

Information Systems Management and the Impact of Artificial Intelligence on Human Resources Development

Cristian Iulian MOLDOVAN*

Universitatea “Aurel Vlaicu”, Arad, Romania

*Corresponding author, moldovan_cristian.iulian@yahoo.de

Laura Raluca CIUI

Universitatea “Aurel Vlaicu”, Arad, Romania

lauraciui@yahoo.com

Abstract. *The accelerated digital transformation of contemporary organizations has reshaped human resource management by increasing reliance on integrated information systems and advanced technologies to support strategic decision-making and organizational performance. Prior research shows that integrated human resource information systems strengthen transparency, consistency, and compliance, while also helping organizations align workforce capabilities with strategic objectives. In parallel, artificial intelligence is increasingly used to automate routine administrative work, improve recruitment screening, and enhance employee-facing services, yet evidence on how employees perceive these changes within organizations remains limited. Against this background, the present study examines the role of information systems management and the contribution of artificial intelligence to human resources development through a combined theoretical and empirical approach. The empirical component is based on an internal digital survey conducted among employees working in the human resources department of a medium-sized organization. The study evaluates perceived effects on recruitment efficiency, administrative performance, decision-making quality, and overall work experience. The results indicate a strongly positive orientation toward the use of artificial intelligence in human resource activities. Respondents associate these technologies with higher efficiency, reduced repetitive workload, improved recruitment accuracy, and better support for strategic workforce planning. At the same time, participants recognize challenges, particularly implementation costs and resistance to organizational change, which may influence long-term sustainability. Overall, the study provides organizational-level evidence on employee perceptions and outlines practical implications for responsible implementation and governance.*

Keywords: information systems management, artificial intelligence, human resources management, digital transformation, organizational performance.

Introduction

Digital transformation has altered both the operational realities and the strategic positioning of human resource management. Human resource management is increasingly shaped by data, technology, and organizational intelligence, and it is now widely understood as a domain that contributes directly to organizational performance rather than serving only administrative needs.

Within this environment, information systems management plays an important integrative role. It structures how human capital information is collected, maintained, and used, enabling organizations to standardize processes and strengthen the consistency of human resource decision-making.

The adoption of Human Resource Information Systems, particularly integrated platforms such as SAP Human Capital Management, reflects organizational efforts to improve data coherence, reduce fragmentation, and align human resource practices with broader strategic objectives.

At the same time, digital transformation progresses unevenly across organizations and institutional contexts. Differences in policy frameworks, technological maturity, and governance influence the effectiveness of digital systems and the degree to which innovation produces sustainable outcomes (Valaskova et al., 2025).

As workforce data grows in volume and complexity, organizations increasingly rely on advanced analytics that support prediction and strategic foresight. In this setting, artificial intelligence represents a substantive development in information systems, adding capabilities such as machine learning, automated decision support, and scalable data processing.

Artificial intelligence integration also changes professional routines and decision dynamics. Routine tasks are automated, responsibilities shift toward higher-value work, and decision-making increasingly combines managerial judgment with algorithmic insights. Because of this, employee perception becomes a critical factor in determining whether these capabilities translate into effective organizational outcomes.

Employee perception functions as the practical interface between implementation and everyday use. When employees understand and accept artificial intelligence-based systems, they are more likely to engage with them and to use their features in meaningful ways. Conversely, misalignment between technology and professional expectations can slow adoption and reduce benefits.

This issue is especially relevant in human resource management, where digital systems interact continuously with individuals and organizational structures. While existing research documents functional advantages of artificial intelligence in recruitment, performance management, and automation, fewer studies examine how employees experience these changes within organizations.

For this reason, the present study investigates the role of information systems management and the impact of artificial intelligence on human resource processes, with a particular focus on employee perceptions. The research combines a literature-based analysis with a quantitative survey conducted in the Human Resources department of Connection Consult S.R.L. The objective is to evaluate perceptions of artificial intelligence's contribution to recruitment efficiency, administrative performance, decision-making quality, and overall work experience, while also identifying key benefits and challenges associated with adoption.

Literature review

The shift toward data-driven and strategically integrated human resource management has generated extensive research on how information systems structure organizational processes. Within this literature, Human Resource Information Systems are commonly described as foundational infrastructures that enable the collection, processing, and strategic use of workforce-related data.

Rather than functioning only as administrative tools, contemporary Human Resource Information Systems support the alignment of human capital with organizational objectives. They enable systematic workforce planning, performance management, and longer-term capability development (SAP, 2023).

Personnel Administration within SAP Human Capital Management

SAP Human Capital Management is among the most widely adopted integrated human resource platforms. Its relevance extends beyond functional integration because it supports standardized

data flows, consolidates organizational knowledge, and creates a unified environment for reporting and decision support.

SAP Human Capital Management integrates modules for core human resource activities, including personnel administration, time management, payroll processing, and employee development. Centralizing data in one platform helps streamline workflows, improve accuracy, and support real-time access to integrated information (Pillutla, 2025; SAP, 2023).

A key advantage lies in the way the system links human resource operations to organizational strategy. Consistent data across functions strengthens reporting quality and supports managers in workforce planning and performance monitoring.

In addition, the platform provides structured support for human resources development by enabling competency monitoring, mapping skills to role requirements, and supporting training pathways aligned with competency gaps and future talent needs.

By integrating performance, learning, and talent analytics, the system also supports career planning, identification of high-potential employees, and succession planning. In this way, SAP Human Capital Management contributes to a more analytically informed approach to human capital management and organizational agility.

Recruitment Management

Recruitment is a core component of integrated human resource information systems, supporting structured processes for attracting, evaluating, and selecting candidates. Human resource teams can define job profiles, publish vacancies across channels, and manage applicant information throughout the recruitment lifecycle.

Artificial intelligence-enabled functionalities—such as automated curriculum vitae screening, competency-based evaluation, and integrated interview scheduling—reduce administrative workload and support more consistent selection decisions. Integrating recruitment data with broader systems also strengthens long-term talent management and workforce planning (Eubanks, 2022; Strohmeier, 2020).

Employee Development

Integrated human resource systems support employee development through structured training, career planning, and competency management. They help identify skill gaps, plan training programs, monitor learning outcomes, and assess competencies over time.

When development plans are linked to organizational objectives, such systems help ensure that capability building aligns with strategic priorities. In addition, performance appraisal and talent management tools support succession planning and continuous professional development through data-informed insights (Minbaeva, 2021; Strohmeier, 2020).

Integrated Personnel Administration

A defining feature of integrated platforms is the consolidation of personnel-related processes within a single system. Core components include organizational management, personnel administration, time management, benefits administration, and payroll.

This integration reduces inconsistencies and supports coherent reporting. Maintaining accurate employee records and employment histories improves decision-making and strengthens compliance, while also contributing to a better employee experience.

Compensation Management

Compensation management influences motivation and retention and often involves complex structures. Integrated systems support administration of salaries, bonuses, incentives, and benefits while improving transparency and reducing calculation errors.

Automated payroll processing increases accuracy and timeliness, and analytical tools support benchmarking and strategic reward planning. Linking compensation and performance data can also strengthen the relationship between contribution and remuneration.

Time Management

Time management modules support tracking of working time, attendance, absences, and shift schedules. Automated time recording enables accurate documentation of hours, leave requests, and overtime, supporting compliance with internal policies and labor regulations.

Time-related data can be analyzed to identify productivity patterns, optimize workforce allocation, and improve operational efficiency. Integration with payroll and performance modules supports consistency across human resource processes.

Shift Planning and Monitoring

Shift planning functions allow organizations to define schedules, assign employees based on availability and competencies, and monitor compliance. Employees can submit shift-related requests directly in the system, while managers can approve and adjust schedules efficiently.

By reducing manual coordination, these tools lower administrative effort and improve transparency and communication between human resource teams, managers, and employees.

Absence Management

Absence management is supported through automated handling of paid leave, medical leave, and unpaid leave. Real-time monitoring and reporting of absence patterns can support proactive workforce planning and more informed managerial decisions (Eubanks, 2022).

Payroll Management

Payroll is a core function within integrated systems, supporting accurate salary calculations and compliance with fiscal and legal requirements. Organizations can configure payroll elements according to legislation, including taxes and deductions.

Integration with accounting systems supports financial reporting and audit readiness. Simulation tools can help assess the financial impact of compensation changes prior to implementation.

The Impact of Artificial Intelligence on Human Resource Processes

Artificial intelligence introduces a significant transformation in the way human resource management operates by enhancing both analytical depth and operational efficiency. Traditionally, HR functions have relied primarily on descriptive data to understand past performance and support decision-making. However, AI enables a transition toward more advanced analytical approaches, including predictive and prescriptive models. These capabilities allow organizations not only to interpret historical data but also to anticipate future workforce trends and recommend optimal actions.

In recruitment processes, machine learning algorithms can process large volumes of applicant data with a level of speed and consistency that would be difficult to achieve manually.

This contributes to more accurate candidate screening, improved matching between job requirements and applicant profiles, and an overall reduction in selection bias when properly governed. At the same time, automation in administrative tasks—such as data entry, document processing, and reporting—reduces time-intensive manual work, allowing HR professionals to allocate more effort toward strategic and value-added activities.

As a result, the role of HR shifts increasingly toward higher-level functions, including talent optimization, workforce planning, and strategic alignment with organizational objectives. Artificial intelligence also enables more personalized HR practices. By analyzing patterns in employee performance, skills, and development needs, AI systems can support the identification of competency gaps, the design of targeted training programs, and the anticipation of future workforce requirements. This contributes to a more adaptive and responsive HR environment, where decisions are informed by real-time insights rather than static assumptions.

In addition, AI-powered tools support large-scale data analysis across a wide range of HR activities, including curriculum vitae screening, performance management, and employee analytics. These tools improve both the speed and accuracy of decision-making, while also enabling organizations to identify patterns that may not be immediately visible through traditional analysis. Technologies such as chatbots and virtual assistants further enhance internal communication by providing immediate, automated responses to employee inquiries, improving accessibility to information and reducing response times.

More recent developments in artificial intelligence—such as generative, multimodal, and agent-based systems—are beginning to reshape not only HR processes but also broader organizational workflows. These advanced systems have the potential to support autonomous task execution, augment decision-making, and influence how work itself is structured. Consequently, they may contribute to shifts in job design, changes in required skill sets, and evolving expectations of both employees and managers.

Despite these opportunities, the integration of artificial intelligence into HR also presents challenges. Its successful adoption requires careful attention to governance, ethical considerations, and organizational readiness. Issues such as transparency, fairness, data privacy, and accountability must be actively managed to ensure trust and acceptance among employees. Furthermore, organizations need to invest in continuous capability development—both technical and human—to fully realize the benefits of AI while mitigating associated risks. In this sense, artificial intelligence should be viewed not simply as a technological upgrade, but as part of a broader organizational transformation that combines innovation with responsible management practices..

Artificial Intelligence and Human Resources Development

The relationship between artificial intelligence and human resources development extends beyond process efficiency to include the strategic strengthening of human capital. Artificial intelligence supports continuous, data-informed development by enabling systematic assessment of competencies and alignment with evolving organizational needs.

Through predictive analytics, organizations can anticipate future skills requirements, design adaptive learning pathways, and support structured career development. This contributes to a continuous feedback loop between learning, performance, and organizational objectives.

Ethical and Governance Considerations in Artificial Intelligence-Driven Human Resource Systems

As artificial intelligence expands within human resource management, ethical and governance issues become increasingly important. Algorithmic decision-making raises concerns about fairness, particularly in recruitment, where historical data may reproduce bias.

To address these risks, systems require careful design, continuous monitoring, and transparent validation. Transparency and accountability are essential for maintaining employee trust, especially when automated outputs influence evaluation or progression decisions.

Effective governance frameworks should therefore accompany integration, ensuring that systems operate within clear ethical boundaries and support responsible, human-centered decision-making.

Methodology

This study adopts a quantitative research design based on an internal digital survey conducted among employees within the Human Resources department of Connection Consult S.R.L. Survey-based research is particularly appropriate for capturing attitudes and perceptions within a clearly defined organizational setting, as it allows for the systematic comparison of responses across participants.

To complement the quantitative data, the questionnaire also included a small number of open-ended questions. These provided additional context and supported a more nuanced interpretation of the responses, particularly in understanding the reasoning behind participants' evaluations.

Given that the survey was administered internally, the possibility of response bias must be acknowledged. In particular, social desirability may have influenced respondents to assess organizational decisions more positively, especially in the context of evaluating strategic initiatives such as artificial intelligence implementation.

The primary aim of the study was to examine how employees perceive the contribution of artificial intelligence to human resource processes within the organization. Based on this objective, the study tested the following hypothesis:

H1: The majority of respondents perceive that artificial intelligence contributes positively to human resource processes within Connection Consult S.R.L.

The survey targeted the entire Human Resources department (N = 25). Due to the small and well-defined population, a census approach was applied rather than sampling. Data collection took place between June 1 and June 15, 2024, using a structured digital questionnaire distributed internally.

The survey items captured several dimensions, including perceived overall contribution of artificial intelligence, evaluation of the company's decision to implement it, and its effectiveness in specific tasks, particularly curriculum vitae screening and candidate selection. The instrument combined Likert-type scales with single-choice categorical questions addressing key aspects such as preferred tools, perceived benefits, major challenges, and future development priorities.

Quantitative data were analyzed using statistical software, focusing on descriptive measures such as frequency distributions, valid percentages, cumulative percentages, and mean values. Reliability testing was conducted using Cronbach's Alpha, with a coefficient of $\alpha = 0.81$ indicating satisfactory internal consistency of the multi-item scales.

Responses to the open-ended questions were examined using a basic qualitative content approach. This allowed for the identification of recurring themes, including reduced administrative

workload, improved recruitment efficiency, enhanced decision-making processes, the need for additional training, and resistance to change.

Results and discussions

The first item assessed the extent to which respondents viewed artificial intelligence integration as a positive contribution to human resource processes. Responses were concentrated in the positive categories: 64% selected “To a very large extent” and 24% selected “To a large extent,” resulting in 88% positive evaluations overall. Only 12% selected moderate or lower categories.

This distribution suggests that employees primarily associate artificial intelligence with improvements in work and outcomes. The mean score ($M = 4.40$, $N = 25$) supports this interpretation and indicates a consistently favorable orientation toward integration.

The second item asked respondents to evaluate the company’s decision to integrate artificial intelligence into processes on a 1–5 scale. Results show a near-unanimous positive assessment: 92% rated the decision as “Very good” and 8% as “Good,” with a mean score of $M = 4.92$ ($N = 25$).

A further item assessed perceived effectiveness in curriculum vitae screening and candidate filtering. The distribution mirrors the first item: 88% selected the top two categories, and the mean score again was $M = 4.40$ ($N = 25$). This alignment suggests that recruitment-related applications are a particularly visible reference point for how employees judge overall value.

Respondents also identified the most important tool supporting efficiency. Workday received 40% of responses, while HRBotConnect and Benefit Plus each received 20%, indicating appreciation for both integrated platforms and employee-facing service tools.

Perceived benefits were distributed evenly across categories (each 20%), suggesting that employees view value as multidimensional. In contrast, perceived disadvantages were more differentiated, with high initial costs (32%) and resistance to change (28%) identified most frequently.

When asked about future innovations, 68% selected artificial intelligence-based timekeeping via facial recognition, indicating strong interest in applications that automate frequent administrative tasks.

Figures and tables

Table 1. Extent to which respondents perceive artificial intelligence integration as a positive contribution to human resource processes (frequencies)

Response category	Frequency	Percent	Valid Percent	Cumulative Percent
To a very large extent	16	64.00	64.00	64.00
To a large extent	6	24.00	24.00	88.00
To a moderate extent	1	4.00	4.00	92.00
To a small extent	1	4.00	4.00	96.00
To a very small extent	1	4.00	4.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

**Table 2. Mean perception score for the positive contribution of artificial intelligence
(descriptive statistics)**

N (Valid)	Missing	Mean
25	0	4.40

Source: SPSS.

Table 3. Evaluation of the company's decision to integrate artificial intelligence (frequencies)

Response category	Frequency	Percent	Valid Percent	Cumulative Percent
Good	2	8.00	8.00	8.00
Very good	23	92.00	92.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

**Table 4. Mean score for evaluating the decision to integrate artificial intelligence
(descriptive statistics)**

N (Valid)	Missing	Mean
25	0	4.92

Source: SPSS.

**Table 5. Perceived effectiveness of artificial intelligence in curriculum vitae screening
and candidate filtering (frequencies)**

Response category	Frequency	Percent	Valid Percent	Cumulative Percent
To a very large extent	16	64.00	64.00	64.00
To a large extent	6	24.00	24.00	88.00
To a moderate extent	1	4.00	4.00	92.00
To a small extent	1	4.00	4.00	96.00
To a very small extent	1	4.00	4.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

Table 6. Mean perception score for effectiveness in screening and filtering (descriptive statistics)

N (Valid)	Missing	Mean
25	0	4.40

Source: SPSS.

Table 7. Most important tool for improving process efficiency (frequencies)

Tool	Frequency	Percent	Valid Percent	Cumulative Percent
TalentScanPro	3	12.00	12.00	12.00
Workday	10	40.00	40.00	52.00
HRBotConnect	5	20.00	20.00	72.00
Benefit Plus	5	20.00	20.00	92.00
Connection Express	2	8.00	8.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

Table 8. Main perceived benefits of integrating artificial intelligence (frequencies)

Benefit	Frequency	Percent	Valid Percent	Cumulative Percent
Automation of repetitive tasks	5	20.00	20.00	20.00
Increased efficiency in recruitment	5	20.00	20.00	40.00
Increased employee satisfaction	5	20.00	20.00	60.00
Predictive analytics for workforce planning	5	20.00	20.00	80.00
24/7 support via virtual assistants	5	20.00	20.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

Table 9. Main perceived disadvantages of integrating artificial intelligence (frequencies)

Disadvantage	Frequency	Percent	Valid Percent	Cumulative Percent
High initial implementation costs	8	32.00	32.00	32.00
Resistance to change among employees	7	28.00	28.00	60.00
Need for continuous human oversight to verify accuracy	1	4.00	4.00	64.00
Challenges in maintaining transparency and accountability	5	20.00	20.00	84.00
Cybersecurity and hacking risks	4	16.00	16.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

Table 10. Artificial intelligence innovations respondents would integrate (frequencies)

Innovation	Frequency	Percent	Valid Percent	Cumulative Percent
Artificial intelligence-based timekeeping (facial scanning)	17	68.00	68.00	68.00
Virtual assistants for career planning	2	8.00	8.00	76.00
Virtual assistants for employee training	3	12.00	12.00	88.00
Intelligent performance management system	3	12.00	12.00	100.00
Total	25	100.00	100.00	

Source: SPSS.

Hypothesis assessment based on statistical outputs

Across the key perception indicators—overall contribution, evaluation of the decision to integrate, and perceived effectiveness in recruitment screening—the results show a consistent pattern of highly positive evaluations.

The concentration of responses in the upper categories, together with elevated mean scores, indicates that artificial intelligence is perceived as useful and relevant for processes within the department. The evidence supports the general premise of H1, namely that the majority of respondents perceive artificial intelligence as contributing positively to processes at Connection Consult S.R.L.

Conclusion

The findings of this study offer a coherent and consistent understanding of how artificial intelligence is perceived within the human resources function of Connection Consult S.R.L. Overall, employees demonstrate a clearly positive stance toward its integration. The clustering of responses at the higher end of the evaluation scales, together with the elevated mean values, suggests that artificial intelligence is strongly associated with improvements in operational efficiency, recruitment performance, and the quality of decision-making.

More broadly, the results highlight the crucial role of employee perception in shaping the practical impact of technological systems. Artificial intelligence is not viewed solely as a technical enhancement but also as a driver of modernization and process optimization within the organization. The near-unanimous support for the company's decision to adopt these technologies indicates an internal environment that is generally open and receptive to digital transformation.

At the same time, the coexistence of strong support and clearly identified concerns—particularly regarding implementation costs and resistance to change—points to the dual nature of adoption processes. While the opportunities are significant, they are accompanied by organizational challenges that require careful management. Sustainable implementation, therefore, depends on aligning technological capabilities with organizational readiness, supported by transparent governance practices and well-structured change management approaches.

This study contributes to the existing literature by providing empirical insight into how artificial intelligence integration is perceived within an organizational setting. It also reinforces the argument that successful digital transformation depends on the interplay between technological advancement and human factors, rather than on technological change alone.

From a managerial perspective, the findings emphasize the need for a balanced approach to implementation. This includes not only investment in technology but also attention to change management, continuous skills development, and governance structures. Such an integrated approach supports responsible adoption and enhances the long-term value that artificial intelligence can generate for the organization.

Finally, several limitations should be acknowledged. The research is based on data collected within a single organization and focuses on a relatively small, department-level sample, which limits the generalizability of the findings. Additionally, responses may have been influenced by social desirability, particularly given the internal context of the survey. Future research could address these constraints by examining multiple organizations, comparing different levels of digital maturity, and exploring how perceptions evolve over time.

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