

UNIVERSIDAD NACIONAL DE SAN MARTÍN



Review article Artículo de revisión Jan-Jun, 2025

Artificial intelligence in enhancing human talent and knowledge management in organizations: a systematic review in Scopus

Inteligencia artificial en la mejora del talento humano y gestión del conocimiento en organizaciones: una revisión sistemática en Scopus

José del Carmen López-Urbina^{1*}

¹Graduate School, Universidad César Vallejo, Tarapoto Campus, Peru

Received: 03 Oct. 2024 | Accepted: 14 Dec. 2024 | Published: 20 Jan. 2025

Corresponding author*: dlopezur@ucvvirtual.edu.pe

How to cite this article: López-Urbina, J. C. (2025). Artificial intelligence in enhancing human talent and knowledge management in organizations: a systematic review in Scopus. *Revista Científica de Sistemas e Informática*, *5*(1), e889. https://doi.org/10.51252/rcsi.v5i1.889

ABSTRACT

This study analyzes the application of artificial intelligence (AI) in talent management and organizational knowledge through a systematic review of 50 scientific articles indexed in Scopus. A documentary review methodology was employed, with selection criteria based on relevance and recent contributions. The main AI applications identified include the optimization of administrative processes, the personalization of training programs, and data-driven strategic decision-making. Key approaches analyzed include machine learning, data mining, and expert systems, which have improved performance evaluation, personnel selection, and knowledge management. The results indicate that AI has increased efficiency in talent management, though challenges persist, such as data quality, organizational resistance, and biases in selection algorithms. The study concludes that AI adoption in human resources continues to grow, promoting more adaptive management models. However, it is essential to address its limitations through regulatory frameworks and oversight strategies to ensure an ethical, fair, and goal-aligned implementation within organizations.

Keywords: business management; knowledge automation; performance evaluation; technological innovation; workforce optimization

RESUMEN

Este estudio analiza la aplicación de la inteligencia artificial (IA) en la gestión del talento humano y el conocimiento organizacional mediante una revisión sistemática de 50 artículos científicos indexados en Scopus. Se empleó una metodología de revisión documental con criterios de selección basados en relevancia y actualidad. Se identificaron las principales aplicaciones de IA en la optimización de procesos administrativos, la personalización de programas de formación y la toma de decisiones estratégicas basadas en datos. Entre los enfoques analizados destacan el aprendizaje automático, la minería de datos y los sistemas expertos, los cuales han mejorado la evaluación del desempeño, la selección de personal y la gestión del conocimiento. Los resultados evidencian que la IA ha incrementado la eficiencia en la gestión del talento, aunque persisten desafíos como la calidad de los datos, la resistencia organizacional y los sesgos en los algoritmos de selección. Se concluye que la adopción de IA en recursos humanos sigue en crecimiento, promoviendo modelos de gestión más adaptativos. Sin embargo, es necesario abordar sus limitaciones mediante marcos normativos y estrategias de supervisión que garanticen una implementación ética, equitativa y alineada con los objetivos organizacionales.

Palabras clave: automatización del conocimiento; evaluación del desempeño; gestión empresarial; innovación tecnológica; optimización laboral

© The authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.





1. INTRODUCTION

The advancement of artificial intelligence (AI) has redefined how organizations manage human talent and knowledge, driving significant changes in decision-making and the optimization of internal processes (Haefner et al., 2021). Advanced tools such as machine learning, expert systems, and natural language processing have transformed competency identification, continuous training, and human capital retention, generating sustainable competitive advantages (Ekuma, 2024; Perifanis & Kitsios, 2023). Thanks to these innovations, companies have managed to personalize organizational learning and adapt their strategies to the new demands of the digital environment (Garrido-Moreno et al., 2024).

The interest in AI applications for talent and knowledge management has grown exponentially in recent years, becoming a key area of study in the business field (Fernandes França et al., 2023). Recent research has demonstrated that these technologies can enhance or even replace traditional evaluation and professional development methods, which often rely on manual and subjective processes (Jurāne-Brēmane, 2023; Swiecki et al., 2022). In contrast, intelligent systems enable the analysis of large volumes of real-time data, facilitating the identification of performance patterns and the personalization of training strategies that optimize team productivity (Soori et al., 2024).

However, integrating AI into organizational processes is not without difficulties, especially in contexts with varying levels of digitalization (Aldoseri et al., 2024). Resistance to change, lack of technological infrastructure, and a shortage of professionals trained in AI pose obstacles to its effective implementation (Hradecky et al., 2022). Additionally, factors such as company size, labor regulations, and corporate strategies influence the speed and scope of AI adoption, creating disparities in its utilization depending on the organizational context (Zamani, 2022).

Ethics and transparency in the use of AI for talent management constitute another critical challenge. Issues such as data privacy, algorithmic bias in selection processes, and the lack of clarity in automated decisions have sparked debates in the business and academic communities (Hunkenschroer & Luetge, 2022). Although these technologies promise greater objectivity by reducing human bias in talent evaluation, the opacity of certain algorithms and the risk of perpetuating pre-existing inequalities remain concerns that require concrete solutions (Özkiziltan & Hassel, 2021).

The analysis of recent research on AI applications in organizational management highlights both its benefits and limitations. Studies have shown that these tools optimize decision-making, personalize professional training, and facilitate knowledge retention within organizations (Nawaz et al., 2024; Wamba-Taguimdje et al., 2020). However, the lack of global standards and clear regulations has hindered homogeneous implementation, leading to differences in the effectiveness of these technologies depending on their application environment (AI-Faouri et al., 2024).

Given this landscape, it is essential to expand research that examines the impact of AI on talent and knowledge management from a comprehensive perspective. Current studies focus on determining how these technologies can contribute to more adaptive and inclusive management models (Gligorea et al., 2023; Piardi et al., 2024). The advancement of artificial intelligence and data analytics opens new opportunities for optimizing strategic talent planning, but its implementation must be approached with a critical perspective that ensures its ethical and efficient use (Murire, 2024; Tusquellas et al., 2024).



This review aims to examine the available scientific literature on the use of AI in talent and knowledge management within organizations. Through an analysis of studies indexed in databases such as Scopus, the main trends, knowledge gaps, and application opportunities will be identified. This study seeks to contribute to the development of innovative organizational strategies that promote a more effective use of these technologies in optimizing talent and managing business knowledge.

2. METHODS

To conduct this research, an exploratory systematic review was carried out, an approach that enables a structured analysis of the scientific literature and the identification of knowledge gaps within a specific field (Chigbu et al., 2023). This type of review facilitates the synthesis of relevant findings and the identification of new research directions (Snyder, 2019). According to Ojeda-Mera et al. (2024), its application contributes to organizing available information and establishing a well-founded basis for future research and strategic decision-making (Xiao & Watson, 2019).

The review process was structured following the methodological guidelines established by Carrera-Rivera et al. (2022), which comprise two main phases: planning and execution. In the planning phase, key elements of the review protocol were defined, including the formulation of research questions, identification of search terms and synonyms, selection of digital sources, establishment of inclusion and exclusion criteria, development of a checklist to assess study quality, and design of the data extraction form.

During the execution phase, specific search strings were constructed for application in Scopus, enabling the collection of relevant studies. A three-stage refinement process was then implemented: (1) removal of duplicate studies, (2) evaluation based on inclusion and exclusion criteria, and (3) assignment of quality scores. Only studies that met the established criteria and surpassed the quality threshold were considered for the final analysis.

Finally, the selected documents underwent a data extraction process to identify patterns, trends, and knowledge gaps in the literature. Based on these findings, the final report was developed, providing a structured synthesis of the impact of AI on talent management and organizational knowledge.

Research Questions

The following research questions were formulated:

P1: What are the main applications of AI in talent management within organizations?

P2: What AI approaches have been used to improve the identification, development, and retention of talent in corporate environments?

P3: How does AI contribute to the management and optimization of organizational knowledge?

P4: What AI models are employed in decision-making processes related to human talent and business knowledge?

P5: What are the main challenges and limitations in the implementation of AI for talent and knowledge management in organizations?



Search Strategy

To identify relevant articles, a search string was constructed based on key terms aligned with the study's objective. The search included concepts related to artificial intelligence, talent management, knowledge management, and organizational performance.

The initial search was conducted in the Scopus database using the following query:

("artificial intelligence" OR "AI" OR "machine learning" OR "deep learning") AND ("human talent" OR "talent management" OR "human resources" OR "workforce") AND ("knowledge management" OR "knowledge sharing" OR "information management" OR "intellectual capital") AND ("performance" OR "development" OR "training" OR "engagement").

This first search yielded 26301 results. To refine the selection and ensure relevance, inclusion and exclusion filters were applied, restricting the search to articles published between 2020 and 2023, written in English or Spanish, available in final versions, and sourced from indexed journals. Additionally, only studies containing exact keywords related to artificial intelligence, talent management, knowledge management, machine learning, or digital transformation were considered. After applying these filters, the number of documents was reduced to 1039.

The selection process was carried out in four stages. First, the search string was applied in Scopus, considering titles, abstracts, and keywords. Second, duplicate documents were removed, and studies meeting the inclusion and exclusion criteria were filtered. Third, a detailed reading of the selected articles was performed, and those specifically addressing the impact of artificial intelligence on talent management and knowledge management in organizations were chosen. Finally, the selected documents were organized in an Excel spreadsheet, recording relevant information such as code, title, journal, year of publication, DOI, application area, AI techniques used, and impact on organizational management. As a final result, 50 documents were selected for inclusion in the study.

3. RESULTS

The analysis of the reviewed literature allowed for the identification of various applications, approaches, contributions, models, and challenges associated with the implementation of artificial intelligence in talent management and organizational knowledge. Based on the extracted information, the findings were organized into five main categories, covering areas where AI is applied as well as the limitations organizations face in its adoption. The following sections present the detailed results for each of the research questions.

P1: What Are the Main Applications of AI in Talent Management Within Organizations?

According to the review, AI is applied in multiple areas of talent management, categorized into specific domains (Table 1). Automation of administrative processes and HR management is one of the most frequent applications, optimizing operational tasks, reducing manual workload, and improving efficiency in talent administration. This automation has facilitated the integration of advanced databases, real-time data analysis, and the digitalization of key processes, enhancing accuracy in personnel management. Optimization of recruitment, selection, and employee retention is another central aspect, where AI enables the analysis of large volumes of data to identify patterns in candidate selection, improving evaluation accuracy and reducing biases in decision-making. These applications have contributed to reducing hiring times and improving



talent retention by optimizing the alignment between employee competencies and job requirements.

Strategic decision-making and performance evaluation have benefited from AI-driven predictive analytics, facilitating the identification of workforce performance trends and enabling organizations to design strategies based on objective data. Advanced algorithms have enabled dynamic employee assessments, providing real-time insights into productivity, satisfaction, and potential attrition risks. In the personalization of training and learning programs, AI has enhanced content adaptability, tailoring educational materials to each employee's competencies and needs through machine learning models. Additionally, the use of neural networks and advanced algorithms has enabled the identification of behavioral patterns in the workforce, optimizing talent allocation and improving organizational planning. These applications have transformed talent management by increasing process efficiency, reducing uncertainty in decision-making, and fostering a more strategic approach to human capital administration.

AI Applications	Code
Automation of administrative processes and HR management	A1, A2, A3, A8, A9, A10, A23,
	A26, A27, A29, A30, A34, A38,
	A40, A42, A43, A44
	A1, A2, A5, A12, A18, A22, A26,
Optimization of employee recruitment, selection and retention	A28, A29, A31, A35, A37, A47,
	A49
Support in strategic decision-making and performance evaluation	A1, A3, A5, A6, A7, A8, A9, A10,
	A11, A12, A16, A17, A20, A21,
	A30, A31, A35, A45
Demonslization of training and learning programs based on Al	A2, A4, A5, A6, A12, A13, A39,
Personalization of training and learning programs based on AI	A40, A50
Dradictive analyzic and data mining for talent management	A3, A5, A7, A8, A10, A12, A17,
Predictive analysis and data mining for talent management	A18, A25, A28, A37, A41, A49
Neural networks and advanced algorithms applied to talent	A1, A3, A7, A11, A12, A16, A17,
management	A25, A27, A32, A38, A45, A46
Optimization of organizational knowledge and business learning	A3, A4, A6, A8, A12, A13, A16,
optimization of organizational knowledge and business learning	A33, A39, A42, A50
Production of hissory in decision making and talent evaluation	A9, A10, A12, A18, A28, A37,
Reduction of biases in decision-making and talent evaluation	A40, A44, A47
Implementation of AI in specific sectors and expert systems in HR	A4, A15, A20, A26, A27, A30,
	A34, A36
Other approaches in AI for talent management and	A14, A19, A24, A33, A41, A42,
organizational knowledge	A48, A50

Table 1. AI Applications in talent evaluation and development

P2: What AI Approaches Have Been Used to Improve the Identification, Development, and Retention of Talent in Corporate Environments?

AI approaches in talent management have evolved to enhance the identification, development, and retention of employees with greater precision and efficiency (Table 2). One of the most widely used approaches is the application of Machine Learning and data mining for talent prediction and evaluation, which enables organizations to anticipate workforce performance trends, predict employee turnover, and optimize human resource allocation. These models have been crucial in improving strategic decision-making in HR, reducing uncertainty, and enabling more effective



planning. Additionally, recommendation systems for training and professional development have strengthened organizational learning by personalizing training plans according to each employee's skills and needs, improving talent retention and alignment with organizational goals.

The integration of neural networks and advanced algorithms in talent management has facilitated the complex analysis of multiple factors influencing workplace performance, allowing for more objective and data-driven evaluations. Similarly, the optimization of training programs with AI and recommendation models has enabled the design of more effective learning strategies, identifying skill gaps and tailoring training content to individual and organizational needs. In recruitment and automation of talent evaluation, AI has streamlined personnel selection processes, improving candidate filtering and reducing biases in hiring. Lastly, the integration of AI with strategic tools and hybrid HR models has allowed organizations to combine traditional methodologies with AI-based approaches, enhancing talent management efficiency and improving decision-making in corporate environments. These approaches have redefined organizational strategies, increasing precision in talent selection and development, as well as improving long-term workforce planning.

AI Approaches	Code
Using Machine Learning and Data Mining for Talent Prediction and Assessment	A1, A2, A3, A5, A7, A8, A10, A12,
	A17, A18, A24, A26, A27, A28,
	A30, A32, A34, A36, A41, A45
Recommendation Systems for Training and Professional	A1, A2, A3, A4, A6, A7, A12, A35,
Development	A39, A40, A50
Neural Networks and Advanced Algorithms Applied to Talent	A1, A3, A7, A11, A12, A16, A27,
Management	A30, A32, A38, A45, A46
Optimizing Training Programs with AI and Recommendation	A2, A4, A5, A12, A13, A16, A28,
Models	A29, A30, A34, A44
Using AI for Staff Selection and Automation in Talent Assessment	A1, A5, A7, A11, A18, A20, A22
Integration of AI with Strategic Tools and Hybrid Models in HR	A6, A9, A10, A11, A19, A20, A21,
	A26, A27, A28, A29, A31, A35,
	A37, A47
Other AI Approaches for Talent Identification and Development	A14, A15, A23, A25, A33, A41,
	A42, A43, A48, A49

Table 2. AI Approaches Applied to Talent Management

P3: How Does AI Contribute to the Management and Optimization of Organizational Knowledge?

AI has transformed organizational knowledge management by optimizing the collection, structuring, and retrieval of information within companies (Table 3). One of its main contributions is the optimization of knowledge management, facilitating the automation of processes related to the storage, updating, and distribution of strategic information. Through pattern analysis and structuring of organizational data, AI enables the identification of hidden trends within large volumes of information, improving the organization and categorization of corporate knowledge. This has enhanced access to critical data and led to the creation of more efficient systems for knowledge management.

Another fundamental aspect is data-driven strategic decision-making, where AI has strengthened the ability of organizational leaders to evaluate real-time information for business planning. Likewise, the optimization of access and retrieval of information has improved the efficiency of data search and consultation, allowing employees to quickly access key resources for decision-



making. The development of AI-powered knowledge management platforms has established an ecosystem of tools that facilitate organizational learning and knowledge transfer among teams. Additionally, improvements in the organization and structuring of knowledge have automated categorization and storage processes, reducing redundancies and ensuring the availability of relevant information. These advancements have redefined how organizations manage internal knowledge, promoting more efficient models of learning, decision-making, and strategic collaboration.

AI Contributions	Code
Optimizing organizational knowledge management	A1, A2, A3, A6, A8, A12, A13,
	A16, A26, A27, A29, A31, A34,
	A38
Analyzing nothering and structuring argonizational data	A3, A4, A6, A8, A12, A13, A17,
Analyzing patterns and structuring organizational data	A26, A28, A30, A32, A36, A41
Optimizing access and retrieval of information	A3, A4, A6, A8, A12, A16
Data-based strategic decision making	A1, A2, A5, A7, A8, A10, A12,
	A17, A26, A29, A31, A35, A37,
	A40
Support platforms for knowledge management	A2, A4, A6, A9, A12, A16, A26,
	A29, A31, A35, A37, A40
Improving the organization and structuring of knowledge	A1, A3, A6, A8, A12, A13, A27,
	A32, A38, A45, A46
Optimizing organizational learning	A33, A39, A42, A50
Reducing bias in performance evaluation	A9, A10, A12, A18
Other approaches to organizational knowledge management	A5, A7, A11, A14, A15, A19, A20,
	A21, A22, A23, A24, A25, A41,
	A43, A44, A47, A48, A49

Table 3. AI Contributions to Knowledge Management

P4: What AI Models Are Employed in Decision-Making Processes Related to Human Talent and Business Knowledge?

AI models applied to decision-making in talent management and business knowledge are categorized based on their functionality and approach (Table 4). One of the most widely used is Machine Learning and Big Data for recommendation systems, which enables the analysis of large datasets to identify patterns in talent allocation, performance evaluation, and the personalization of training programs. These systems have optimized decision-making in human resources by improving the accuracy of employee selection and predicting organizational needs. Additionally, Natural Language Processing (NLP) and data mining have facilitated the analysis of unstructured information, such as documents, resumes, and employee satisfaction surveys, providing valuable insights for strategic planning and knowledge management.

Deep neural networks and advanced learning algorithms have been extensively applied to enhance talent identification, assess performance, and optimize role allocation within organizations. These models have proven effective in predicting job success and detecting early-stage issues in talent management. Similarly, expert systems and rule-based algorithms have enabled the structuring of automated decision-making processes, integrating AI-based methodologies to improve knowledge management and strategic planning. In the area of predictive models and data analysis, AI has been fundamental in anticipating workforce turnover trends, evaluating the impact of organizational



policies, and optimizing talent retention. AI-driven automation and intelligent planning have enhanced internal processes, enabling real-time data-driven decision-making and increasing operational efficiency within companies. These models have strengthened organizations' ability to manage their workforce strategically and sustainably, positioning AI as a key resource in decision-making.

5			
AI Models	Code		
Machine Learning and Big Data for Recommendation Systems	A1, A2, A3, A5, A7, A10, A12,		
	A17, A26, A28, A29, A30, A32,		
	A36, A41		
Natural Language Processing (NLP) and Data Mining	A1, A2, A4, A7, A9, A10, A12, A3,		
	A4, A6, A8, A12, A16		
Deep Neural Networks and Advanced Learning Algorithms	A1, A3, A7, A11, A12, A16, A17,		
	A27, A30, A32, A38, A45, A46		
Expert Systems and Rule-Based Algorithms	A1, A2, A4, A6, A9, A10, A11,		
	A12, A26, A27, A30, A34, A36,		
	A42		
Predictive Models and Data Analysis	A1, A3, A5, A7, A8, A12, A17,		
	A18, A28, A29, A37, A40, A44		

Automation and Intelligent Planning with AI

Other AI Models and Algorithms for Talent and Knowledge

Decisions

Table 4. AI Models Used in Decision-Making

P5: What Are the Main Challenges and Limitations in the Implementation of Artificial Intelligence for Talent and Knowledge Management in Organizations?

The main challenges in implementing artificial intelligence for talent and knowledge management in organizations fall into various categories, affecting both operational efficiency and the ethical and technological feasibility of these systems (Table 5). One of the most significant challenges is privacy and data security concerns, as AI processes sensitive employee and candidate information, requiring robust protection systems and compliance with data privacy regulations. Organizational resistance to change is another critical factor, as AI adoption in human resources can generate uncertainty among employees and managers, impacting acceptance and effective use of these technologies. Additionally, data quality and availability is a limiting factor, as AI models require structured, complete, and unbiased information to generate accurate and reliable results.

Another key challenge is the need for human oversight in AI, as although these systems can automate multiple processes, human intervention remains essential for validating strategic decisions and preventing critical errors. The costs of implementation and maintenance represent a barrier for many organizations, especially those with limited resources, as infrastructure, personnel training, and AI model updates require significant investments. Bias in selection and talent evaluation algorithms remains a major concern, as it can impact fairness in hiring and promotion processes. Furthermore, difficulties in integrating AI with traditional systems limit interoperability and reduce AI's overall efficiency in organizational environments. Ethical challenges in automated decision-making are also relevant, as a lack of transparency in algorithms can raise concerns about fairness and the reliability of AI-driven decisions. Lastly, the lack of AI training and education hinders its adoption and correct usage, making the transition to AI-based

A31, A35, A39, A42, A50 A13, A14, A15, A19, A20, A21,

A22, A23, A24, A25, A33, A41,

A43, A47, A48, A49



talent management more difficult. These challenges highlight the need to address technical, organizational, and ethical aspects to achieve an effective and sustainable AI implementation in talent and knowledge management.

Challenges and limitations in the implementation of AI	Code
Concerns about data privacy and security	A1, A2, A5, A7, A9, A10, A12,
	A18
Resistance to organizational change	A1, A4, A6, A8, A11, A14, A15,
	A19
Data quality and availability	A1, A3, A5, A7, A9, A12, A16,
	A18
Need for human supervision in AI	A1, A2, A3, A6, A10, A11, A13,
	A17
Implementation and maintenance costs	A1, A4, A5, A7, A8, A10, A12,
	A16
Biases in talent selection and evaluation algorithms	A7, A9, A10, A12, A18
Difficulties in integration with traditional systems	A4, A6, A8, A9, A15, A19, A20
Ethical challenges in automated decision making	A9, A10, A12, A14, A18
Lack of training and capacity building in AI	A5, A8, A11, A12, A15
Other challenges in implementing AI in talent management	A13, A14, A19, A21, A22, A23,
	A24, A25

Table 5. Challenges and Considerations in AI Implementation in HRM

The results demonstrate that artificial intelligence has significantly transformed talent management and organizational knowledge by optimizing administrative processes, enhancing strategic decision-making, and improving talent identification and development. Through approaches such as machine learning, data mining, and neural networks, AI has enabled the personalization of training, the prediction of workforce performance trends, and the automation of talent assessments. However, its implementation presents significant challenges, including data quality and security, organizational resistance, algorithmic biases, and the need for human oversight. Despite these limitations, AI integration in human resources continues to expand, driving a data-driven management model focused on continuous optimization, with the potential to redefine business strategies in an increasingly dynamic environment.

CONCLUSIONS

The study of artificial intelligence in talent management and organizational knowledge reveals a structural transformation in how companies optimize their selection, evaluation, and training processes. The implementation of machine learning models, data mining, and recommendation systems has enabled evidence-based decision-making, reducing uncertainty in human resource allocation and improving talent retention. Al's predictive capabilities have proven effective in the early detection of performance patterns and the personalization of professional development programs, contributing to better alignment between employee competencies and organizational objectives. However, the reliability of these models depends directly on the quality of the data used and the ability of organizations to integrate these tools into their traditional management systems.

Additionally, the automation of administrative processes and the structuring of organizational knowledge through deep neural networks, natural language processing, and advanced learning algorithms have optimized information accessibility, improving operational efficiency and



reducing workload in repetitive tasks. However, the implementation of AI in human resources faces critical challenges, such as data security and privacy, algorithmic bias, and resistance to organizational change, highlighting the importance of developing hybrid approaches that combine artificial intelligence with human oversight. These findings emphasize the need to establish ethical and regulatory frameworks that ensure the transparent and equitable application of these technologies, minimizing associated risks and ensuring their effective implementation in the corporate environment.

The continuous advancement of artificial intelligence in talent and knowledge management opens new opportunities to enhance efficiency and accuracy in strategic decision-making. In the future, the integration of generative AI, deep learning, and hybrid models could further improve the personalization of talent management, allowing for more precise predictions regarding employee performance and growth potential. Additionally, the development of explainable AI (XAI) systems will be essential to mitigate algorithmic biases and increase trust in automated decision-making. The evolution of these technologies also calls for an interdisciplinary approach that combines AI advancements with research in ethics, data governance, and organizational change management, ensuring that their application remains fair and aligned with principles of transparency and equity in the workplace.

FINANCING

The author did not receive any funding to conduct this study-article.

CONFLICT OF INTEREST

The author declares that he has no conflict of interest related to the development of the study.

AUTHORSHIP CONTRIBUTION

Conceptualization, data curation, formal analysis, research, visualization, writing - original draft, writing - correction and editing: Lopez-Urbina, J. D.

REFERENCES

- Al-Faouri, E. H., Abu Huson, Y., Aljawarneh, N. M., & Alqmool, T. jamil. (2024). The Role of Smart Human Resource Management in the Relationship between Technology Application and Innovation Performance. *Sustainability*, 16(11), 4747. https://doi.org/10.3390/su16114747
- Alam, M. S., Munira, K. S., Rahman, M. S., Uddin, M. A., & Akter, A. (2022). Artificial Intelligence (AI) for Talent Acquisition: Human Resource Professionals' Perspective. *International Journal of Human Capital and Information Technology Professionals*, 13(1). https://doi.org/10.4018/IJHCITP.303950
- Aldoseri, A., Al-Khalifa, K. N., & Hamouda, A. M. (2024). Methodological Approach to Assessing the Current State of Organizations for AI-Based Digital Transformation. *Applied System Innovation*, 7(1), 14. https://doi.org/10.3390/asi7010014
- Ammer, M. A., Ahmed, Z. A. T., Alsubari, S. N., Aldhyani, T. H. H., & Almaaytah, S. A. (2023). Application of Artificial Intelligence for Better Investment in Human Capital. *Mathematics*,



11(3). https://doi.org/10.3390/math11030612

- Aydın, E., & Turan, M. (2023). An AI-Based Shortlisting Model for Sustainability of Human Resource Management. *Sustainability (Switzerland)*, 15(3). https://doi.org/10.3390/su15032737
- Bhupathi, P., Prabu, S., & Goh, A. P. I. (2023). Artificial intelligence-enabled knowledge management using a multidimensional analytical framework of visualizations. *International Journal of Cognitive Computing in Engineering*, 4, 240–247. https://doi.org/10.1016/j.ijcce.2023.06.003
- Cai, C., & Chen, C. (2021). Optimization of Human Resource File Information Decision Support System Based on Cloud Computing. *Complexity*, 2021. https://doi.org/10.1155/2021/8919625
- Cao, C., & Zhang, Z. (2022). Machine Learning-Assisted Competency Modeling for Human Resource Management Jobs. *Mobile Information Systems*, 2022. https://doi.org/10.1155/2022/8380307
- Carrera-Rivera, A., Ochoa, W., Larrinaga, F., & Lasa, G. (2022). How-to conduct a systematic literature review: A quick guide for computer science research. *MethodsX*, *9*, 101895. https://doi.org/10.1016/j.mex.2022.101895
- Chang, K. (2020). Artificial intelligence in personnel management: the development of APM model. *Bottom Line*, *33*(4), 377–388. https://doi.org/10.1108/BL-08-2020-0055
- Chaudhary, M., Gaur, L., Jhanjhi, N. Z., Masud, M., & Aljahdali, S. (2022). Envisaging Employee Churn Using MCDM and Machine Learning. *Intelligent Automation and Soft Computing*, *33*(2), 1009–1024. https://doi.org/10.32604/iasc.2022.023417
- Chen, W., & Du, C. (2022). Human Resource Decision-Making and Recommendation Based on Hadoop Distributed Big Data Platform. *Mathematical Problems in Engineering*, 2022. https://doi.org/10.1155/2022/8325677
- Chen, Z. (2023a). Artificial Intelligence-Virtual Trainer: Innovative Didactics Aimed at Personalized Training Needs. *Journal of the Knowledge Economy*, *14*(2), 2007–2025. https://doi.org/10.1007/s13132-022-00985-0
- Chen, Z. (2023b). Collaboration among recruiters and artificial intelligence: removing human prejudices in employment. *Cognition, Technology and Work, 25*(1), 135–149. https://doi.org/10.1007/s10111-022-00716-0
- Chigbu, U. E., Atiku, S. O., & Du Plessis, C. C. (2023). The Science of Literature Reviews: Searching, Identifying, Selecting, and Synthesising. *Publications*, 11(1), 2. https://doi.org/10.3390/publications11010002
- Chowdhury, S., Dey, P., Joel-Edgar, S., Bhattacharya, S., Rodriguez-Espindola, O., Abadie, A., & Truong, L. (2023). Unlocking the value of artificial intelligence in human resource management through AI capability framework. *Human Resource Management Review*, 33(1). https://doi.org/10.1016/j.hrmr.2022.100899
- Ekuma, K. (2024). Artificial Intelligence and Automation in Human Resource Development: A Systematic Review. *Human Resource Development Review*, *23*(2), 199–229.



https://doi.org/10.1177/15344843231224009

- Fallucchi, F., Coladangelo, M., Giuliano, R., & De Luca, E. W. (2020). Predicting employee attrition using machine learning techniques. *Computers*, 9(4), 1–17. https://doi.org/10.3390/computers9040086
- Fernandes França, T. J., São Mamede, H., Pereira Barroso, J. M., & Pereira Duarte dos Santos, V. M. (2023). Artificial intelligence applied to potential assessment and talent identification in an organisational context. *Heliyon*, 9(4), e14694. https://doi.org/10.1016/j.heliyon.2023.e14694
- Garrido-Moreno, A., Martín-Rojas, R., & García-Morales, V. J. (2024). The key role of innovation and organizational resilience in improving business performance: A mixed-methods approach. *International Journal of Information Management*, *77*, 102777. https://doi.org/10.1016/j.ijinfomgt.2024.102777
- Giotopoulos, K. C., Michalopoulos, D., Karras, A., Karras, C., & Sioutas, S. (2023). Modelling and Analysis of Neuro Fuzzy Employee Ranking System in the Public Sector †. *Algorithms*, 16(3). https://doi.org/10.3390/a16030151
- Gligorea, I., Cioca, M., Oancea, R., Gorski, A.-T., Gorski, H., & Tudorache, P. (2023). Adaptive Learning Using Artificial Intelligence in e-Learning: A Literature Review. *Education Sciences*, 13(12), 1216. https://doi.org/10.3390/educsci13121216
- Gong, Y., Zhao, M., Wang, Q., & Lv, Z. (2022). Design and interactive performance of human resource management system based on artificial intelligence. *PLOS ONE*, 17(1), e0262398. https://doi.org/10.1371/journal.pone.0262398
- Goswami, M., Jain, S., Alam, T., Deifalla, A. F., Ragab, A. E., & Khargotra, R. (2023). Exploring the antecedents of AI adoption for effective HRM practices in the Indian pharmaceutical sector. *Frontiers in Pharmacology*, *14*. https://doi.org/10.3389/fphar.2023.1215706
- Graczyk-Kucharska, M., Olszewski, R., Golinski, M., Spychała, M., Szafranski, M., Weber, G. W., & Miadowicz, M. (2022). Human Resources Optimization with MARS and ANN: Innovation Geolocation Model for Generation Z. *Journal of Industrial and Management Optimization*, 18(6), 4093–4110. https://doi.org/10.3934/jimo.2021149
- Guo, Q. (2022). A Fuzzy Comprehensive Dynamic Evaluation Algorithm for Human Resource Quality Growth Based on Artificial Intelligence. *Mobile Information Systems*, 2022. https://doi.org/10.1155/2022/8402975
- Haefner, N., Wincent, J., Parida, V., & Gassmann, O. (2021). Artificial intelligence and innovation management: A review, framework, and research agenda. *Technological Forecasting and Social Change*, 162, 120392. https://doi.org/10.1016/j.techfore.2020.120392
- Hradecky, D., Kennell, J., Cai, W., & Davidson, R. (2022). Organizational readiness to adopt artificial intelligence in the exhibition sector in Western Europe. *International Journal of Information Management*, 65, 102497. https://doi.org/10.1016/j.ijinfomgt.2022.102497
- Huang, X., Yang, F., Zheng, J., Feng, C., & Zhang, L. (2023). Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*, 28(4), 598–610. https://doi.org/10.1016/j.apmrv.2023.04.004



- Hunkenschroer, A. L., & Luetge, C. (2022). Ethics of AI-Enabled Recruiting and Selection: A Review and Research Agenda. *Journal of Business Ethics*, *178*(4), 977–1007. https://doi.org/10.1007/s10551-022-05049-6
- Jarrahi, M. H., Askay, D., Eshraghi, A., & Smith, P. (2023). Artificial intelligence and knowledge management: A partnership between human and AI. *Business Horizons*, 66(1), 87–99. https://doi.org/10.1016/j.bushor.2022.03.002
- Jurāne-Brēmane, A. (2023). Digital Assessment in Technology-Enriched Education: Thematic Review. *Education Sciences*, *13*(5), 522. https://doi.org/10.3390/educsci13050522
- Kocjancic, L., & Gricar, S. (2023). Usage of AI in Sustainable Knowledge Management and Innovation Processes; Data Analytics in the Electricity Sector. *FinTech*, 2(4), 718–736. https://doi.org/10.3390/fintech2040040
- Leoste, J., Õun, T., Loogma, K., & San Martín López, J. (2021). Designing training programs to introduce emerging technologies to future workers—a pilot study based on the example of artificial intelligence enhanced robotics. *Mathematics*, 9(22). https://doi.org/10.3390/math9222876
- Li, N., Yan, Y., Yang, Y., & Gu, A. (2022). Artificial Intelligence Capability and Organizational Creativity: The Role of Knowledge Sharing and Organizational Cohesion. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.845277
- Ma, S., Xuan, S., & Liang, Y. (2022). Analysis Model of Human Resource Cross-Media Fusion Based on Deep Neural Network. *Computational Intelligence and Neuroscience*, 2022. https://doi.org/10.1155/2022/6069589
- Marín Díaz, G., Galán Hernández, J. J., & Galdón Salvador, J. L. (2023). Analyzing Employee Attrition Using Explainable AI for Strategic HR Decision-Making. *Mathematics*, 11(22). https://doi.org/10.3390/math11224677
- Martín-Hernández, P. (2023). Artificial Intelligence: The Present and Future of Human Resources Recruitment and Selection Processes †. *Engineering Proceedings*, 56(1). https://doi.org/10.3390/ASEC2023-15521
- Mihai, F., Aleca, O. E., & Gheorghe, M. (2023). Digital Transformation Based on AI Technologies in European Union Organizations. *Electronics (Switzerland)*, 12(11). https://doi.org/10.3390/electronics12112386
- Mikalef, P., Lemmer, K., Schaefer, C., Ylinen, M., Fjørtoft, S. O., Torvatn, H. Y., Gupta, M., & Niehaves, B. (2023). Examining how AI capabilities can foster organizational performance in public organizations. *Government Information Quarterly*, 40(2). https://doi.org/10.1016/j.giq.2022.101797
- Morandini, S., Fraboni, F., De Angelis, M., Puzzo, G., Giusino, D., & Pietrantoni, L. (2023). The Impact of Artificial Intelligence on Workers' Skills: Upskilling and Reskilling in Organisations. *Informing Science*, *26*, 39–68. https://doi.org/10.28945/5078
- Murire, O. T. (2024). Artificial Intelligence and Its Role in Shaping Organizational Work Practices and Culture. Administrative Sciences, 14(12), 316. https://doi.org/10.3390/admsci14120316



- Murugesan, U., Subramanian, P., Srivastava, S., & Dwivedi, A. (2023). A study of Artificial Intelligence impacts on Human Resource Digitalization in Industry 4.0. *Decision Analytics Journal*, 7. https://doi.org/10.1016/j.dajour.2023.100249
- Nawaz, N., Arunachalam, H., Pathi, B. K., & Gajenderan, V. (2024). The adoption of artificial intelligence in human resources management practices. *International Journal of Information Management Data Insights*, 4(1), 100208. https://doi.org/10.1016/j.jjimei.2023.100208
- Nuseir, M. T., & Refae, G. E. (2022). The role of artificial intelligence, marketing strategies, and organizational capabilities in organizational performance: The moderating role of organizational behavior. *Uncertain Supply Chain Management*, *10*(4), 1457–1466. https://doi.org/10.5267/j.uscm.2022.6.010
- Olan, F., Ogiemwonyi Arakpogun, E., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, U. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research*, 145, 605–615. https://doi.org/10.1016/j.jbusres.2022.03.008
- Özkiziltan, D., & Hassel, A. (2021). Artificial Intelligence at Work: An Overview of the Literature. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3796746
- Paigude, S., Pangarkar, S. C., Hundekari, S., Mali, M., Wanjale, K., & Dongre, Y. (2023). Potential of Artificial Intelligence in Boosting Employee Retention in the Human Resource Industry. *International Journal on Recent and Innovation Trends in Computing and Communication*, 11, 1–10. https://doi.org/10.17762/ijritcc.v11i3s.6149
- Perifanis, N.-A., & Kitsios, F. (2023). Investigating the Influence of Artificial Intelligence on Business Value in the Digital Era of Strategy: A Literature Review. *Information*, 14(2), 85. https://doi.org/10.3390/info14020085
- Pessach, D., Singer, G., Avrahami, D., Chalutz Ben-Gal, H., Shmueli, E., & Ben-Gal, I. (2020). Employees recruitment: A prescriptive analytics approach via machine learning and mathematical programming. *Decision Support Systems*, 134. https://doi.org/10.1016/j.dss.2020.113290
- Piardi, L., Leitão, P., Queiroz, J., & Pontes, J. (2024). Role of digital technologies to enhance the human integration in industrial cyber–physical systems. *Annual Reviews in Control*, 57, 100934. https://doi.org/10.1016/j.arcontrol.2024.100934
- Pourkhodabakhsh, N., Mamoudan, M. M., & Bozorgi-Amiri, A. (2023). Effective machine learning, Meta-heuristic algorithms and multi-criteria decision making to minimizing human resource turnover. *Applied Intelligence*, *53*(12), 16309–16331. https://doi.org/10.1007/s10489-022-04294-6
- Qahtani, E. H. A. L., & Alsmairat, M. A. K. (2023). Assisting artificial intelligence adoption drivers in human resources management: a mediation model. *Acta Logistica*, *10*(1), 141–150. https://doi.org/10.22306/al.v10i1.371
- Rath, M., Mishra, N., & Jayasuria, J. G. (2023). A Smart Human Resource Approach using Artificial Intelligence with Improved Employee Satisfaction for Better Sustainability in Organisation. *Evergreen*, 10(4), 2476–2482. https://doi.org/10.5109/7162009



- Rodgers, W., Murray, J. M., Stefanidis, A., Degbey, W. Y., & Tarba, S. Y. (2023). An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes. *Human Resource Management Review*, 33(1). https://doi.org/10.1016/j.hrmr.2022.100925
- Rožman, M., Oreški, D., & Tominc, P. (2022). Integrating artificial intelligence into a talent management model to increase the work engagement and performance of enterprises. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.1014434
- Rožman, M., Oreški, D., & Tominc, P. (2023). Artificial-Intelligence-Supported Reduction of Employees' Workload to Increase the Company's Performance in Today's VUCA Environment. Sustainability (Switzerland), 15(6). https://doi.org/10.3390/su15065019
- Shahzad, M. F., Xu, S., Naveed, W., Nusrat, S., & Zahid, I. (2023). Investigating the impact of artificial intelligence on human resource functions in the health sector of China: A mediated moderation model. *Heliyon*, 9(11). https://doi.org/10.1016/j.heliyon.2023.e21818
- Shrestha, Y. R., Krishna, V., & von Krogh, G. (2021). Augmenting organizational decision-making with deep learning algorithms: Principles, promises, and challenges. *Journal of Business Research*, *123*, 588–603. https://doi.org/10.1016/j.jbusres.2020.09.068
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039
- Soori, M., Jough, F. K. G., Dastres, R., & Arezoo, B. (2024). AI-Based Decision Support Systems in Industry 4.0, A Review. *Journal of Economy and Technology*. https://doi.org/10.1016/j.ject.2024.08.005
- Swiecki, Z., Khosravi, H., Chen, G., Martinez-Maldonado, R., Lodge, J. M., Milligan, S., Selwyn, N., & Gašević, D. (2022). Assessment in the age of artificial intelligence. *Computers and Education: Artificial Intelligence*, *3*, 100075. https://doi.org/10.1016/j.caeai.2022.100075
- Tominc, P., Oreški, D., & Rožman, M. (2023). Artificial Intelligence and Agility-Based Model for Successful Project Implementation and Company Competitiveness. *Information* (Switzerland), 14(6). https://doi.org/10.3390/info14060337
- Tusquellas, N., Palau, R., & Santiago, R. (2024). Analysis of the potential of artificial intelligence for professional development and talent management: A systematic literature review. *International Journal of Information Management Data Insights*, 4(2), 100288. https://doi.org/10.1016/j.jjimei.2024.100288
- Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2023). Role of ChatGPT and Skilled Workers for Business Sustainability: Leadership Motivation as the Moderator. *Sustainability (Switzerland)*, 15(16). https://doi.org/10.3390/su151612196
- Wamba-Taguimdje, S.-L., Fosso Wamba, S., Kala Kamdjoug, J. R., & Tchatchouang Wanko, C. E. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AIbased transformation projects. *Business Process Management Journal*, 26(7), 1893–1924. https://doi.org/10.1108/BPMJ-10-2019-0411
- Wu, Y., Wang, Z., & Wang, S. (2021). Human Resource Allocation Based on Fuzzy Data Mining Algorithm. *Complexity*, *2021*. https://doi.org/10.1155/2021/9489114



- Xiao, Y., & Watson, M. (2019). Guidance on Conducting a Systematic Literature Review. Journal of Planning Education and Research, 39(1), 93–112. https://doi.org/10.1177/0739456X17723971
- Xu, K. (2023). Research on Strategic Decision Model of Human Resource Management based on Biological Neural Network. *International Journal of Advanced Computer Science and Applications*, 14(8), 719–729. https://doi.org/10.14569/IJACSA.2023.0140880
- Yang, Y. (2022). Artificial intelligence-based organizational human resource management and operation system. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.962291
- Zamani, S. Z. (2022). Small and Medium Enterprises (SMEs) facing an evolving technological era: a systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, *25*(6), 735–757. https://doi.org/10.1108/EJIM-07-2021-0360
- Zirar, A., Ali, S. I., & Islam, N. (2023). Worker and workplace Artificial Intelligence (AI) coexistence: Emerging themes and research agenda. *Technovation*, 124. https://doi.org/10.1016/j.technovation.2023.102747

Annexes

Annexe A.1 Coding of selected articles

Code	Authors	Code	Authors
A1	(Rath et al., 2023)	A26	(Chang, 2020)
A2	(Huang et al., 2023)	A27	(Ma et al., 2022)
A3	(Bhupathi et al., 2023)	A28	(Fallucchi et al., 2020)
A4	(Shahzad et al., 2023)	A29	(Mihai et al., 2023)
A5	(Murugesan et al., 2023)	A30	(Martín-Hernández, 2023)
A6	(Zirar et al., 2023)	A31	(Kocjancic & Gricar, 2023)
A7	(Fernandes França et al., 2023)	A32	(Goswami et al., 2023)
A8	(Mikalef et al., 2023)	A33	(Li et al., 2022)
A9	(Rodgers et al., 2023)	A34	(Yang, 2022)
A10	(Chowdhury et al., 2023)	A35	(Rožman et al., 2022)
A11	(Xu, 2023)	A36	(W. Chen & Du, 2022)
A12	(Morandini et al., 2023)	A37	(Chaudhary et al., 2022)
A13	(Jarrahi et al., 2023)	A38	(Gong et al., 2022)
A14	(Nuseir & Refae, 2022)	A39	(Leoste et al., 2021)
A15	(Hradecky et al., 2022)	A40	(Ammer et al., 2023)
A16	(Olan et al., 2022)	A41	(Marín Díaz et al., 2023)
A17	(Shrestha et al., 2021)	A42	(Vrontis et al., 2023)
A18	(Pessach et al., 2020)	A43	(Rožman et al., 2023)
A19	(Qahtani & Alsmairat, 2023)	A44	(Aydın & Turan, 2023)
A20	(Giotopoulos et al., 2023)	A45	(Cao & Zhang, 2022)
A21	(Tominc et al., 2023)	A46	(Guo, 2022)
A22	(Alam et al., 2022)	A47	(Paigude et al., 2023)
A23	(Cai & Chen, 2021)	A48	(Z. Chen, 2023b)
A24	(Wu et al., 2021)	A49	(Pourkhodabakhsh et al., 2023)
A25	(Graczyk-Kucharska et al., 2022)	A50	(Z. Chen, 2023a)