Scholar. The selected publications were limited to the period 2021–2026 to ensure the relevance and recency of the literature concerning the research variables, namely training, human resources, digital organizational culture, and Human Resource Information Systems (HRIS). A systematic literature search was conducted using keywords such as training, human resources, digital organizational culture, HRIS, and transportation and logistics sector. This approach enabled the identification of relevant studies that support the research context and objectives within transportation and logistics companies (Susanto et al., 2025).

Data analysis was conducted using qualitative content analysis through systematic stages of identification, selection, evaluation, and synthesis of relevant literature. The analysis aimed to identify patterns of relationships, similarities, differences, and key findings across previous studies concerning training, human resources, digital organizational culture, and human resource information systems (HRIS). The synthesized findings were subsequently interpreted to develop a conceptual framework and research propositions explaining how training, human resources, and digital organizational culture influence HRIS implementation in transportation and logistics companies. Furthermore, the synthesis provided a theoretical foundation for formulating hypotheses and identifying potential relationships among the variables for subsequent quantitative research. This analytical process followed a structured literature-based approach to ensure consistency, relevance, and alignment with the research objective (Hennink, M. M., Hutter, I., & Bailey, 2020).

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Human Resource Information System

A Human Resource Information System (HRIS) is a technology-based information system designed to integrate all human resource management activities into a structured, accurate, and efficient digital platform. HRIS serves as a tool for managing various administrative and strategic HR processes, such as recruitment, selection, employee data storage, attendance tracking, payroll, performance evaluations, training, career development, and workforce planning (Bal et al., 2022).

The indicators of the Human Resource Information System (HRIS) variable include three dimensions: 1) System quality, reflecting system effectiveness, stability, user-friendliness, and processing speed; 2) Information quality, describing the accuracy, completeness, relevance, and timeliness of information generated to support managerial decision-making; and 3) Service quality, indicating the provider's ability to deliver technical support, system maintenance, and user assistance for optimal system utilization (Panjaitan, 2023).

The human resource information system variables are relevant to previous studies conducted by: (Sadiq et al., 2022; Menant et al., 2021; Alkhwalid et al., 2023).

3.1.2. Training

Training is a systematically designed learning process aimed at enhancing employees' knowledge, skills, abilities, and work attitudes so they can perform their duties in accordance with job requirements and effectively achieve organizational goals. Training is one of the primary functions in human resource development because it helps individuals adapt to technological advancements, changes in the business environment, and the increasing competencies required by the organization (Susanto et al., 2025).

The indicators or dimensions of the training variable consist of three main aspects: 1) Relevance of materials, which measures the extent to which training content, curriculum, and materials correspond to actual job requirements and employee competency gaps. Relevant materials ensure that training provides practical knowledge and skills applicable to employees' responsibilities; 2) Delivery methods, which assess the effectiveness of instructional techniques, including digital self-paced learning (e-learning), practical simulations, and interactive workshops. Appropriate methods can enhance participant engagement, understanding, and knowledge retention; and 3) Training evaluation, which refers to the systematic assessment of training effectiveness in improving employee competencies, knowledge, skills, and changes in work behavior after training completion. These dimensions provide a comprehensive basis for evaluating training effectiveness (Susanto et al., 2025).

The training variables are relevant to previous studies conducted by: (Sawitri et al., 2023; Jumawan et al., 2023; AR, Muhammad Thamrin Saribanon et al., 2023).

3.1.3. Human Resources

Human resources (HR) refer to all individuals working within an organization and serve as the primary asset in driving various operational and strategic activities to achieve the organization's goals. HR is not only viewed as a workforce that performs tasks but also as human capital possessing knowledge, skills, experience, creativity, innovation, and the ability to create added value for the organization (Saputra, 2022).

The indicators or dimensions of the human resources variable consist of three main aspects: 1) Job competence, which refers to the integration of employees' theoretical knowledge, practical skills, and work attitudes required to perform their duties effectively; 2) Commitment, which reflects employees' emotional attachment, loyalty, and willingness to contribute their best efforts toward achieving organizational goals; and 3) Adaptability, which describes employees' ability to adjust effectively to changes in technology, work procedures, organizational systems, and the broader work environment. These dimensions provide a comprehensive basis for assessing human resource capabilities (Saputra & Mahaputra, 2022).

The human resources variable is relevant to previous studies conducted by: (Lubis & Adlina, 2025; Bina et al., 2021; Fhadhilah & Setyaningrum, 2023).

3.1.4. Digital Organizational Culture

A digital organizational culture is a set of values, norms, beliefs, behaviors, and work habits that support the use of digital technology as part of an organization's activities to foster innovation, collaboration, rapid decision-making, and the ability to adapt to changes in the business environment. Digital organizational culture emphasizes the importance of a digital mindset, continuous learning, data utilization, open communication, cross-functional collaboration, and the readiness of all organizational members to adopt digital technology to improve organizational performance (Kocak & Pawlowski, 2023).

The indicators or dimensions of the digital organizational culture variable consist of three main aspects: 1) Digital mindset, which refers to an individual's mindset and willingness to embrace technological change, utilize digital tools, and encourage innovation in performing work activities; 2) Digital collaboration, which describes the ability of organizational members to collaborate effectively through information and communication technologies, enabling faster communication, coordination, knowledge sharing, and teamwork across organizational units; and 3) Data-driven decision-making, which refers to the organization's capability to utilize digital data, information, and analytical insights as the basis for managerial decisions. This approach supports more objective, accurate, timely, and evidence-based decisions while reducing reliance on assumptions or subjective judgments (Serpa et al., 2022).

The variables of digital organizational culture are relevant to previous research conducted by: (Gerçek & Özveren, 2024; Serpa et al., 2022).

3.1.5. Previous Research

Based on the literature review above, the following previous studies relevant to this research were identified.

Table 2. Relevant Previous Studies

No	Author (Year)	Research Findings	Similarities with This Study	Differences from This Study	Hypothesis
1	(Podungge et al., 2024)	The Training variable influences the implementation of the Human Resource Information System (HRIS) at PT Bank Rakyat Indonesia Persero Tbk	The similarity with this study lies in the independent variable of Training and the dependent variable of the Human Resource Information System (HRIS)	The difference lies in the research subject, which is PT Bank Rakyat Indonesia Persero Tbk	H1
2	(Lubis & Adlina, 2025)	Human Resource variables and HR effectiveness influence the implementation of the Human Resource Information System (HRIS) at PT Bank Sumut	The similarity with this study lies in the independent variable—Human Resources—and the dependent variable—Human Resource Information System (HRIS)	The difference lies in the research subject, which is PT Bank Sumut	H2
3	(Bahri et al., 2024)	The Digital Organizational Culture variable influences the implementation of the Human Resource Information System (HRIS) in the education sector	A similarity with this study is the independent variable of Digital Organizational Culture and the dependent variable of the Human Resource Information System (HRIS)	The difference lies in the research subject, which focuses on the education sector	H3

3.2. Discussion

Based on the research question, research objectives, and previous research findings outlined above, the discussion in this study which focuses on HRIS in the transportation and logistics sector.

3.2.1. The Effect of Training on the Implementation of Human Resource Information Systems in Transportation and Logistics Companies

Based on a literature review and relevant previous studies, the results indicate that training influences the implementation of human resource information systems in transportation and logistics companies.

To enhance the effectiveness of Human Resource Information System (HRIS) implementation through training, management and leaders of transportation and logistics companies should focus on three key training indicators. First, relevance of content requires training curricula to address the operational complexities of Indonesia's logistics sector through practical simulations, including fleet scheduling based on driver fatigue limits, shipment tracking integration, and crew performance bonus calculations. Second, delivery methods should adopt flexible blended learning approaches to accommodate highly mobile workers, such as ship crews, truck drivers, and depot staff. Third, training evaluation should involve comprehensive post-training assessments to measure changes in employee competencies and work behavior.

Continuous implementation of these training dimensions can positively influence HRIS implementation. Regarding system quality, effective training enables employees to operate HRIS features accurately, reliably, and efficiently, including automated crew assignments based on certification validity. For information quality, consistent training improves data input accuracy across airports, ports, stations, and warehouses, supporting reliable workforce productivity information. Meanwhile, service quality can improve because well-trained employees can move beyond resolving basic technical issues toward providing strategic input for administrative feature development. Consequently, continuous training strengthens HRIS effectiveness and supports more integrated, efficient, and responsive logistics operations.

The results of this study are consistent with previous research conducted by the (Podungge et al., 2024), which found that training influences the implementation of human resource information systems in transportation and logistics companies.

3.2.2. The Influence of Human Resources on the Implementation of Human Resource Information Systems in Transportation and Logistics Companies

Based on a literature review and relevant prior research, the findings indicate that human resources influence the implementation of human resource information systems in companies in the transportation and logistics sector.

To improve the effectiveness of Human Resource Information System (HRIS) implementation through human resources, management and leaders of transportation and logistics companies should focus on three fundamental human resource indicators: job competencies, commitment, and adaptability. First, job competencies require organizations to ensure that employees at all levels, including couriers, fleet drivers, warehouse personnel, administrative staff, and headquarters management, possess adequate digital literacy and a functional understanding of digital logistics administrative workflows. Competent employees are better able to operate HRIS features accurately and integrate digital processes into daily activities.

Second, commitment involves developing employees' sense of ownership, responsibility, and emotional attachment toward the organization's digitalization objectives. Employees with strong commitment are more willing to transition from manual logistics manifest recording to digital platforms and consistently comply with organizational data-entry standards. Such commitment supports the sustainability of HRIS implementation and reduces resistance to technological change.

Third, adaptability emphasizes employees' flexibility in responding to technological developments, changing work procedures, and evolving organizational requirements. Adaptive employees are more capable of learning new digital applications, adjusting to system updates, and maintaining productivity during technological transitions.

Consistent attention to these three human resource dimensions can positively influence HRIS implementation. Regarding system quality, competent and adaptable employees can reduce operational disruptions caused by user errors and optimize advanced HRIS features, including automated monitoring of heavy equipment operator licenses and maritime safety certifications. Regarding information quality, employee commitment to disciplined data entry promotes consistent and accurate information across depots, warehouses, ports, and distribution hubs, enabling management to forecast workforce requirements more effectively during seasonal demand fluctuations. Finally, service quality improves when employees possess sufficient digital proficiency to utilize self-service functions, allowing administrative needs such as business travel claims, fuel reimbursements, leave applications, and other personnel services to be processed efficiently through the HRIS platform. Therefore, strengthening human resource capabilities, commitment, and adaptability is essential for achieving effective, reliable, and sustainable HRIS implementation in transportation and logistics companies.

The results of this study are consistent with previous research conducted by the (Lubis & Adlina, 2025), which found that human resources influence the implementation of human resource information systems in transportation and logistics companies.

3.2.3. The Influence of Digital Organizational Culture on the Implementation of Human Resource Information Systems in Transportation and Logistics Companies

Based on a literature review and relevant previous research, the findings indicate that digital organizational culture influences the implementation of human resource information systems in companies in the transportation and logistics sector.

To enhance the effectiveness of Human Resource Information System (HRIS) implementation through digital organizational culture, management and leaders of transportation and logistics companies should focus on three fundamental indicators: digital mindset, digital collaboration, and data-driven decision-making. First, digital mindset refers to developing a fundamental perspective and awareness across all organizational levels that digital technology is a strategic instrument for improving efficiency, productivity, and service quality rather than an additional workload. Management should continuously communicate the benefits of digital transformation and encourage employees to perceive HRIS as an integrated solution that simplifies administrative activities, improves accessibility, and supports more effective workforce management.

Second, digital collaboration emphasizes breaking down departmental silos and traditional bureaucratic barriers through technology-based communication and information integration. Transportation and logistics operations involve multiple units, including depots, warehouses, fleet management, ports, distribution centers, and headquarters. Therefore, HRIS should facilitate coordination among these units through a single digital ecosystem that enables transparent, real-time communication and information sharing. Effective digital collaboration can accelerate coordination, reduce duplication of administrative tasks, and improve organizational responsiveness to operational changes.

Third, data-driven decision-making involves developing a managerial culture that prioritizes valid, reliable, and relevant analytical data over personal intuition or subjective judgments. Management should encourage the systematic use of HRIS-generated information to evaluate employee performance, workforce availability, competency requirements, attendance, certification status, and operational workforce demands. Consequently, managerial decisions can become more objective, timely, and evidence-based.

Consistent implementation of these three dimensions of digital organizational culture can positively influence HRIS implementation. Regarding system quality, a digitally literate organizational environment encourages the development and utilization of reliable, stable, user-friendly, and responsive systems capable of handling complex operational requirements, including dynamic shift schedules for thousands of logistics employees. Regarding information quality, disciplined digital practices encourage employees to enter, verify, and update information consistently, ensuring that personnel availability, heavy equipment operator licenses, maritime safety certifications, and crew compliance records across distribution hubs remain accurate, timely, and unbiased. Finally, service quality improves because a strong digital culture encourages employees to utilize self-service HRIS functions. Administrative processes such as business travel expense claims, fuel reimbursement, leave applications, and crew approvals can therefore be processed more efficiently with minimal waiting time. Thus, digital organizational culture becomes a critical foundation for sustainable, integrated, and effective HRIS implementation.

The results of this study are consistent with previous research conducted by the (Bahri et al., 2024), which found that there is an influence of digital organizational culture on the implementation of human resource information systems in transportation and logistics companies.

3.2.4. Conceptual Framework

The conceptual framework was determined based on the research question, research objectives, and previous studies relevant to the subject matter of this literature review.

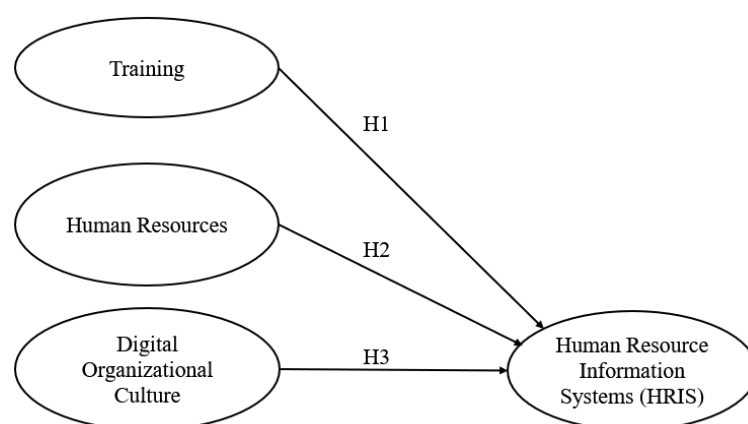


Figure 2. Conceptual Framework

Based on Figure 2 above, training, human resources, and digital organizational culture influence the implementation of human resource information systems in transportation and logistics companies in Indonesia.

However, in addition to the variables of training, human resources, and digital organizational culture that influence the implementation of human resource information systems, there are other influencing variables, including:

- a. Self-Awareness: (Rachman et al., 2021; Rasool et al., 2022; Najmi et al., 2025; Saputra et al., 2025).
- b. Empathy: (Liana et al., 2026; Arifin & Hermawan, 2022; Bhattacharya et al., 2023; Wasserbauer & Saputra, 2024).
- c. Affective Commitment: (Sitanggang et al., 2026; Gomes et al., 2023; Jiatong et al., 2022; Soesanto et al., 2023).

4. CONCLUSION

Based on the research objectives, research questions, findings, and discussion presented above, it can be concluded that training, human resources, and digital organizational culture play important roles in influencing the implementation of Human Resource Information Systems (HRIS) in companies operating in the transportation and logistics sector. First, training influences the implementation of HRIS, indicating that relevant training content, appropriate delivery methods, and systematic training evaluation can improve employees' ability to understand, operate, and utilize HRIS effectively. Second, human resources influence HRIS implementation, demonstrating that employee competencies, organizational commitment, and adaptability are essential in supporting the successful adoption and utilization of digital human resource systems. Finally, digital organizational culture influences HRIS implementation, suggesting that a strong digital mindset, effective digital collaboration, and data-driven decision-making can create an organizational environment that supports digital transformation. Overall, the findings indicate that successful HRIS implementation requires not only technological readiness but also continuous employee development and a supportive digital organizational culture. Therefore, transportation and logistics companies should integrate training, human resource development, and digital cultural transformation as complementary strategies to strengthen HRIS effectiveness, improve the quality of human resource management, and support sustainable organizational performance.

Future studies should also consider expanding the research population and sampling coverage to include different types of transportation and logistics organizations, such as freight forwarding companies, shipping companies, airlines, trucking operators, warehousing providers, port operators, courier and express delivery companies, and integrated logistics service providers. Broader sampling coverage may increase the generalizability of the findings and provide comparisons between organizations with different levels of digital maturity, organizational structures, operational complexity, and workforce characteristics. Researchers may also conduct comparative studies between regions or organizational scales to identify whether the influence of training, human resources, and digital organizational culture differs between large corporations, medium-sized enterprises, and smaller logistics companies.

Furthermore, future research may broaden the conceptual model by integrating relevant macro-level external variables, including government digitalization policies, technological infrastructure, industry competition, regulatory requirements, cybersecurity readiness, and digital transformation investment. These external factors may influence organizational readiness and the successful implementation of HRIS within the national logistics industry ecosystem. Researchers are also encouraged to investigate potential mediating and moderating variables that may explain more deeply how organizational and individual factors influence HRIS implementation. Variables such as ***self-awareness, empathy, affective commitment, digital readiness, leadership support, employee engagement, and organizational readiness for change*** may provide valuable perspectives. Examining these variables could produce a more comprehensive model that integrates technological, organizational, and human dimensions. Ultimately, future empirical research is expected to strengthen the theoretical contribution of this study while providing practical recommendations for transportation and logistics companies seeking to implement HRIS effectively, sustainably, and strategically. From a managerial perspective, the findings of this study confirm that the success of Human Resource Information System (HRIS) digitalization cannot be achieved simply by purchasing expensive, sophisticated, or technologically advanced HRIS software. Technology investment must be accompanied by proportional investment in employee development, particularly through structured, interactive, and continuous training programs. Management should recognize that HRIS implementation is not merely a technological project but also an organizational transformation process that requires employee readiness, competence, commitment, and adaptability. Therefore, transportation and logistics companies need to establish a balanced digital transformation budget that allocates sufficient resources for software development, infrastructure, system maintenance, cybersecurity, employee training, and post-implementation support.

Management must ensure that training materials are relevant to employees' actual responsibilities and capable of bridging digital competency gaps across different organizational levels. These gaps may exist between office administrators, human resource personnel, supervisors, warehouse employees, drivers, couriers, port workers, and other field operation crews. Training should therefore not rely solely on theoretical explanations of HRIS functions but should incorporate practical simulations based on real operational situations. For example,

employees can be trained to manage digital attendance records, employee leave applications, crew scheduling, certification monitoring, travel claims, performance records, and workforce allocation through the HRIS platform. Such practical training can increase employee confidence and reduce operational disruptions caused by misunderstanding or incorrect system utilization.

Management should also implement differentiated training strategies based on employee roles and levels of digital competency. Office-based employees may require more advanced training related to data analysis, reporting, and workforce planning, while field employees may need simple, practical instruction focused on self-service functions and accurate data entry. The adoption of blended learning, combining face-to-face instruction, e-learning, simulations, demonstrations, and post-training assistance, can provide greater flexibility for employees working in geographically dispersed transportation and logistics operations.

Furthermore, training effectiveness should be evaluated continuously rather than only at the end of a program. Management can monitor system usage, user errors, completion rates, data accuracy, employee feedback, and changes in work performance as indicators of training success. Employees who demonstrate difficulties should receive additional coaching or technical assistance. This continuous evaluation enables organizations to identify competency gaps and adjust training content according to technological developments and operational requirements.

Ultimately, effective HRIS implementation requires a strategic alignment between technology, people, and organizational processes. By balancing investment in HRIS technology with adequate investment in employee training and development, management can minimize human errors, improve system utilization, enhance data quality, and strengthen organizational productivity. This approach will enable transportation and logistics companies to achieve a more reliable, efficient, and sustainable digital human resource management system that supports long-term organizational competitiveness.

REFERENCES

- Alkhwaldi, A. F., Alobidyeen, B., Abdulmuhsin, A. A., & Al-Okaily, M. (2023). Investigating the antecedents of HRIS adoption in public sector organizations: integration of UTAUT and TTF. *International Journal of Organizational Analysis*, 31(7), 3251–3274. <https://doi.org/10.1108/IJOA-04-2022-3228>
- AR, Muhammad Thamrin Saribanon, E., Rahmawati, A., Sucipto, Y. D., & Susanto, P. C. (2023). Determinants of Employee Job Satisfaction and Performance: An Analysis of Competence, Training, and Job Experience. *International Journal of Artificial Intelligence Research*, 6(1.2).
- Arifin, A. L., & Hermawan, E. (2022). Portraying Cendekia Leadership from the Perspective of Ki Hajar Dewantara's Trilogy. *Al-Ishlah: Journal of Education*, 14 (1), 811–820. <https://doi.org/10.35445/alishlah.v14i1.1821>
- Bahri, D. Z. A., Basuki, B., & Zamrudi, Z. (2024). Integrating Human Resource Information Systems into Educational Institutions: A Framework for Digital Organizational Culture. *Al-Tanzim: Journal of Islamic Education Management*, 8(4), 1289–1301. <https://doi.org/10.33650/al-tanzim.v8i4.9638>
- Bal, Y., Bozkurt, S., & Ertemsir, E. (2022). The importance of using human resources information systems (HRIS) and a study on determining the success of HRIS. In *Strategic Human Resource Management at the Tertiary Level* (pp. 197–209). River Publishers.
- Bank, W. (2020). Enhancing government procurement transparency and efficiency: E-Procurement reform. <https://doi.org/10.1596/978-1-4648-1402-5>
- Bhattacharya, P., Mukhopadhyay, A., Saha, J., Samanta, B., Mondal, M., Bhattacharya, S., & Paul, S. (2023). Perception-satisfaction-based quality assessment of tourism and hospitality services in the Himalayan region: An application of the AHP-SERVQUAL approach on the Sandakphu Trail, West Bengal, India. *International Journal of Geoheritage and Parks*, 11 (2), 259–275. <https://doi.org/10.1016/j.ijgeop.2023.04.001>
- Bina, S., Mullins, J. K., & Petter, S. (2021). Examining Game-Based Approaches in Human Resources Recruitment and Selection: A Literature Review and Research Agenda. *Hawaii International Conference on System Sciences*, 1325. <https://doi.org/10.24251/HICSS.2021.161>
- Colie, H., & Barus, O. P. (2023). Evaluasi Faktor Pengaruh Penerimaan Pengguna Human Resource Information System (Hris) Pada Pt. Pelayaran Multi Jaya Samudera Dengan Metode Technology Acceptance Model. *Journal Information System Development (ISD)*, 8(2), 92-97. <https://doi.org/10.19166/isd.v8i2.653>

- Fhadhilah, D. R., & Setyaningrum, R. P. (2023). The Influence of Transformational Leadership and Green Human Resources Management on Business Sustainability, Mediated by Organizational Innovation, Among Millennial Employees at Tiara Cibarusah Cafés and Restaurants in Bekasi Regency. *Wahana Pendidikan Scientific Journal*, 9 (11), 102–113. <https://doi.org/10.5281/zenodo.8067559>
- Gerçek, M., & Özveren, C. G. (2024). Redefining Organizational Culture for the Digital Age: A Model Proposal for Digital Organizational Culture. *Yildiz Social Science Review*, 10(1), 54-71. <https://doi.org/10.51803/yssr.1455398>
- Giovany, A., & Almigo, N. (2026). Implementation of HRIS as a Human Resource Management Support System at PT X. *KAWANAD: Journal of Community Service*, 5 (1), 24–30. <https://doi.org/https://doi.org/10.56347/kjpkkm.v5i1.386>
- Gomes, J. F. S., Sabino, A., & Antunes, V. (2023). The Effect of Green Human Resources Management Practices on Employees' Affective Commitment and Work Engagement: The Moderating Role of Employees' Biospheric Value. *Sustainability (Switzerland)*, 15 (3). <https://doi.org/10.3390/su15032190>
- Hennink, M. M., Hutter, I., & Bailey, A. (2020). *Qualitative Research Methods*. Sage Publications.
- Indonesia, S. C. (2026). Transportation and Warehousing: Pillars of Economic Growth. Central Bureau of Statistics (BPS), Logistics News, Economy, Logistics Consulting Firms, Logistics Training Institutions, Logistics Research Institutions, Logistics Development Institutions, Logistics Assessment Institutions, Logistics, Logistics, Indonesian Logistics, Pillars, Per. <https://supplychainindonesia.com/transportasi-dan-pengudangan-penopang-pertumbuhan-ekonomi/>
- Jakarta, B. P. S. P. D. (2022). *DKI Jakarta Province Transportation Statistics 2022*.
- Jiatong, W., Wang, Z., Alam, M., Murad, M., Gul, F., & Gill, S. A. (2022). The Impact of Transformational Leadership on Affective Organizational Commitment and Job Performance: The Mediating Role of Employee Engagement. *Frontiers in Psychology*, 13 (April), 1–12. <https://doi.org/10.3389/fpsyg.2022.831060>
- Jumawan, J., Saputra, F., & Prabowo, P. B. (2023). Determinasi Pelatihan Florist dan Kualitas Pelayanan Kewirausahaan Pada Kejutbypugo Kota Bekasi. *OPTIMAL Jurnal Ekonomi Dan Manajemen*, 3(4), 216–227. <https://doi.org/10.55606/optimal.v3i4.2333>
- Kaswanti, F., & Veri, J. (2026). Strategi Inovasi Sdm Berbasis Teknologi Untuk Meningkatkan Daya Saing Organisasi di Era Artificial Intelligence. *Journal of Science Education and Management Business*, 5(1), 331–340. <https://doi.org/10.62357/joseamb.v5i1.882>
- Kocak, S., & Pawlowski, J. (2023). Characteristics in Digital Organizational Culture: A Literature Review. *KDIR*, 31-42. <https://doi.org/10.5220/0011530500003335>
- Liana, E., Susanto, P. C., Anita, S. Y., & Nuryanneti, I. (2026). Determinants of Aircrew Productivity: A Literature Review. *Journal of Management Research*, 4 (2), 229–243. <https://doi.org/https://doi.org/10.54066/jurma.v4i2.4115>
- Lubis, R. A., & Adlina, H. (2025). Penerapan Human Resources Information System (Hris) Dalam Meningkatkan Efektivitas Dan Efisiensi Sumber Daya Manusia. *Jurnal Ilmiah Wahana Pendidikan*, 11(4. D), 135-143.
- Menant, L., Gilibert, D., & Sauvezon, C. (2021). The application of acceptance models to human resource information systems: a literature review. *Frontiers in Psychology*, 12, 659421. <https://doi.org/10.3389/fpsyg.2021.659421>
- Mulyono, T., & Verawati, K. (2021). State of the Art: Core Competencies in the Maritime Transportation and Logistics Sector. *Logistics*, 14 (2), 80–101. <https://doi.org/10.21009/logistik.v14i2.23516>
- Najmi, A., Ismail, I., B, M. R., Agama, I., Al, I., & Pamekasan, K. (2025). Exploring the Meaning of Life for Gen Z Children in the Digital Age? *Abdurrauf Journal of Education and Islamic Studies*, 2 (1), 25–35. <https://doi.org/10.70742/arjeis.v2i1.382>

- Panjaitan, E. H. H. (2023). Implementing Human Resource Information System (HRIS) for Efficient Human Resource Management. *International Journal of Science and Society*, 5(2), 128-139. <https://doi.org/10.54783/ijssoc.v5i2.676>
- Pelindo. (2023). Logistics Costs in Indonesia Drop 40 Percent Over Five Years. Pelindo.Co.Id.
- Podungge, R., Biki, S. B., & Wagiu, S. S. (2024). Pengaruh Pelatihan dan Penerapan Human Resource Information System (HRIS) terhadap Kinerja Karyawan (Studi Kasus PT. Bank Rakyat Indonesia (Persero) Tbk. Cabang Gorontalo). *Innovative: Journal Of Social Science Research*, 4(2), 6318–6327. Retrieved from <https://j-innovative.org/index.php/Innovative/article/view/7071>
- Pradnyaswari, K. A. A., & Wijanarko, A. (2026). Analisis faktor resistensi karyawan terhadap penggunaan HRIS menggunakan innovation resistance theory. *Entrepreneurship, Business, Management, and Accounting (E-BISMA)*, 116–136. <https://doi.org/10.37631/ebisma.v7i1.2325>
- Purwantono, R. A. (2025). Inovasi Transformasi Digital Holistik di Jasa Raharja: Integrasi Sistem ERP, HRIS, dan Manajemen Data untuk Optimalisasi Layanan Publik. *Innovative: Journal Of Social Science Research*, 5(3), 1432–1446. <https://doi.org/10.31004/innovative.v5i3.18525>
- Rachman, T., Mujanah, S., & Susanti, N. (2021). Servant leadership, self awareness dan kompensasi pengaruhnya terhadap employee engagement dan kinerja karyawan pada puskesmas tanjungbumi madura. *Media Mahardhika*, 19(2), 361-371. <https://doi.org/10.29062/mahardhika.v19i2.260>
- Rasool, T., Warraich, N. F., & Sajid, M. (2022). Examining the Impact of Technology Overload at the Workplace: A Systematic Review. *SAGE Open*, 12 (3). <https://doi.org/10.1177/21582440221114320>
- Sadiq, U., Khan, A. F., Ikhtlaq, K., & Mujtaba, B. G. (2022). The impact of information systems on the performance of human resources department. *Strategic Human Resource Management at Tertiary Level*, 31-47.
- Saputra, F. (2022). Role of Human Resources, Hardware, and Databases in Mass Media Companies. *International Journal of Advanced Multidisciplinary*, 1(1), 47–55. <https://doi.org/10.38035/ijam.v1i1.10>
- Saputra, F., & Mahaputra, M. R. (2022). Effect of Job Satisfaction, Employee Loyalty, and Employee Leadership Style (A Literature Review on Human Resources). *Dinasti International Journal of Management Science*, 3 (4), 762–772. <https://doi.org/10.31933/DIJMS.V3I4.1324>
- Saputra, F., Satriawan, N., & Saputra, R. (2025). The Application of Security Management in Enhancing User Data Security in the Dana App. *Orbit: Jurnal Ilmu Multidisiplin Nusantara*, 1 (3), 142–154. <https://doi.org/https://doi.org/10.63217/orbit.v1i3.152>
- Sawitri, N. N., Susanto, P. C., Suroso, S., & Sihombing, S. (2023). Business Opportunities for a Human Resource Information System to Create Career Paths and Performance Evaluations. *East Asian Journal of Multidisciplinary Research*, 2 (4), 1505–1516. <https://doi.org/10.55927/eajmr.v2i4.3757>
- Serpa, S., Sá, M. J., & Ferreira, C. M. (2022). Digital organizational culture: Contributions to a definition and future challenges. *Academic Journal of Interdisciplinary Studies*, 11(4), 22–33. <https://doi.org/10.36941/ajis-2022-0095>
- Sitanggang, R., Setyawati, A., Sugiyanto, S., Wahyuni, R. E., Olfebri, O., & Susanto, P. C. (2026). The Model of Motivation, Organizational Commitment, Organizational Culture, and Leadership on Turnover through Job Satisfaction. *Dinasti International Journal of Education Management and Social Science*, 7 (4), 4093–4114. <https://doi.org/https://doi.org/10.38035/dijemss.v7i4>
- Soesanto, E., Saputra, F., Puspitasari, D., & Danaya, B. P. (2023). Determinasi Sistem Manajemen Sekuriti: Analisis Objek Vital, Pengamanan File dan Pengamanan Cyber pada Yayasan Siber Publisher. *Jurnal Ilmu Multidisiplin*, 2(1), 23–29. <https://doi.org/10.38035/jim.v2i1.221>
- Statistics, B. P. (2025). National Transportation Development, August 2021–2025. <https://www.bps.go.id/id/pressrelease/2023/10/02/2043/perkembangan-transportasi-nasional-agustus-2023.html>

- Susanto, P. C., Darwisman, S., & Widiyanto, P. (2026). Determination of Employee Job Satisfaction and Productivity of Port Loading and Unloading Workers: A Literature Review. *Journal of Information Systems and Business Management*, 5 (2), 38–61. <https://doi.org/https://doi.org/10.55606/jupsim.v5i2.6598>
- Susanto, P. C., Murdiono, J., & Susita, D. (2025). Analysis of Training, Self-Efficacy, and Discipline on Employee Performance Mediated by Employee Engagement: A Study in Freight Forwarding. *Bulletin of Counseling and Psychotherapy*, 7(1).
- Susanto, P. C., Soehaditama, J. P., Soekirman, A., Suhendra, A., Valentin, A. D., & Sismiati, S. (2025). Concepts of Qualitative Research: Literature Review, Case Study, Ethnographic Approach, Informants, In-Depth Interviews, and Focus Group Discussions. *Journal of Management, Entrepreneurship, Business, and Digital Innovation*, 2 (2), 1–16. <https://doi.org/https://doi.org/10.61132/jimakebidi.v2i2.485>
- Susanto, P. C., Suroso, S., Sulistyowati, A., & Manrejo, S. (2025). Analysis of Coaching, Mentoring, and Training on Employee Productivity Mediated by Employee Engagement. (2025). *The International Conference on Sustainable Economics Management and Accounting Proceeding*, 1(1), 4246-4269. <https://doi.org/10.32424/icsema.1.1.459>
- Wasserbauer, M., & Saputra, F. (2024). Factors Affecting Generation Z Employee Performance: Analysis of Organizational Culture, Leadership Style, and Information Technology. *International Journal of Advanced Multidisciplinary (IJAM)*, 2 (4), 1116–1126. <https://doi.org/https://doi.org/10.38035/ijam.v2i4>
- Zulfikar, R., Sari, F. P., Fatmayati, A., Wandiri, K., Haryati, T., Jumini, S., Nurjanah, Annisa, S., Kusumawardhani, O. B., Mutiah, R., Linggi, A. I., & Fadilah, H. (2024). *Quantitative Research Methods (Theory, Methods and Practice)*. Quantitative Research Methods, 1st ed., Widina Media Utama.