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### ARTIFICIAL INTELLIGENCE TRENDS IN HUMAN RESOURCES MANAGEMENT: A SYSTEMATIC LITERATURE REVIEW

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### **Abstract**

Advances in technology and the need for efficiency in human resource management have fuelled the application of artificial intelligence (AI) in the context of HR management. This literature review investigates the recent developments of AI in HR management, covering AI applications in recruitment, employee selection, training, performance evaluation, and employee welfare management. By delving into the relevant literature, this research identifies the trends, challenges, and benefits of applying AI in various aspects of HR management. The results of this review provide in-depth insights into the role of AI in improving efficiency, equity, and productivity in HR management, while illustrating the future direction of AI research and implementation in the context of HR management.

Keywords: Artificial Intelligence; Human Resource Management;

### 1. Introduction

In today's era of technological advancement, Artificial Intelligence (AI) has become a field that attracts worldwide attention. Artificial Intelligence (AI) offers many advantages in various domains, including services, industry, and society (Huang &; Rust, 2018). From virtual assistants to driverless cars, AI has changed the way we work, learn, and interact. These advancements have opened the door for tremendous applications across a wide range of industries, from healthcare to transport to security. Advances in artificial intelligence technology have fundamentally changed the business landscape. And one of the areas where these changes are most visible is in human resource management.

Human resource management, as an integral part of corporate strategy, is rapidly adapting to these major technological changes. The significant benefits of AI in strategic decision-making in management information systems, while also emphasising the need for careful management to ensure data security and integrity (Ramadhana, 2024). In this context, artificial intelligence has become a catalyst to change the way organisations recruit, manage and develop their employees.

The use of artificial intelligence in human resource management is no longer just a futuristic concept, it has become a reality and is being adopted by many organisations



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across the globe. From recruitment processes powered by data analytics to personalised employee development, AI has opened up new possibilities and increased efficiency in many aspects of human resource management. In addition, AI offers great benefits in healthcare, as evidenced by the accelerated diagnosis and treatment of diseases such as COVID-19 (Syamsuddin et al., 2021).

Through deep learning and increased personalisation, AI enables companies to design training programs that meet individual needs, making training more effective and improving employee retention. In addition, AI-based customer service provides a competitive advantage in the market by providing a superior customer experience (Candy et al., 2022).

By considering the challenges and ethical considerations associated with the use of artificial intelligence in human resource management, including data security and employee privacy. By better understanding how artificial intelligence impacts human resource management, it is possible to better understand the opportunities and challenges associated with implementing this technology in organisations. Therefore, it is necessary to map the concept of Artificial Intelligence (AI) on human resource management. One appropriate method is to conduct a systematic literature review (SLR). This SLR research aims to answer the following research questions:

Q1. How does Artificial Intelligence fit into the scope of human resource management?

Q2. What impact does Artificial Intelligence have on human resource management? Previous SLR on Artificial Intelligence on human resource management was conducted by (Charlwood & Guenole, 2022). The promise of AI in HRM is immense, but there is a gap between this promise and the current reality (Tambe et al., 2019). Thus, this research is expected to contribute to the study of Artificial Intelligence, human resource management, its implications, benefits, and challenges in the context of enterprise management.

### 2. Literature Review

The history of AI in human resource management (HRM) has seen significant development in recent years. More and more companies are utilising AI for various HR functions, including talent acquisition, employee engagement, and cost efficiency (Malik et al., 2020). The use of AI in Human Resource Management is driven by its potential to enhance career capabilities, reduce workplace fatigue, and provide a personalised employee experience (Kong et al., 2021).

Additionally, AI can improve the effectiveness of HR functions such as recruitment by reducing cognitive biases in AI-powered recruitment systems (Soleimani et al., 2021), and its impact on employability in the healthcare ecosystem (Jain et al., 2021). The application of AI in HRM is also influenced by economic patterns and the transformative potential of cloud HR solutions (Wagner, 2020; Nalini, 2024).



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In addition, the ethical and legal implications of AI in software recruitment also received attention, focusing on the potential for discrimination in the labour market (Fernández-Martínez & Fernández, 2020). HR professionals' attitudes towards AI were analysed and surveys were conducted to gauge acceptance and willingness to adopt AI (Karacsony, 2022).

The spread of AI in HRM is uneven across regions on the practice and prospects of AI in Ukraine (Svitlana et al., 2022) and the relationship between the effectiveness of HRM capabilities and the use of AI in Ukraine (Baakeel, 2020). In addition, the factors influencing the application of AI in management institutions in India are also modelled, focusing on social impact and achieving better results (Priya et al., 2022). In summary, the history of AI in HRM is characterised by increasing research and practical applications aimed at improving various HR functions.

The application of AI is driven by its potential to improve professional performance, reduce workplace fatigue, and provide personalised experiences for employees. In addition, ethical, legal, and economic considerations play an important role in shaping the development of AI in HRM.

### 3. Methodology

This research utilises a qualitative method, using a Systematic Literature Review (SLR) approach. This study falls into the qualitative category as it involves reviewing published research and conducting a descriptive analysis of the topic. SLR involves a systematic way to collect, critically evaluate, integrate, and present findings from various research studies on a specific research question or topic of interest (López et al., 2021). SLR provides a methodical framework for identifying and synthesising qualitative evidence, ensuring that the research process is consistent and follows methodological conventions (Mays & Pope, 2000;, Mays & Pope, 1995).

### 3.1 Review Structure

This journal adopts a systematic review approach to examine the relationship between two important phenomena: artificial intelligence (AI) and human resource management (HRM). Through a thorough structured review of the existing literature, the authors aim to identify trends, insights, and knowledge gaps in the literature related to the use of AI in human resource management. We aim to use a systematic review approach to provide a deep and fundamental understanding of the relationship between artificial intelligence and human resource management.

### 3.2 Strategy

The next step was a systematic and comprehensive literature search. Relevant databases and relevant keywords were used to identify articles that met the inclusion criteria. The author chose the Scopus and Web of Science databases because they have high journal reputation and go through a rigorous selection process. The keywords used in conducting a systematic search were "Artificial Intelligence" AND "Human Resource Management". The selection of keywords is determined by the purpose of



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this systematic literature review research, which is to find out the relationship between artificial intelligence and human resource management. 2013-2023.

### 3.3. Study Selection

The study selection methodology has been reported following the Preferreds Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2010).

### 3.4. Journal selection and inclusion/exclusion criteria

The retrieved articles were then screened and evaluated to determine if they were eligible for inclusion in the review using inclusion and exclusion criteria. The inclusion criteria in this systematic literature review were as follows: 1) scientific papers, 2) written in English, 3) published in peer-reviewed journals, 4) research results containing training and reroutiment elements, 5) accessible in full.

The first search of the selected database using certain keywords resulted in 1,487 articles. The first step was to filter out duplicates, after which 136 articles were excluded from further filtering. The next screening step was to apply inclusion and exclusion criteria to the remaining 1351 articles. The first criterion was to remove articles written in languages other than English. As a result 26 articles were removed. The second criterion required articles to be published in peer-reviewed journals. As a result, 922 articles did not fulfil this criterion and were removed. The third criterion was to screen the article results. The screening ensured that one of the two elements must contain the keywords recruitment; training; in the article results. As a result, 336 articles did not fulfil this criterion and were removed. The final criterion was that the articles were fully downloadable. Although the researcher had limited the search to only fully accessible articles, some articles were not accessible in full text. As a result, 36 articles did not fulfil this criterion and were removed.

After applying the inclusion and exclusion criteria, the remaining 33 articles were subjected to the next screening procedure. To ensure objectivity in this systematic literature review, the full text of all articles was downloaded and analysed. Exhibit 1 illustrates some of the steps taken during the article search and implementation of the inclusion and exclusion criteria.



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Identification Records identified through database searching (n=1487)Records after duplicates removed (n=1351)Screening Records screened Written in other English (n=1325)language (n=26) Articles not published in peer-Full-text articles reviewed and nonassessed for eligibility empirical journals (n=67)(n=922)Did not contain keywords in the research results in the form of training Included Studies included in the and recruitment systematic review

Figure 1. inclusion and exclusion criteria steps.

### 4. Findings and Discussion

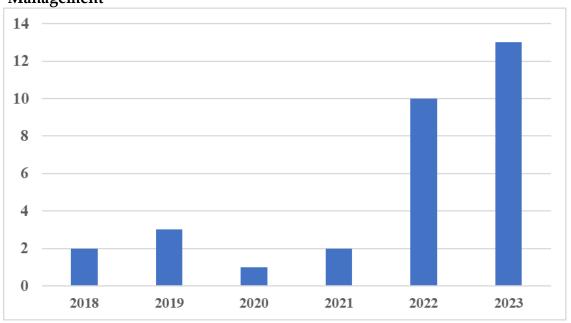
(n=31)

### 4.1 Development of Artificial Intelligence in Human Resource Management over the years

The first step in the systematic literature review process is to reveal the article's year of publication. Over the past 10 years, artificial intelligence showed its use in human resource management in 2018 (allen, et al., 2018). With an average count of three articles throughout 2018-2021. And the graph of the increase in the use of human intelligence in human resource management in 2022 and 2023. Because it coincides with the flow of the technology 5.0 era, the use of artificial intelligence continues to be intensified in any line of business. The growth is indicated by statistics showing that 50% of companies are already using AI. This research can illustrate that the growth that will occur in 2024 artificial intelligence will increase.

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Figure 2. Development of artificial intelligence topics in Human Resources Management



### 4.2. Journal Publications

The next step of this systematic literature review was to examine the journals that published articles related to artificial intelligence in human resource management. Almost all journals in the search strategy have quartiles between Q1, Q2, and Q3 and Q4. The most dominating journal scope is management. And the rest are spread across all journal scopes such as health, industry, sustainability to education. The journals used are also indexed by Web of Science and Scopus, where the data is not in doubt.

Table 1. Journals and number of publications

Journal	Number of papers	Author	Quartile	Wos indexed	Scopus indexed
Acta Logistica	1	Qahtani, E.H.A.L., Alsmairat, M.A.K.	Q3		<b>√</b>
Career Development International	1	Bartosiak, M.L., Modlinski, A.	Q1		<b>✓</b>
Discover Artificial Intelligence	1	Xivuri, K., Twinomurinzi, H.	Q3		~
European Journal Of	1	Bukartaite, R., Hooper, D.	Q2		<b>✓</b>

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Training And Development				
Evergreen	1	Rath, M., Mishra, N., Jayasuria, J.G.	Q3	✓
Foresight And STI Governance	1	Shayegan, S., Bazrkar, A., Yadegari, R.	Q1	✓
Frontiers In Psychology	1	Rožman, M., Oreški, D., Tominc, P.	Q2	✓
Human Resource Management Review	1	Budhwar, P. Human Resource Management Review	Q1	<b>✓</b>
Information (Switzerland)	1	Bauer, J.C., Wolff, M. Information (Switzerland)	Q2	<b>✓</b>
International Journal Of Human Resource Management	1	Malik, A., Budhwar, P., Patel, C., Srikanth, N.R.	Q1	<b>√</b>
International Journal Of Information Management Data Insights	1	Votto, A.M., Valecha, R., Najafirad, P., Rao, H.R.	Q1	<b>✓</b>
International Journal Of Manpower	1	Arslan, A., Cooper, C., Khan, Z., Golgeci, I., Ali, I.	Q1	<b>✓</b>
International Journal Of Recent Technology	1	Vinichenko, M.V. ,Rybakova, .V., Chulanova, .L., Makushkin, .A.,	Q4	<b>✓</b>

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And		Lobacheva, A.S.			
Engineering					
Journal Of		Mezhoudi,.,			
Ambient		Alghamdi, R,			
Intelligence	1	Aljunaid, R.,	Q1		✓
And	1	Krichna, G.,	Q1		
Humanized		Düştegör, D.			
Computing		Duştegor, D.			
Journal Of					
Chinese					
Human	1	Alan, H.	Q3		✓
Resource					
Management					
Journal Of					
Economics And	1	Santiago, J.K.	Q1		✓
Management					
		Graczyk-			
Journal Of	1	Kucharska, M.,			
Industrial And		Olszewski,R.,	0.4		,
Management		Golinski, M.,	Q4		✓
Optimization		Weber, G.W.,			
1		Miadowicz,M			
Journal Of		Soreny, C,			
Medical		Takhar, P.,			
Engineering	1	Vickers, E.,	Q4		✓
And		Harrison, A.,	~		
Technology		McDermott,C			
Journal Of Risk					
And Financial	1	Faqihi, A.,	Q2		✓
Management	-	Miah, S.J.	22		
Management					
Research	1	Kshetri, N.	Q1		✓
Review	-		Q1		
		Konovalova,			
	n   1	Mitrofanova,			
Wisdom		Mitrofanova,	Q1	Q1	<b>✓</b>
		Gevorgyan,			
		Gevorgyan,			

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			, , , , , , , , , , , , , , , , , , ,		1
Sustainability (Switzerland)	1	Oncioiu, I., Anton, E., Ifrim, A. M., & Mândricel, D. A.	Q3		✓
Journal Of Cancer Education	1	Niranjan, S. J., Durant, R. W., Wenzel, J. A., Cook, E. D.,	Q3	✓	
Journal f Human Sport and Excercise	1	Chistyakov, AA; Mashkin, NA; Shaidullina, AR	Q2	✓	
Mathematics	1	Ammer, M. A., Ahmed, Z. A. T., Alsubari, S. N., Aldhyani, T. H. H., & Almaaytah, S. A	Q2		<b>✓</b>
Pacific Asia Journal Of The Association For Information Systems	1	Gélinas, D., Sadreddin, A., & Vahidov, R.	Q2		<b>✓</b>
International Journal of Health Policy and Management	1	Sumah, AM and Baatiema, L	Q3	<b>✓</b>	
Business Strategy And The Environment	1	Ogbeibu, S., Emelifeonwu, J., Pereira, V., Oseghale, R., Gaskin, J., Sivarajah, U., & Gunasekaran, A.	Q1	<b>✓</b>	
Clinical Trials	1	Scherer, R. W., Sensinger, L. D., Sierra-Irizarry,	Q1	✓	



Residental

Treatment for

Children &

Youth

1

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Q1

		B., Formby, C.,				
		& Grp, T. R.				
		Allen, P., Jacob,				
Iournal Of	1	R. R.,		01	<i></i>	
Journal Of Community 1		Lakshman, M.,				
Health	1	Best, L. A., Bass,		Q1	•	
Health		K., & Brownson,				
		R. C.				

# 4.3 Results and Application of artificial intelligence in human resource management

Carvalhais, L

and

Formosinho, M

On the results of applying human intelligence to human resource management, it was found that Artificial Intelligence already has a hand in human resource management. Various applications of AI are applied, such as how introducing AI-enhanced chatbots that interact with customers and employees provides organisations with machines capable of learning and automatically adapting to the environment based on data received and processed. Their analysis provides insight into how automation of administrative tasks in employee onboarding, process improvement, and recruitment provides humans with the information, time, and psychological energy needed to make the right decisions for their organisation. assesses how an organisation can use chatbots to streamline administration and explores what technologies they can run on. It discusses how AI-enhanced chatbots can simulate comparable "human" conversations using NLP and machine learning processes to improve customer experience (Alexis, et al., 2021). AI supports acquiring and retaining talented employees, AI supports proper employee training and development, appropriate teams, AI-supported organisational culture, AI-supported leadership, reducing employee workload with AI has a positive effect on company performance and employee engagement. The results will help managers or owners create a successful work environment by implementing artificial intelligence in the company, leading to increased employee engagement and company performance (Rozman, 2022). Malik. A., (2022) says the use of AI-enabled bots, virtual, digital and personal assistants to perform various HRM tasks, such as routine, analytical, interactional and communicative tasks involving employees. These diverse HRM-focused AI applications operating in MNEs contribute to HR cost effectiveness and improve the overall employee experience, resulting in increased levels of commitment, satisfaction and reduced employee turnover behaviour.



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Table 2. Title, Number of Top Citations and Journal Results

	Number	Summary of Journal Results
Title	of	
	citations	
Assisting artificial intelligence adoption drivers in human resources management: a mediation model	8	This study investigates the drivers of artificial intelligence (AI) adoption and the mediating effect of trust and how the latter affects human resource management (HRM) of the banking sector in Saudi Arabia. A survey-based questionnaire was used to collect data from 261 practitioners and professionals working in various banks in Saudi Arabia. Partial least squares structural equation modelling (PLS-SEM) was used to analyse the data. The significant and positive effects of perceived usefulness and trust on the adoption of artificial intelligence in human resource management are highlighted by the results. In addition, the indirect effect of trust between perceived usefulness and adoption of AI in human resource management was also found to be significant.
Integrating artificial intelligence into a talent management model to increase the work engagement and performance of enterprises	11	AI supports acquiring and retaining talented employees, AI supports proper employee training and development, appropriate teams, AI-supported organisational culture, AI-supported leadership, reducing employee workload with AI has a positive effect on company performance and employee engagement. The results will help managers or owners create a successful working environment by implementing artificial intelligence in the company, leading to improved employee engagement and company performance. Namely, our results contribute to the efficient implementation of artificial intelligence into an enterprise and provide owners or top managers with broad insights into the different aspects that should be taken into account in business management to improve employee engagement and the competitive advantage of the enterprise.



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AI-augmented		Current literature on the use of disruptive
HRM:		innovative technologies, such as artificial
Antecedents,		
assimilation and		intelligence (AI) for human resource management
		(HRM) functions, lacks a theoretical basis for
multilevel		understanding. Furthermore, adoption and
consequences		implementation of AI-augmented HRM, which
		promises to provide several operational, relational
		and transformational benefits, has been patchy
		and incomplete at best. Integrating the technology,
		organization and people (TOP) framework with
		core elements of the theory of innovation
		assimilation and its impact on various outcomes of
	38	AI-Augmented HRM, or what we refer to as (HRM
		(AI)), this paper develops a coherent and
		integrated theoretical framework of HRM (AI)
		assimilation. Such a framework is timely due to
		several post-adoption challenges, such as the dark
		side of processual factors in innovation
		assimilation and system-level factors, which, if not
		taken care of, can lead to opacity of AI
		applications, thereby affecting the success of any
		HRM (AI). Our model proposes several future
		research propositions that could be tested to
		advance scholarship in this area. We conclude
		with implications for theory and practice.
May the bots be		Using an in-depth qualitative case study design,
with you!		focusing on subsidiaries of significant global
Delivering HR		technology consulting multinational companies
cost-effectiveness		(MNEs) in India, this research analyzes interview,
and		documentary, and observational data for insights
individualised		into the proliferation of artificial intelligence (AI)
employee		in human resource management (HRM). By
experiences in an	69	developing HRM-focused and AI-enabled
MNE		applications, MNEs are improving HR cost-
		effectiveness and offering highly personalized and
		individualized employee experiences. Using the
		theoretical lenses of individualization of HRM
		practices, AI-mediated social exchange, job
		signaling and person-organization fit theory, this
		research explains employees' experiences of HRM
		practices and their impact on their attitudes and



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		behavior. Ten interviews were conducted with global technology leaders, innovation champions, senior HR leaders and employees, including those involved in the design and implementation of HR-focused AI applications. Findings indicate the use of AI-enabled bots, virtual, digital and personal assistants to perform various HRM tasks, such as routine, analytical, interactional and communicative tasks involving employees. These various HRM-focused AI applications operating in MNEs contribute to HR cost effectiveness and improve the overall employee experience, resulting in increased levels of commitment, satisfaction and reduced employee turnover behavior. Implications for research and practice are also discussed.
Artificial Intelligence in Tactical Human Resource Management: A Systematic Literature Review	80	Digitalization in Human Resource Management (HRM) has resulted in Artificial Intelligence (AI) becoming increasingly prevalent in Human Resource Management Systems (HRMS) and HR Information Systems (HRIS). Tactical recruitment procedures, employee performance evaluation and satisfaction, compensation and benefits analysis, best practice analysis, discipline management, and employee training and development systems have seen growth in the incorporation of AI. To better understand this evolution, we sought to explore the sources of publications and literature that showcase the application of AI in HRM. By utilizing a systematic literature review methodology, this paper identifies which tactical HRIS (T-HRIS) components are represented in the literature and how each T-HRIS component is represented. This paper provides insight into which components of tactical HRM/HRIS are receiving attention and identifies gaps in research to provide direction for future research agendas.
Artificial intelligence and human workers	63	Interaction and collaboration between human workers and robots is seen in various industries and organizational functions, where both work as

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interaction at		team members. This poses a unique challenge for
team level: a		HRM functions in contemporary organizations
conceptual		where they need to overcome workers' fears of
assessment of the		working with AI, especially in relation to future
challenges and		job losses and the difficult dynamics associated
potential HRM		with building trust between human workers and
strategies		AI-enabled robots as members. team. Along with
		this, human workers' task fulfillment expectations
		with their AI-enabled robot counterparts need to
		be communicated and managed carefully by HRM
		staff to maintain a collaborative spirit, as well as
		future employee performance evaluations. The
		authors found that organizational support
		mechanisms such as facilitating the environment,
		training opportunities and ensuring an
		appropriate level of technological competency
		before organizing human workers in teams with
		robots are important. Finally, we found that one of
		the toughest challenges for HRM concerns
		performance evaluation in teams where humans
		and AI (including robots) work side by side. We
		refer to the lack of existing frameworks to guide
		HRM managers on this issue and emphasize the
		possibility of drawing insights from the computer
		gaming literature, where performance evaluation
		models have been developed to analyze human
		and AI interactions while keeping the context and
TI-i ( 1		limitations of both in view.
Using natural		This article describes the nature of the use of
and artificial		natural and artificial intelligence in talent
intelligence in the		management systems in the Moscow Region. The
talent		extent of using talent management technologies,
management		tools, the ratio of demand for natural and artificial
system		intelligence in talent management, and the level of
	15	employee trust in humans (robots) in management
		are analyzed. It was revealed and proven that
		personnel management services and company
		management do not effectively use natural
		intelligence within the framework of talent
		management systems, relying on opportunities
		and idiosyncratic approaches. Ambiguities in the



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		assessment of artificial intelligence by employees and company management are revealed. Increased use and fear of the negative impacts of artificial intelligence are opposing factors in talent management. It is proposed to immediately implement advanced technologies based on artificial intelligence, without harming humans and their potential. It is also proposed to continue to focus on the risks of intercepting initiatives in the management of artificial intelligence and crowding one out of the labor market. The main advantage of this article is an integrated approach to studying patterns of use of natural and artificial intelligence in talent management systems. The authors consider the problem of identifying the ratio of artificial and natural intelligence in talent management for the first time. The research results can serve as a basis for further research in human resource management systems, as well as good support for making management decisions in the implementation of artificial intelligence in business processes and organizational management.
Employability prediction: a survey of current approaches, research challenges and applications	21	Student employability is very important for educational institutions as it is often used as a metric for their success. The job market landscape, however, is more than ever dynamic, evolving due to globalization, automation, and recent advances in Artificial Intelligence. Identifying significant factors influencing employability, as well as new job market requirements can be of great help to all stakeholders. Knowing their weaknesses and strengths, students may better plan their careers. Instructors can focus on more appropriate skills to meet the requirements of a rapidly evolving labor market. Program managers can anticipate and improve their curricula to build new competencies, both to educate, train and retrain current and future workers. All these combined efforts can certainly contribute to increased employability. Data-based techniques and



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		machine learning have been widely used in various fields of educational data mining. An increasing number of studies are investigating data mining techniques for employability prediction. However, these studies show considerable variation, for example, with respect to the data used, the methods adopted, or even the research questions asked. In this paper, we aim to paint a clear picture of the state of the art, clarifying for each standard step of the data mining process, the differences, and similarities of these studies, along with further suggestions. Thus, this survey provides a comprehensive roadmap, enabling the application of data mining for employability.
Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary evidence	33	With the deployment of AI in HRM, organizations can increase efficiency in recruitment and selection and gain access to a larger recruitment pool. With the spread of AI in HRM, subjective criteria such as nepotism and favoritism are less likely to play a role in employee recruitment and selection. The deployment of AI in HRM also has a potentially positive impact on the development, retention, and productive utilization of employees. Research limitations/implications: AI is an evolving technology. Most HRM applications have not acquired enough machine learning capabilities with real-world experience. Some of them have no scientific basis. AI in HRM thus currently only affects a small proportion of the population in GS. Practical implications: This paper explores the role of AI in expanding the recruitment pool. It also advances our understanding of how AI-based HIRM tools can help reduce bias in selecting candidates, which is especially important in the Global South. It also explores various mechanisms through which AI helps in the development, retention and productive utilization of employees. Originality/value: We provide details of the various mechanisms through which AI brings



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input and output efficiencies in recruitment and
selection in these countries.

### 5. Theoretical and practical implications

### **Theoretical Implications**

The application of AI in HR management indicates a paradigm shift from a reactive to a proactive approach. This allows organizations to more effectively plan, manage and utilize their HR. HR managers and HR professionals need to increase their understanding of AI technology and data analysis to exploit the full potential of implemented systems. The application of AI makes it possible to deepen the understanding of interactions between humans and machines in the context of the work environment. This can provide deeper theoretical insight into organizational dynamics and employee productivity.

### **Practical Implications**

AI can help in finding the best candidates more efficiently, reducing the time and costs involved in the recruitment process. With careful data analysis, companies can identify areas where employees can improve their productivity. The use of AI in HR management can speed up the decision-making process and enable companies to allocate resources better. AI can help reduce bias in HR decision making, such as in the recruitment, promotion and employee assessment processes. This helps ensure that decisions taken are based on data and not on preferences or stereotypes. With the help of AI, companies can provide a better employee experience through more efficient time management, customized training, and improved internal communications. With careful data analysis, AI can help in identifying factors related to employee turnover and take preventive measures to retain valuable talent. AI enables companies to be more responsive to changes in the work environment, including changing market and technology needs, by providing faster and more accurate data insights. Applying AI in HR management is not just about improving operational efficiency, but also about improving employee experience and helping companies achieve their long-term goals. However, keep in mind that implementing AI also presents challenges, such as data security, privacy, and ethics, that must be handled carefully.

### 6. Conclusion

The aim of this research is to review the literature on artificial intelligence in human resource management. First, this review aims to synthesize the literature on artificial



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intelligence in human resource management and examine its development over time. secondly, the aim of this research is to present a conceptual framework based on the literature synthesis carried out. Therefore, a conceptual framework was developed. Future research in the domain of artificial intelligence in human resource management aims to examine in depth the extent of negative effects of artificial intelligence on human resource management such as data security, privacy, and ethics.

### 7. Limitations

This study has several limitations that must be acknowledged, including the fact that the articles analyzed were top of those that met the inclusion and exclusion criteria. Therefore, the findings of this study cannot be generalized to the entire volume of artificial intelligence research on human resource management. In addition, this study only reviewed articles written in English, so studies conducted in other languages were not included in this review.

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Prefix DOI: 10.8734/mnmae.v1i2.359

### Referensi

- Alan, H. (2023). A Systematic Bibliometric Analysis on the Current Digital Human Resources Management Studies and Directions for Future Research. *Journal of Chinese Human Resource Management*, 14(1), 38–59. <a href="https://doi.org/10.47297/wspchrmWSP2040-800502.20231401">https://doi.org/10.47297/wspchrmWSP2040-800502.20231401</a>
- Allen, P., Jacob, R. R., Lakshman, M., Best, L. A., Bass, K., & Brownson, R. C. (2018). Lessons Learned in Promoting Evidence-Based Public Health: Perspectives from Managers in State Public Health Departments. *JOURNAL OF COMMUNITY HEALTH*, 43(5), 856–863. <a href="https://doi.org/10.1007/s10900-018-0494-0">https://doi.org/10.1007/s10900-018-0494-0</a>
- 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). <a href="https://doi.org/10.3390/math11030612">https://doi.org/10.3390/math11030612</a>
- Arslan, A., Cooper, C., Khan, Z., Golgeci, I., & Ali, I. (2022). Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies. International Journal of Manpower, 43(1), 75–88. https://doi.org/10.1108/IJM-01-2021-0052
- Baakeel, O. (2020). The association between the effectiveness of human resource management functions and the use of artificial intelligence. International Journal of Advanced Trends in Computer Science and Engineering, 9(1.1 S I), 606-612. https://doi.org/10.30534/ijatcse/2020/9891.12020
- Bartosiak, M. L., & Modlinski, A. (2022). Fired by an algorithm? Exploration of conformism with biased intelligent decision support systems in the context of workplace discipline. Career Development International, 27(6–7), 601–615. <a href="https://doi.org/10.1108/CDI-06-2022-0170">https://doi.org/10.1108/CDI-06-2022-0170</a>
- Bauer, J. C., & Wolff, M. (2022). The Deinstitutionalization of Business Support Functions through Artificial Intelligence. *Information (Switzerland)*, 13(8). https://doi.org/10.3390/info13080352
- Bukartaite, R., & Hooper, D. (2023). Automation, artificial intelligence and future skills needs: an Irish perspective. EUROPEAN JOURNAL OF TRAINING AND DEVELOPMENT, 47(10), 163–185. <a href="https://doi.org/10.1108/EJTD-03-2023-0045">https://doi.org/10.1108/EJTD-03-2023-0045</a>
- Candy, T. and Winny, L. (2022). Teknologi finansial: analisis customer experience pada go-pay. Jemasi Jurnal Ekonomi Manajemen Dan Akuntansi, 18(2), 147-160. <a href="https://doi.org/10.35449/jemasi.v18i2.528">https://doi.org/10.35449/jemasi.v18i2.528</a>
- Carvalhais, L., & Formosinho, M. (2023). Training, Recruitment, and Supervision of Personnel in Residential Care centres: An Exploratory Study. *RESIDENTIAL TREATMENT FOR CHILDREN & YOUTH*. <a href="https://doi.org/10.1080/0886571X.2023.2203877">https://doi.org/10.1080/0886571X.2023.2203877</a>
- Charlwood, A. and Guenole, N. (2022). Can hr adapt to the paradoxes of artificial intelligence?. Human Resource Management Journal, 32(4), 729-742. <a href="https://doi.org/10.1111/1748-8583.12433">https://doi.org/10.1111/1748-8583.12433</a>

ISSN: 3025-9495

Neraca Manajemen, Ekonomi Vol 5 No 2 Tahun 2024

- Chistyakov, A. A., Mashkin, N. A., Ishmuradova Izida I. and Ruchkina, G. F., Babieva, N. S., & Shaidullina, A. R. (2021). System management and labour relations transformation in relation with talented, healthy and sportsman staff. *JOURNAL OF HUMAN SPORT AND EXERCISE*, *16*(S, SI), S1323–S1329. https://doi.org/10.14198/jhse.2021.16.Proc3.47
- Faqihi, A., & Miah, S. J. (2023). Artificial Intelligence-Driven Talent Management System: Exploring the Risks and Options for Constructing a Theoretical Foundation. Journal of Risk and Financial Management, 16(1). https://doi.org/10.3390/jrfm16010031
- Fernández-Martínez, C. and Fernández, A. (2020). Ai and recruiting software: ethical and legal implications. Paladyn Journal of Behavioral Robotics, 11(1), 199-216. https://doi.org/10.1515/pjbr-2020-0030
- Gélinas, D., Sadreddin, A., & Vahidov, R. (2022). Artificial intelligence in human resources management: A review and research agenda. *Pacific Asia Journal of the Association for Information Systems*, 14(6), 1–42. <a href="https://doi.org/10.17705/1pais.14601">https://doi.org/10.17705/1pais.14601</a>
- 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
- Huang, M. and Rust, R. (2018). Artificial intelligence in service. Journal of Service Research, 21(2), 155-172. <a href="https://doi.org/10.1177/1094670517752459">https://doi.org/10.1177/1094670517752459</a>
- Jain, M., Goel, A., Sinha, S., & Dhir, S. (2021). Employability implications of artificial intelligence in healthcare ecosystem: responding with readiness. Foresight, 23(1), 73-94. <a href="https://doi.org/10.1108/fs-04-2020-0038">https://doi.org/10.1108/fs-04-2020-0038</a>
- Karacsony, P. (2022). Analysis of the attitude of hungarian hr professionals to artificial intelligence. Naše Gospodarstvo/Our Economy, 68(2), 55-64. <a href="https://doi.org/10.2478/ngoe-2022-0011">https://doi.org/10.2478/ngoe-2022-0011</a>
- Kong, H., Yuan, Y., Baruch, Y., Bu, N., Jiang, X., & Wang, K. (2021). Influences of artificial intelligence (ai) awareness on career competency and job burnout. International Journal of Contemporary Hospitality Management, 33(2), 717-734. https://doi.org/10.1108/ijchm-07-2020-0789
- Konovalova, V., Mitrofanova, E., Mitrofanova, A., & Gevorgyan, R. (2022). THE IMPACT OF ARTIFICIAL INTELLIGENCE ON HUMAN RESOURCES MANAGEMENT STRATEGY: OPPORTUNITIES FOR THE HUMANISATION AND RISKS. *Wisdom*, 2(1), 88–96. <a href="https://doi.org/10.24234/wisdom.v2i1.763">https://doi.org/10.24234/wisdom.v2i1.763</a>
- Kshetri, N. (2020). Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary

ISSN: 3025-9495

Neraca Manajemen, Ekonomi Vol 5 No 2 Tahun 2024 Prefix DOI : 10.8734/mnmae.v1i2.359

evidence. Management Research Review, 44(7), 970–990. https://doi.org/10.1108/MRR-03-2020-0168

- López, O., Murillo, C., & González, A. (2021). Systematic literature reviews in kansei engineering for product design—a comparative study from 1995 to 2020. Sensors, 21(19), 6532. <a href="https://doi.org/10.3390/s21196532">https://doi.org/10.3390/s21196532</a>
- Malik, A., Budhwar, P., Patel, C., & Srikanth, N. R. (2022). May the bots be with you! Delivering HR cost-effectiveness and individualised employee experiences in an MNE. *International Journal of Human Resource Management*, 33(6), 1148–1178. https://doi.org/10.1080/09585192.2020.1859582
- Mays, N. and Pope, C. (2000). Qualitative research in health care: assessing quality in qualitative research. BMJ, 320(7226), 50-52. https://doi.org/10.1136/bmj.320.7226.50
- Mezhoudi, N., Alghamdi, R., Aljunaid, R., Krichna, G., & Düştegör, D. (2023). Employability prediction: a survey of current approaches, research challenges and applications. Journal of Ambient Intelligence and Humanized Computing, 14(3), 1489–1505. https://doi.org/10.1007/s12652-021-03276-9
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma, T. (2010). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *International Journal of Surgery*, 8(5), 336–341. <a href="https://doi.org/10.1016/j.ijsu.2010.02.007">https://doi.org/10.1016/j.ijsu.2010.02.007</a>
- Nalini, M. (2024). Transformative horizons: navigating the evolution of hr through ai and cloud technologies. Shanlax International Journal of Management, 11(iS1-Jan), 41-47. https://doi.org/10.34293/management.v11iis1-jan.7138
- Niranjan, S. J., Durant, R. W., Wenzel, J. A., Cook, E. D., Fouad, M. N., Vickers, S. M., Konety, B. R., Rutland, S. B., Simoni, Z. R., & Martin, M. Y. (2019). Training Needs of Clinical and Research Professionals to Optimize Minority Recruitment and Retention in Cancer Clinical Trials. *JOURNAL OF CANCER EDUCATION*, 34(1), 26–34. <a href="https://doi.org/10.1007/s13187-017-1261-0">https://doi.org/10.1007/s13187-017-1261-0</a>
- Ogbeibu, S., Emelifeonwu, J., Pereira, V., Oseghale, R., Gaskin, J., Sivarajah, U., & Gunasekaran, A. (2024). Demystifying the roles of organisational smart technology, artificial intelligence, robotics and algorithms capability: A strategy for green human resource management and environmental sustainability. *BUSINESS STRATEGY AND THE ENVIRONMENT*, 33(2), 369–388. https://doi.org/10.1002/bse.3495
- Oncioiu, I., Anton, E., Ifrim, A. M., & Mândricel, D. A. (2022). The Influence of Social Networks on the Digital Recruitment of Human Resources: An Empirical Study in the Tourism Sector. *Sustainability (Switzerland)*, 14(6). <a href="https://doi.org/10.3390/su14063693">https://doi.org/10.3390/su14063693</a>
- Prikshat, V., Malik, A., & Budhwar, P. (2023). AI-augmented HRM: Antecedents, assimilation and multilevel consequences. Human Resource Management Review, 33(1). <a href="https://doi.org/10.1016/j.hrmr.2021.100860">https://doi.org/10.1016/j.hrmr.2021.100860</a>

ISSN: 3025-9495

Neraca Manajemen, Ekonomi Vol 5 No 2 Tahun 2024 Prefix DOI : 10.8734/mnmae.v1i2.359

Priya, S., Jain, V., Priya, M., Dixit, S., & Joshi, G. (2022). Modelling the factors in the adoption of artificial intelligence in indian management institutes. Foresight, 25(1), 20-40. https://doi.org/10.1108/fs-09-2021-0181

- 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
- Ramadhana, R. (2024). Analisis dampak penerapan teknologi ai pada pengambilan keputusan strategis dalam sistem informasi manajemen. JIS, 2(1), 161-168. <a href="https://doi.org/10.59024/jis.v2i1.579">https://doi.org/10.59024/jis.v2i1.579</a>
- 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
- 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. <a href="https://doi.org/10.3389/fpsyg.2022.1014434">https://doi.org/10.3389/fpsyg.2022.1014434</a>
- Santiago, J. K. (2023). The progression in employer branding and employee-based brand equity: Scholar API-based systematic literature review. *Journal of Economics and Management (Poland)*, 45(1), 237–289. <a href="https://doi.org/10.22367/jem.2023.45.11">https://doi.org/10.22367/jem.2023.45.11</a>
- Scherer, R. W., Sensinger, L. D., Sierra-Irizarry, B., Formby, C., & Grp, T. R. (2018). Lessons learned conducting a multi-center trial with a military population: The Tinnitus Retraining Therapy Trial. *CLINICAL TRIALS*, *15*(5), 429–435. <a href="https://doi.org/10.1177/1740774518777709">https://doi.org/10.1177/1740774518777709</a>
- Shayegan, S., Bazrkar, A., & Yadegari, R. (2023). Realization of Sustainable Organizational Performance Using New Technologies and Green Human Resource Management Practices. *FORESIGHT AND STI GOVERNANCE*, 17(2), 95–105. https://doi.org/10.17323/2500-2597.2023.2.95.105
- Soleimani, M., Intezari, A., Taskin, N., & Pauleen, D. (2021). Cognitive biases in developing biased artificial intelligence recruitment system.. <a href="https://doi.org/10.24251/hicss.2021.620">https://doi.org/10.24251/hicss.2021.620</a>
- Soreny, C., Takhar, P., Vickers, E., Bartlett, R., Coates, E., Stavroulakis, T., Fox, E., Davidson, H., Harrison, A., & McDermott, C. (2022). Co-design of digital learning resources for care workers: reflections on the Neurocare Knowhow project. Journal of Medical Engineering and Technology. https://doi.org/10.1080/03091902.2022.2089253
- Sumah, A. M., & Baatiema, L. (2019). Decentralisation and Management of Human Resource for Health in the Health System of Ghana: A Decision Space Analysis. INTERNATIONAL JOURNAL OF HEALTH POLICY AND MANAGEMENT, 8(1), 28–39. https://doi.org/10.15171/ijhpm.2018.88

ISSN: 3025-9495

Neraca Manajemen, Ekonomi Vol 5 No 2 Tahun 2024 Prefix DOI : 10.8734/mnmae.v1i2.359

- Svitlana, T., VASYLYK, A., & Olga, B. (2022). Artificial intelligence in hr: practices and prospects of the spread in ukraine. The Eurasia Proceedings of Science Technology Engineering and Mathematics, 17, 152-160. <a href="https://doi.org/10.55549/epstem.1176076">https://doi.org/10.55549/epstem.1176076</a>
- Syamsuddin, S., Alloto'dang, K., & Djamro, R. (2021). Literature review artificial intelligence deteksi hasil ctscan paru-paru pasien terjangkit covid-19. Jurnal Pendidikan Indonesia, 2(3), 502-516. <a href="https://doi.org/10.36418/japendi.v2i3.120">https://doi.org/10.36418/japendi.v2i3.120</a>
- Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: challenges and a path forward. California Management Review, 61(4), 15-42. <a href="https://doi.org/10.1177/0008125619867910">https://doi.org/10.1177/0008125619867910</a>
- Vinichenko, M. v, Rybakova, M. v, Chulanova, O. L., Kuznetsova, I. v, Makushkin, S. A., & Lobacheva, A. S. (2019). Using natural and artificial intelligence in the talent management system. *International Journal of Recent Technology and Engineering*, 8(3), 7417–7423. <a href="https://doi.org/10.35940/ijrte.C6152.098319">https://doi.org/10.35940/ijrte.C6152.098319</a>
- Votto, A. M., Valecha, R., Najafirad, P., & Rao, H. R. (2021). Artificial Intelligence in Tactical Human Resource Management: A Systematic Literature Review. International Journal of Information Management Data Insights, 1(2). https://doi.org/10.1016/j.jjimei.2021.100047
- Wagner, D. (2020). Economic patterns in a world with artificial intelligence. Evolutionary and Institutional Economics Review, 17(1), 111-131. <a href="https://doi.org/10.1007/s40844-019-00157-x">https://doi.org/10.1007/s40844-019-00157-x</a>
- Xivuri, K., & Twinomurinzi, H. (2023). How AI developers can assure algorithmic fairness. Discover Artificial Intelligence, 3(1). <a href="https://doi.org/10.1007/s44163-023-00074-4">https://doi.org/10.1007/s44163-023-00074-4</a>