Artificial Intelligence in Human Resource Management

AI in Performance Management: Literature Review

Presenter:

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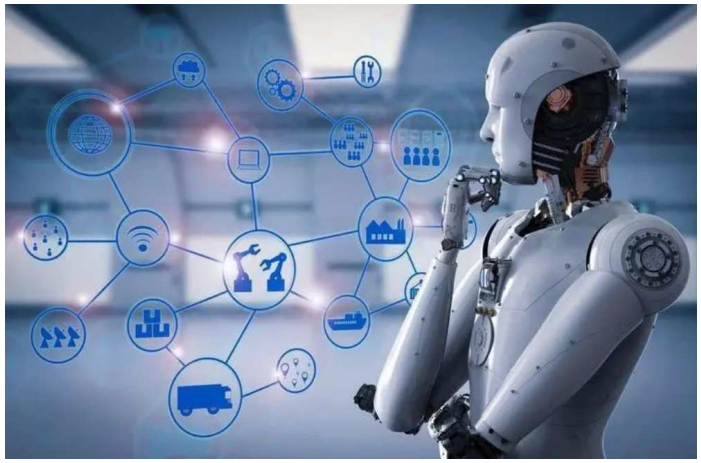
CONTENTS

Introduction

1. Digital transformation impacts many elements of businesses (Li et al., 2023).
2. An improved process forces companies to invest in advancing digitalization to prepare for an inevitable future with AI introduced in HRM.
3. Digitalization advances are helping companies move ahead by providing personalized services (Baldegger et al., 2020).
4. From an HRM perspective, emerging AI-based solutions are increasingly relied upon in processing time-consuming and complex tasks within the HRM functionalities (Hmoud, 2021).

Research Questions:



There persists a gap in the literature regarding the relationship between using such technology and employee performance. The research question concerns:

1. **How AI-based digital solutions can impact HR performance within organizations.**

2. **Which areas of current research have utilized the combination of AI and HRM in performance management?**

Purpose:

Recently, research on AI&HRM has mainly focused on employee recruitment and training (using AI technology to assist HR). However, there is still insufficient research on AI in performance management, which can effectively retain excellent talents for companies and objectively evaluate employees. This study aims to determine the potential benefits of implementing AI and the effect of these technologies on HR performance.

Background

AI and HRM in Work Performance

1. The digital revolution has resulted in many new technologies that quickly and cheaply infer human potential and forecast future work performance (Premuzic et al., 2016).
2. Academic Industrial–Organizational (I–O) psychologists, who focus on the behavior of employees in the workplace, appear to be mere observers, as there has been sparse scientific research on new evaluation methods, leaving HR practitioners with little solid data to judge the effectiveness of such tools (Jacob Fernandes França et al., 2023).
3. AI will revolutionize the workplace as a game-changing technology, but it is still in its infancy in HR and people management (Charlwood & Guenole, 2022).
4. Improving the efficiency of HRM through AI has become an important trend in the future development of Human Resource Management (Yawalkar, 2019).

Background

Artificial intelligence

- Mechanical
- Analytical
- Empathetic
- Intuitive

The four dimensions through which AI is categorized make this technology a valuable tool to support organizations (Huang & Rust, 2018) by providing a vast amount of data and automating many steps of business processes to speed up and optimize all phases of HRM.

The Benefits of AI in Evaluating Performance in HRM

AI eliminates biased decisions and assists HR professionals in making impactful actions by reducing manual analysis and providing recommendations based on data instead of human emotion (Chaturvedi & Joshi, 2017). Hence, with the deep and instant insights that AI provides, HR professionals will be able to retain, engage, and hire competent talents to improve the performance of the organization (He, 2018).

01

Eliminate biases

AI eliminates biased decisions and assists HR professionals in making impactful actions.

02

Save time and costs

The AI process will significantly save time and implementation costs.

03

Automate performance evaluations

AI can provide performance feedback to employees by tracking employee behavior at work.

04

Assess Employee Productivity

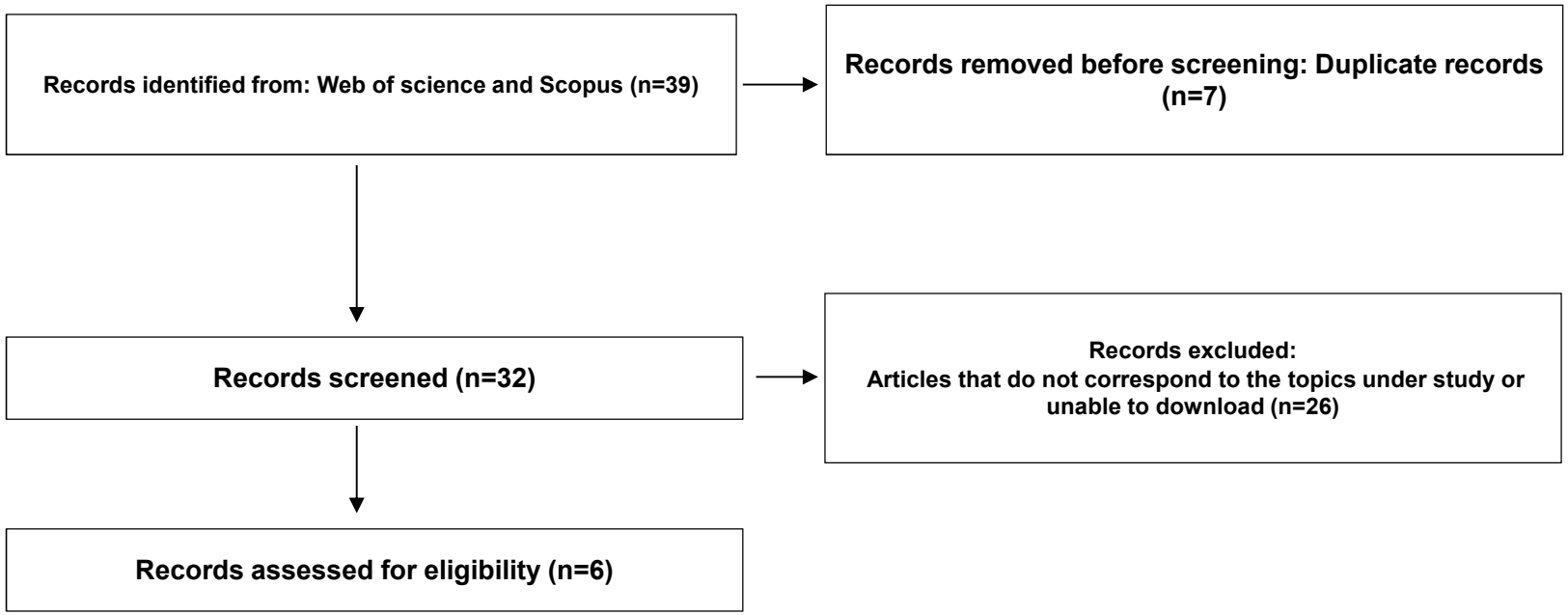
Great efficiency and productivity are critical traits of successful talents.

Examples of personalized HRM and artificial intelligence applications

Functions of HRM	Personalized HRM	Potential HR analytics and AI Applications (Use HR analytics, Chatbots and AI to)
Performance management	◆ Personalized performance review;	➢ Monitor and analyze individual performance.
	◆ Personalized messages and communications;	➢ Provide timely or real-time personal feedback.
	◆ Personalized rewards;	➢ Provide a personalized talent management system.
	◆ Personalized promotions etc.	➢ Conduct surveys.

Methodology

The keywords were paired with the Boolean operators “OR” and “AND”, obtaining the following query (AI OR artificial intelligence AND human resource management OR HRM) AND “performance management” AND “personnel selection”.



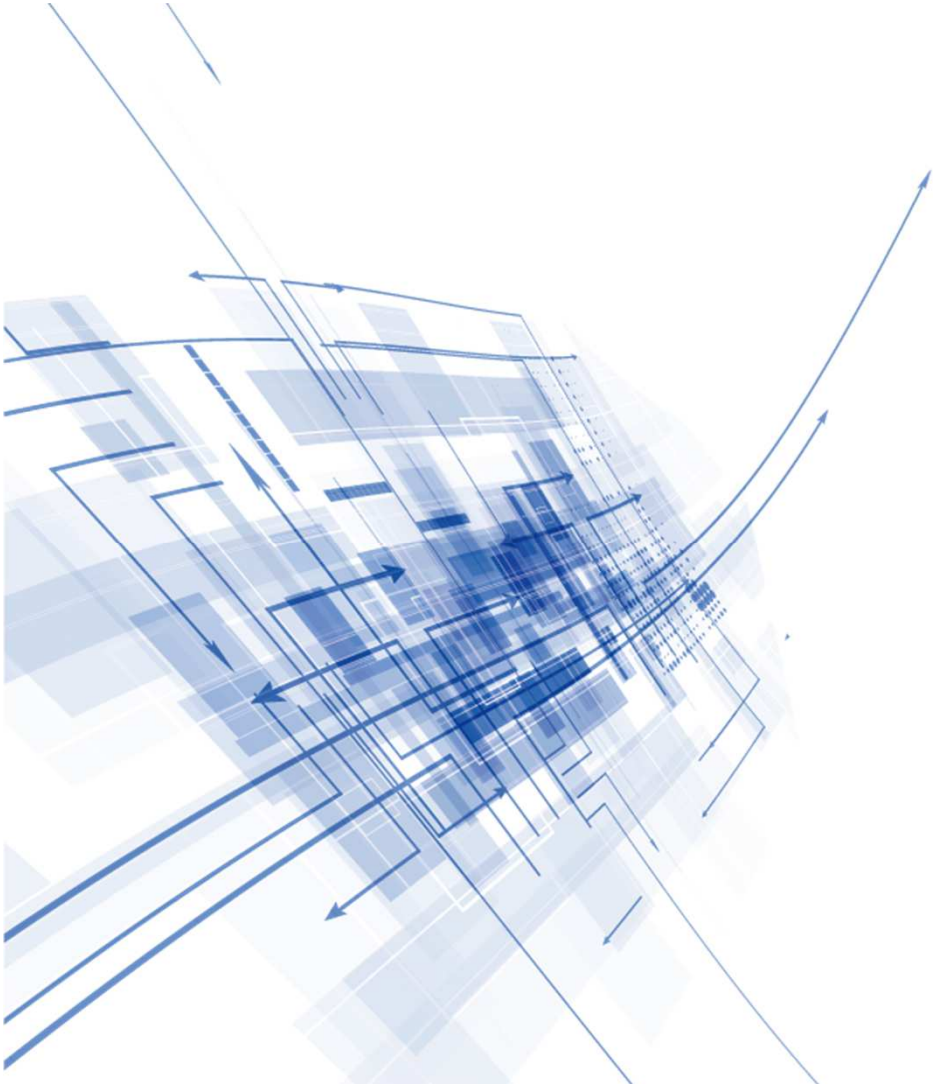
Author	Title	Main Findings	Research Methods	Research Contributions
Demirel, Zehra; Çubukçu, Ceren	Measurement of Employees on Human Resources with Fuzzy Logic	The decision-making mechanism based on fuzzy logic method can measure the performance of job applicants and determine their suitability for a position.	Modeling using fuzzy Logic	Provides a solution for measuring job applicant performance using AI and fuzzy logic methods in human resource management.
Arora, Meenal; Prakash, Anshika; Mittal, Amit; Singh, Swati	HR Analytics and Artificial Intelligence-Transforming Human Resource Management	AI and HR analytics can enhance HRM functions such as talent acquisition, training, employee retention, and performance appraisal. The adoption of HR technology among employees faces barriers.	Literature review	Provides insights into the implementation of AI and HR analytics in HRM functions and identifies barriers to adoption.
Pereira, Vijay; Hadjielias, Elias; Christofi, Michael; Vrontis, Demetris	A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective	AI can bring both opportunities and challenges to HRM and workplace outcomes. There is a need for a holistic review of the research on the effects of AI on the workplace.	Systematic literature review	Provides a comprehensive review of the relationship between AI and workplace outcomes, identifies research gaps, and offers directions for future research in HRM and AI.
Aurel Vlaicu University of Arad, Arad, Romania; Rad, Dana; Balas, Valentina E.; Aurel Vlaicu University of Arad, Arad, Romania	A Novel Fuzzy Scoring Approach of Behavioral Interviews in Personnel Selection	Strong correlation between selection interview scores and job performance; Fuzzy CAR system for scoring selection interviews is valid and optimized	Modeling using fuzzy logic	Highlights the relationship between selection interview scores and job performance, and introduces a fuzzy CAR system for scoring interviews
Stephanie, Cecilia; Sarno, Riyanarto	Classification Talent of Employee Using C4.5, KNN, SVM	Introduces the C4.5, K-nearest neighbors (KNN), and Support Vector Machine (SVM) methods for classifying employees based on performance and potential.	C4.5, KNN, SVM, performance criteria calculation	Provides a classification framework for talent management in organizations and compares the accuracy of different classification methods.
Lopes, Susana Almeida; Duarte, Maria Eduarda; Almeida Lopes, João	Can artificial neural networks predict lawyers' performance rankings?	Demonstrates the use of artificial neural networks to predict performance rankings of lawyers in law firms and compares the accuracy with multivariate regression analysis.	Analysis of performance rankings, regression analysis, neural network modeling	Provides a predictive model for talent management in law firms that outperforms traditional regression analysis and enables extended intervals for performance rankings.

Conclusion

1. The present study has systematically reviewed the literature on the nexus between AI and performance management. It has been concluded that the previous research is still very limited and lacks relevant contributions to the theoretical aspects of AI and HRM
2. Based on the analysis findings, it is evident that the field of employing AI algorithms for employee performance management in organizations requires clarification. Despite this, all have confirmed AI's effective role in human resource management.
3. By setting our discussion within the context of recent HR literature, we offer helpful directions for future research and suggest studies using alternative analytical frameworks and theories considering the individual, team, and institutional levels.

Future research

1. With the rapid advancement of AI technology, HRM requires a substantial amount of additional empirical literature. One of the challenges management faces is ensuring the consistency of HRM theory in the context of AI technology.
2. Future research must determine whether AI technologies have compromised employee privacy. Is the utilization of AI wholly positive? Do employees view artificial intelligence (AI) technology favorably? (Are they concerned that they could be replaced easily?) Will AI help employees improve their skills while also causing them to switch jobs frequently?
3. Given the current paucity of empirical research, it is recommended that future studies employ a variety of empirical approaches to determine whether AI is a panacea for companies seeking to maintain their competitive edge.



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