ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCES: TRENDS AND COMPETENCIES

Viviana Meirinhos, CEOS.PP, ISCAP, Polytechnic University of Porto, Portugal, vivianameirinhos@iscap.ipp.pt

Sofia Ribeiro, ISCAP, Polytechnic University of Porto, Portugal, csofiamarquesr@gmail.com

Artificial Intelligence (AI) has emerged as a transformative force across various industries, and Human Resource Management (HRM) is no exception. The implementation of AI tools is profoundly altering critical processes in the employee lifecycle, such as Recruitment and Selection, Onboarding, Training and Development, Performance Evaluation, and Talent Retention. This study aimed to explore the key trends in the use of AI in HR processes and identify the skills that HR professionals must develop to maximize the success of its implementation.

The study is grounded in the employee lifecycle framework (Cattermole, 2019; Gladka et al., 2022; Kwon & Park, 2019) and relevant literature on AI applications in HRM, including the works of Kaur et al. (2023) and Bulut & Dinler (2023). The literature highlights that AI tools such as chatbots, predictive analytics systems, and personalized e-learning platforms are widely used to automate and optimize various HR processes. The necessary skills for HR professionals in the AI era include digital technology expertise, data literacy, strategic vision, and adaptability. As AI increasingly drives HR processes, it reshapes not only operational tasks but also the strategic role of HR, pushing professionals to evolve from transactional roles to strategic enablers within organizations.

To achieve the study's objectives, a systematic review of 152 articles from leading HRM associations and institutions was conducted. The content analysis followed Bardin's (2006) methodology, which involves selecting, synthesizing, and interpreting the results. Identified trends were categorized according to employee lifecycle stages, and the key skills were organized into an AI competency model for HR professionals. This comprehensive approach allowed for the identification of both widely recognized and emerging trends in the use of AI within HR, providing a robust basis for the competency model proposed.

The results reveal that AI is widely adopted across multiple stages of the employee lifecycle, with a particular focus on Recruitment and Selection, Training and Development, and Performance Evaluation. The most commonly used tools include Applicant Tracking Systems (ATS), chatbots for resume screening, and predictive data analytics. In Recruitment and Selection, AI is used to optimize resume screening and provide algorithm-based candidate recommendations. In Training and Development, personalized e-learning platforms stand out, tailoring content to the individual needs of employees. In Performance Evaluation, AI is applied

to analyze performance patterns and provide regular, personalized feedback. These applications are increasingly relied upon not only to enhance operational efficiency but also to deliver more personalized, data-driven employee experiences, ultimately contributing to better retention and engagement.

Regarding essential skills, the study highlights the need for HR professionals to master technological and digital skills, as well as data literacy. Business acumen, coupled with problem-solving abilities and strategic thinking, are also emphasized as critical. Resilience, adaptability, and interpersonal skills such as empathy and collaboration are seen as essential to addressing challenges and leveraging the opportunities provided by AI. These competencies reflect the evolving role of HR professionals as they move towards becoming more data-driven and strategic, navigating the complexities of AI tools and balancing the human aspect of management.

The results confirm trends observed in the literature, such as the increasing use of automated recruitment systems and personalized learning platforms. However, the study adds new insights by integrating an AI competency model for HR professionals that includes cognitive, technical, behavioral, and emotional skills. This model reflects current organizational needs in the digital age, while suggesting areas of development for HR professionals, who must not only master technology but also align HR practices with organizational strategies. Furthermore, the model emphasizes that the successful integration of AI in HR requires a balance between technical expertise and human-centric skills, ensuring that AI complements, rather than replaces, the human element in HR practices.

This study contributes to the understanding of emerging AI trends in HR processes while proposing a new competency model that can serve as a foundation for HR professional development. Practical implications include the need for continuous investment in skills training and development, with a focus on digital literacy and adaptability to new technologies. For future research, it is recommended to conduct empirical studies that explore HR professionals' experiences with AI, as well as investigations that address ethical and regional issues related to automation and digital transformation in organizations. Such research could also delve deeper into the challenges of implementing AI in HR, including the ethical considerations surrounding data privacy and bias in AI algorithms, which remain key concerns in the field.

These contributions not only expand academic knowledge but also offer practical tools for the strategic development of HR, preparing professionals for the demands of the digital age and maximizing AI's potential in organizational processes. As AI continues to evolve, HR professionals must remain at the forefront of this transformation, ensuring that they are equipped with the skills and knowledge to drive the integration of AI in ways that align with both organizational goals and ethical standards.

Artificial Intelligence, Human Resources Management, Human Resources Professional, Digital Transformation, Human Resources Processes, Competencies