



“Master in Business Administration”

Postgraduate Dissertation

“AI in HR: How Artificial Intelligence Improves Human Resource
Management, From Recruitment to Evaluation”

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Patras, Greece, May 2026

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“AI in HR: How Artificial Intelligence Improves Human Resource Management, From Recruitment to Evaluation”

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“Dedicated to my family”

Abstract

Artificial Intelligence (AI) is increasingly repositioning Human Resource Management (HRM) from an administratively oriented function toward a data-informed, technology-enabled strategic partner. In contemporary organizations operating under Industry 4.0 conditions, HR processes are shaped by rising automation needs, digital work platforms, and expanding “people data” generated across the employee lifecycle. Within this context, AI applications—ranging from algorithmic screening and conversational agents to predictive analytics—are expected to substantially reconfigure how firms search for candidates, make selection decisions, and evaluate performance over time. This dissertation examines how AI can automate and enhance core HR activities by supporting more scalable candidate identification, improving match quality between applicants and job requirements, and enabling continuous evaluation through real-time data streams and analytics. The analysis further considers how AI can contribute to productivity, development, and employee well-being via feedback systems and targeted interventions, while recognizing that these advantages depend on responsible governance and organizational readiness.

The study focuses on the principal AI tools used in recruitment and evaluation, including résumé parsing and ranking systems, chatbots for candidate communication, and performance analytics platforms that leverage “digital exhaust” from workplace systems. It also critically assesses the major implementation challenges documented in the literature, particularly algorithmic bias, transparency deficits, privacy concerns, and the risk of diminishing the human element in high-stakes people decisions. Building on these debates, the dissertation discusses practical and ethical strategies for integrating AI into HRM in ways that preserve accountability, fairness, and employee trust, emphasizing hybrid models in which AI augments—rather than replaces—professional judgment. Overall, the dissertation aims to provide a structured understanding of AI’s role in modern HRM and to outline evidence-based directions for responsible adoption across recruitment, performance management, and continuous employee evaluation.

More specifically, this thesis aims to examine the role of Artificial Intelligence in Human Resource Management and to evaluate how modern organizations can integrate AI across the employee lifecycle—from recruitment and onboarding to performance



management and continuous evaluation—while addressing ethical, legal, and practical constraints.

The research objectives are:

1. Analyze the use of AI in recruitment and employee evaluation.
2. Evaluate the benefits and challenges of AI-enabled HRM.
3. Propose strategies for successful AI integration into HR strategy.
4. Discuss future trends and prospects in AI for HRM.

Keywords: Artificial intelligence (AI), Human resource management (HRM), AI-enabled recruitment



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“Τεχνητή Νοημοσύνη και Ανθρώπινο Δυναμικό: Πώς η Τεχνητή
Νοημοσύνη Βελτιώνει τη Διαχείριση Ανθρώπινου Δυναμικού, από
την Πρόσληψη έως την Αξιολόγηση»”

Άννα Γαροφάλλου



Περίληψη

Η Τεχνητή Νοημοσύνη (TN) επανατοποθετεί ολοένα και περισσότερο τη Διαχείριση Ανθρώπινου Δυναμικού (HRM) από μια διοικητικά προσανατολισμένη λειτουργία σε έναν στρατηγικό εταίρο που βασίζεται σε δεδομένα και στην τεχνολογία. Στους σύγχρονους οργανισμούς που λειτουργούν υπό συνθήκες Βιομηχανίας 4.0, οι διαδικασίες HR διαμορφώνονται από τις αυξανόμενες ανάγκες αυτοματοποίησης, τις ψηφιακές πλατφόρμες εργασίας και την επέκταση των «δεδομένων ανθρώπινου δυναμικού» που παράγονται σε όλο τον κύκλο ζωής των εργαζομένων. Σε αυτό το πλαίσιο, οι εφαρμογές TN, που κυμαίνονται από την αλγοριθμική διαλογή και τους πράκτορες συνομιλίας έως την προγνωστική ανάλυση, αναμένεται να αναδιαμορφώσουν ουσιαστικά τον τρόπο με τον οποίο οι εταιρείες αναζητούν υποψηφίους, λαμβάνουν αποφάσεις επιλογής και αξιολογούν την απόδοση με την πάροδο του χρόνου.

Η παρούσα εργασία εξετάζει πώς η TN μπορεί να αυτοματοποιήσει και να βελτιώσει τις βασικές δραστηριότητες HR υποστηρίζοντας πιο κλιμακώσιμη αναγνώριση υποψηφίων, βελτιώνοντας την ποιότητα αντιστοίχισης μεταξύ υποψηφίων και απαιτήσεων εργασίας και επιτρέποντας τη συνεχή αξιολόγηση μέσω ροών δεδομένων και αναλυτικών στοιχείων σε πραγματικό χρόνο. Η ανάλυση εξετάζει περαιτέρω πώς η TN μπορεί να συμβάλει στην παραγωγικότητα, την ανάπτυξη και την ευημερία των εργαζομένων μέσω συστημάτων ανατροφοδότησης και στοχευμένων παρεμβάσεων, αναγνωρίζοντας παράλληλα ότι αυτά τα πλεονεκτήματα εξαρτώνται από την υπεύθυνη διακυβέρνηση και την οργανωτική ετοιμότητα. Η μελέτη επικεντρώνεται στα κύρια εργαλεία Τεχνητής Νοημοσύνης που χρησιμοποιούνται στην πρόσληψη και την αξιολόγηση, συμπεριλαμβανομένων των συστημάτων ανάλυσης και κατάταξης βιογραφικών, των chatbot για την επικοινωνία των υποψηφίων και των πλατφορμών ανάλυσης απόδοσης που αξιοποιούν την «ψηφιακή εξάτμιση» από τα συστήματα χώρου εργασίας. Επίσης, αξιολογεί κριτικά τις κύριες προκλήσεις εφαρμογής που τεκμηριώνονται στη βιβλιογραφία, ιδιαίτερα την αλγοριθμική προκατάληψη, τα ελλείμματα διαφάνειας, τις ανησυχίες για την προστασία της ιδιωτικής ζωής και τον κίνδυνο μείωσης του ανθρώπινου στοιχείου σε αποφάσεις υψηλού

διακυβεύματος για τους ανθρώπους. Βασιζόμενη σε αυτές τις συζητήσεις, η διατριβή συζητά πρακτικές και ηθικές στρατηγικές για την ενσωμάτωση της Τεχνητής Νοημοσύνης στη Διαχείριση Ανθρώπινου Δυναμικού με τρόπους που διατηρούν την λογοδοσία, τη δικαιοσύνη και την εμπιστοσύνη των εργαζομένων, δίνοντας έμφαση σε υβριδικά μοντέλα στα οποία η Τεχνητή Νοημοσύνη ενισχύει την επαγγελματική κρίση. Συνολικά, η διατριβή στοχεύει να παρέχει μια δομημένη κατανόηση του ρόλου της Τεχνητής Νοημοσύνης στη σύγχρονη Διαχείριση Ανθρώπινου Δυναμικού και να σκιαγραφήσει κατευθύνσεις βασισμένες σε τεκμήρια για υπεύθυνη υιοθέτηση σε όλες τις προσλήψεις, τη διαχείριση της απόδοσης και τη συνεχή αξιολόγηση των εργαζομένων.

Ειδικότερα, αυτή η διατριβή στοχεύει να εξετάσει τον ρόλο της Τεχνητής Νοημοσύνης στη Διαχείριση Ανθρώπινου Δυναμικού και να αξιολογήσει πώς οι σύγχρονοι οργανισμοί μπορούν να ενσωματώσουν την Τεχνητή Νοημοσύνη σε όλο τον κύκλο ζωής των εργαζομένων - από την πρόσληψη και την ένταξη έως τη διαχείριση της απόδοσης και τη συνεχή αξιολόγηση - αντιμετωπίζοντας παράλληλα ηθικούς, νομικούς και πρακτικούς περιορισμούς. Οι ερευνητικοί στόχοι είναι:

1. Ανάλυση της χρήσης της Τεχνητής Νοημοσύνης (TN) στην πρόσληψη και την αξιολόγηση εργαζομένων.
2. Αξιολόγηση των οφελών και των προκλήσεων της Διαχείρισης Ανθρώπινου Δυναμικού με την Τεχνητή Νοημοσύνη.
3. Πρόταση στρατηγικών για την επιτυχή ενσωμάτωση της TN στη στρατηγική HR.
4. Συζήτηση μελλοντικών τάσεων και προοπτικών στην TN για τη Διαχείριση Ανθρώπινου Δυναμικού.

Λέξεις-κλειδιά: Τεχνητή νοημοσύνη (TN), Διαχείριση ανθρώπινου δυναμικού (HRM), Προσλήψεις με την Τεχνητή Νοημοσύνη



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List of Abbreviations & Acronyms

ACIT	— Advanced Computer Information Technologies (conference)
AGI	— Artificial General Intelligence
AI	— Artificial Intelligence
ARL	— Adversarial Representation Learning
ATS	— Applicant Tracking System(s)
CAHRS	— Center for Advanced Human Resource Studies
CIRCLE	— Centre for Innovation Research (Lund University)
CVPR	— Conference on Computer Vision and Pattern Recognition
DOI	— Diffusion of Innovations (theory)
DST	— Data-Sufficient Trade-offs
EMNLP	— Empirical Methods in Natural Language Processing
FACCT	— Conference on Fairness, Accountability, and Transparency
GMA	— General Mental Ability
GOFAI	— Good Old-Fashioned Artificial Intelligence
HOU	— Hellenic Open University
HR	— Human Resources
HRM	— Human Resource Management
HSIC	— Hilbert–Schmidt Independence Criterion
i-HRIS	— Intelligent Human Resource Information System
ICCAKM	— International Conference on Computation, Automation and Knowledge Management
ICCV	— International Conference on Computer Vision
IEEE	— Institute of Electrical and Electronics Engineers
IJCAI	— International Joint Conference on Artificial Intelligence
JAGI	— Journal of Artificial General Intelligence
JMD	— Journal of Management Development
LST	— Learning-Sufficient Trade-offs
ML	— Machine Learning



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NI — Natural Intelligence

NLP — Natural Language Processing

OKR — Objectives and Key Results

ONA — Organizational Network Analysis

PwC — PricewaterhouseCoopers

R&D — Research and Development

STARA — Smart Technology, Artificial Intelligence, Robotics, and Algorithms

TOE — Technology–Organization–Environment (framework)

1. Introduction

1.1 Purpose of the research

The purpose of this literature review is to systematically investigate how Artificial Intelligence impacts key functions of Human Resource Management, with an emphasis on candidate attraction and selection, performance evaluation and ongoing employee monitoring. The paper seeks to analyze the organizational, ethical and operational factors that determine the effective and responsible use of Artificial Intelligence in Business Administration. In particular, this review examines the contribution of Artificial Intelligence to improving the accuracy, speed and consistency of HR decisions. At the same time, it assesses the limitations and risks of algorithmic bias, as well as issues of opacity and privacy.

1.2 Research Questions

RQ1: What are the main applications of Artificial Intelligence in the functions of attracting, selecting and evaluating employee performance?

RQ 2: What are the main benefits of Artificial Intelligence in Human Resources Management?

RQ 3: What challenges and risks are involved in the use of Artificial Intelligence in Human Resources Management?

RQ 4: What organizational and administrative conditions are considered necessary for the successful integration of Artificial Intelligence in HR?

1.3 Research methodology

This paper was based on a narrative review of the international literature on the use of Artificial Intelligence in Human Resource Management. The literature search process was carried out with the aim of extracting recent and reliable studies on the applications of Artificial Intelligence in individual HR functions.

The source search was carried out in the electronic databases Google Scholar, Scopus and ScienceDirect with combinations of keywords in English, such as artificial intelligence in

human resource management, Artificial Intelligence in HRM, recruitment and artificial intelligence, selection based on Artificial Intelligence, performance appraisal and Artificial Intelligence, employee monitoring and artificial intelligence, workplace surveillance, justice in HR based on Artificial Intelligence and ethical issues of Artificial Intelligence in human resources. The use of keyword combinations allowed the collection of studies covering both the business applications of Artificial Intelligence and the organizational and ethical dimensions of its use.

The search was conducted for articles from 2017 to 2025, so that the review captures the most modern developments in a dynamically changing field. At the same time, some older sources were also included, which provided important theoretical background for understanding the digital transition of Human Resources and the evolution of algorithmic applications in personnel management. In addition, the selection criteria for studies were direct relevance to the subject of the work, publication in peer-reviewed scientific journals or in collective volumes of academic prestige, the existence of a clear theoretical or research orientation and their contribution to the understanding of the impacts of Artificial Intelligence on Human Resources Management practices. On the other hand, the exclusion criteria were limited relevance to the field of Human Resource Management, the absence of scientific documentation, publication in languages other than English and Greek, and publication in non-academic sources.

2. Literature Review

2.1 History

Since 2015, the use of Artificial Intelligence (AI) in human resource management has initiated a broad restructuring of HR functions, ranging from candidate identification to employee evaluation. Early applications, such as Mya, have shown promising results in large-scale resume screening processes (Chandler, 2017). However, in the post-2020 period, predictive analytics has been integrated into candidate tracking systems and talent intelligence platforms (Mahat, 2024).

AI is expected to play a key role in shaping workforce planning in the coming years. Forecasts for 2030 indicate that a large proportion of organizations expect AI to significantly reshape their workforce strategies, with 86% of senior HR leaders identifying predictive recruitment and retention models as areas of significant transformation (World Economic Forum, 2025). Furthermore, Nawaz et al.'s (2024) cross-sectoral research in India found that perceived accuracy and computational speed were among the most important drivers of AI adoption in HR practices. At the same time, there are persistent concerns about algorithmic bias and limited transparency in AI decision-making processes (Raghavan et al., 2019).

The history of Artificial Intelligence unfolds in successive phases, each characterized by periods of heightened optimism followed by periods of reassessment and disappointment (Haenlein & Kaplan, 2019; Delipetrev et al., 2020). Most scholars trace the origins of Artificial Intelligence to the 1950s, when early symbolic programs attempted to simulate aspects of human reasoning. In this phase, researchers laid the conceptual foundations of symbolic and connectionist approaches, with an emphasis on artificial neural networks. In this phase, research and professional practice had only a marginal place in these early technological explorations. Over time, the ambitious expectations associated with early AI proved difficult to fulfill, and a phase of disappointment followed, as the technology failed to live up to its most optimistic predictions (Delipetrev et al., 2020; Haenlein & Kaplan, 2019).

A second phase followed in the 1980s, with the emergence of expert systems. Based on formal models of knowledge representation and rule-based reasoning, these systems

sought to capture specialized expertise and make it available in the form of support for non-experts (Delipetrev et al., 2020; Haenlein & Kaplan, 2019). This phase also begins the connection of AI and human resource management (Chu, 1990; Extejt & Lynn, 1988; Hannon et al., 1990). However, this phase is also followed by some disappointment, as the fully organized large-scale adoption did not take place.

The third phase of expansion of Artificial Intelligence appeared in the early 2010s. The large increase in available data, combined with the significant reduction in computational costs, accelerates the transition to connectionist models, mainly in machine learning approaches (Delipetrev et al., 2020). This period already has a wide range of areas, such as that of neural machine translation, autonomous driving (Russell & Norvig, 2021). HR has also entered this new phase in a much more proactive manner (Ernst & Young, 2018; IBM, 2018; PWC, 2017). Within this contemporary context, new conceptual labels have gained prominence, including HR big data (Garcia-Arroyo & Osca, 2021) and HR analytics (Madsen & Slåtten, 2017). Collectively, these three historical waves demonstrate both the adaptability of AI and the uneven intensity with which HR has engaged over time. McKinsey's report shows that companies in the top talent productivity quartile achieve more than three times the revenue per employee ranked in organizational performance metrics, with AI-based talent analytics contributing to this through real-time identification of skill shortages and the problematic nature of internal mobility patterns (McKinsey & Company, 2025). At the same time, the wider spread of training across big data and AI-related skills among employees has raised expectations that HR systems will be able to leverage the digital footprints generated through everyday work activities, including collaboration records and wearable sensor data, to predict performance development and exit risk. These capabilities not only enhance business efficiency but also the quality of strategic planning for human capital, especially in industries where innovation cycles are rapid (Qin et al., 2025).

2.2 Conceptual and Theoretical Foundations

Artificial Intelligence (AI) has various forms, and each definition reflects a different theoretical perspective on what it encompasses and how it should be understood (Monett & Lewis, 2018; Wang, 2019; Monett et al., 2020). In most cases, these definitions are based on

comparing AI to natural intelligence. Through this comparative logic, AI is presented as a technological construct that has some relationship to biological intelligence (Wang, 2019).

Early definitions focused mainly on structural similarity, assuming that AI systems would replicate the anatomical or logical organization of Natural Intelligence (NI). Over time, however, this view began to be considered too narrow and was abandoned. Later research shifted towards a functional interpretation, according to which AI should be understood in terms of its ability to produce capabilities comparable to those of naturally intelligent agents, and not just based on internal similarity (Wang, 2019).

For human resource management research, Artificial Intelligence can be defined as a group of digital technologies designed to replicate selected functions typically associated with natural intelligence, including perception, learning, knowledge representation, and reasoning, in order to support or perform tasks that traditionally required such cognitive abilities. The phrase “imitation of selected functions of intelligence” intentionally signals a limited analogy between natural and artificial forms of intelligence (Russell & Norvig, 2021). Thus, Artificial Intelligence relies on processes that are fundamentally different from biological intelligence, while at the same time producing results that may resemble, approach, or in some cases surpass those associated with human intelligence. The analogy, therefore, concerns the result and not the method through which the result is produced. While the roles of intelligent expression clearly imply that the human brain is the focal point of analysis, they can be expanded to embrace a larger scope of biological intelligence if needed (Wang, 2019). Finally, by defining AI as a series of digital technologies, the variety of its internal composition becomes evident. The field of AI is not limited to one monolithic entity but rather consists of a range of techniques, architectures, and combinations of hardware and software, all with the same goal in mind of achieving certain cognitive results. Modern efforts in defining AI categories further confirm the multiplicity of the field and its dynamic nature, demonstrating that AI has become an extremely complex subject that cannot be definitively defined either internally or externally (Corea, 2019).

2.2.1 Strength-based taxonomy

Power-based classifications are used to indicate the overall cognitive range that an AI system is expected to achieve. In these classifications, three main categories repeatedly appear, namely narrow intelligence, general intelligence, and super-intelligence, which are discussed below (Bostrom, 2014; Russell & Norvig, 2021; Searle, 1980).

Initially, narrow AI is designed to perform exceptionally well in a single and clearly delimited domain of human activity. With respect to this specific task, such systems may reach or even surpass human performance. Their ability, however, remains strictly limited to that domain and cannot be transferred to other contexts (Searle, 1980; Bunge, 1956a, 1956b). An example is a chess program capable of defeating a prize-winning chess player, while at the same time this program cannot even play a simple game of tic-tac-toe.

On the other hand, general artificial intelligence is a form of intelligence that can deal with the full range of activities that humans can perform. It is also found as Artificial Intelligence, artificial general intelligence AGI, full Artificial Intelligence or Artificial Intelligence HLAI human-level. What distinguishes this category is the breadth and adaptability of the intellect to such an extent that it is completely comparable to that of humans. In the case of this AI, questions are examined regarding whether it has consciousness, self-awareness, intention or purposeful action (Searle, 1980).

Regarding super-intelligence, it is an entity that exceeds human cognition in all its dimensions (Bostrom, 2014). Such a system takes on forms of reasoning and problem-solving that remain beyond human imagination or beyond human capabilities. Superintelligence introduces ethical and existential issues that are significantly broader and more serious than those typically associated with Artificial General Intelligence.

2.2.2 Paradigm-based taxonomy

Another classification of AI systems is according to the paradigm on which they are based, that is, the basic operational logic through which they produce results. With this classification, two main categories emerge: symbolic AI and relational AI (Russell & Norvig, 2021).

Symbolic AI is based on an explicit representation of reality that is constructed by humans in advance. In this approach, researchers or subject matter experts formalize knowledge through discrete symbolic units, such as linguistic expressions, logical statements, or ontological relationships, and the system processes these symbolic elements in order to draw conclusions. Because these representations must be intentionally created, updated, and supervised by human agents, symbolic systems tend to require a significant input of knowledge and significant maintenance effort (Haugeland, 1985).

On the other hand, associative AI works by processing raw or slightly structured data, including images, sensor-generated information, or transactional datasets, and develops its own internal model by recognizing statistical patterns that connect inputs to expected outputs. Artificial neural networks are the clearest example of this paradigm, as they allow the system to construct a representation of reality through learning processes rather than receiving such a representation in a predetermined form. Both instances can currently be observed within the realm of human resources management. Regarding symbolic AI, employment recruitment systems, which rely on a search and match approach driven by knowledge-based techniques, apply ontology-based skills and job characteristics to facilitate candidate selection and evaluation. This way, it is possible to see how symbolic reasoning can benefit HR management decision-making processes (Martinez-Gil et al., 2016). When it comes to connective AI, it is evident that HR analytics applications based on predictive modeling that leverages neural networks for forecasting future employee absenteeism exemplify a data-driven learning process that is independent of any symbolic representation (Ali Shah et al., 2020).

As far as concern Greece, more than 7 out of 10 companies operating in the Greek market are poorly informed about the applications and capabilities of artificial intelligence in human resources. Despite the lag observed in the adoption of technology and artificial intelligence tools and applications, more than 8 out of 10 companies believe that their impact will be very to fairly significant on the characteristics, knowledge and skills of employees they will seek in the future.

2.3 AI in Human Resources

2.3.1 AI in Recruitment and Candidate Sourcing

The digital era has brought significant transformations to the recruitment sector. The evolving digital technologies of recent years have played an increasingly important role for both employees and Human Resources Management (HR). The digital transformation of processes in the Human Resources department includes the use of new technologies to streamline human resources processes such as recruitment, attraction, assessment and training (Pan & Froese, 2022).

Digital recruitment uses websites and social media platforms to attract candidates and is a cost-effective means of searching for candidates (Johnson et al., 2020). Online screening at the first stage is important for selecting the 15 suitable candidates, ensuring a selection process that takes into account both technical and interpersonal skills (Van Esch et al., 2018). The advantages of AI-based recruitment include broader exposure to local, national and global markets, reduced advertising costs, job postings available 24 hours a day, and improved online communication (Du Plessis & Frederick, 2012; Gulliford & Dixon, 2019). As competition for skilled employees intensifies, automation is crucial to speed up the recruitment process (Tanantong & Wongras, 2024).

Thus, AI is transforming the recruitment process by increasing efficiency, reducing bias, and improving the candidate experience. AI tools help HR professionals streamline their recruitment processes, from candidate sourcing to final selection. One of the main applications of AI in recruitment is resume screening and candidate evaluation. AI-powered applicant tracking systems (ATS) scan and analyze resumes, sorting applicants based on the requirements of each job. Using natural language processing (NLP) and machine learning, these systems identify the most suitable candidates, significantly reducing the time spent reviewing applications (RabKettler & Lehnervp, 2019).

AI also enhances better communication with candidates, as AI systems such as chatbots provide real-time communication. These AI systems answer questions, schedule interviews, and provide updates on the status of an application. By providing 24/7 updates, chatbots improve the overall onboarding and hiring experience (Koivunen et al., 2022).

Another critical use of AI in recruiting is predictive analytics, which helps HR professionals make data-driven hiring decisions. AI algorithms analyze large data sets to predict a candidate's likelihood of success in a role based on their skills, experience, and 16 characteristics. This improves the reliability of hiring and reduces the likelihood of employee selection errors (Uma et al., 2023). Finally, AI also supports the analysis of video interviews. AI-based tools assess candidates' speech patterns, facial expressions, and tone of voice to assess their personality traits and skills (Anand et al., 2021).

Overall, AI is completely changing the future of the hiring process by making the process more efficient, data-driven, and tailored to an organization's specific needs. As companies increasingly incorporate AI into their hiring strategies, HR professionals are better equipped to examine vast amounts of data and focus on strategic decision-making. This shift (using AI) streamlines the hiring process and can result in more effective employee selection from the pool of candidates (Albassam, 2023).

The successful use of AI in employee recruitment depends on striking a balance between technological innovation and human judgment. AI should be seen as a tool that augments the capabilities of the recruiter rather than replacing human judgment. By combining the advantages of both AI and human expertise, organizations can promote a more effective recruitment process that is well-informed to meet an organization's future requirements (Allal-Chérif et al., 2021; Ore & Sposato, 2021).

2.3.1.1 History

In recent years, the use of artificial intelligence (AI) has greatly changed human resource management, and especially recruitment and selection. Since 2018, organizations have increasingly turned to AI-based systems to improve the accuracy of hiring decisions and address the inefficiencies inherent in conventional processes (Upadhyay & Khandelwal, 2018). Recruitment methods that were considered slow, labor-intensive, and vulnerable to personal bias have gradually been complemented and, in many cases, replaced by algorithmic approaches (Black & Van Esch, 2019).

Furthermore, social media has become a venue for identifying and attracting talent. The widespread use of digital platforms such as Facebook and LinkedIn has given recruiters

access to extremely large pools of potential candidates. However, this has also brought challenges in terms of effectively filtering and evaluating candidates (Michailidis, 2018). To meet these new challenges, organizations and businesses are increasingly adopting artificial intelligence tools, as they have the ability to analyze large volumes of data and identify relevant candidate profiles with greater speed and accuracy than humans (Black & Van Esch, 2019). This transition is demonstrated by the practices of large multinational companies such as IKEA, L'Oréal and Unilever, which have used artificial intelligence-based platforms, such as Robot Vera, Mya and HireVue, in order to optimize the assessment of candidates and enhance the objectivity of hiring decisions, eliminating issues of bias (Sekhri & Cheema, 2019).

Another significant change is associated with the rise in the adoption of applicant tracking systems (ATS) and chatbots to foster effective communication with the candidates and guide them through the process of job search. Chatbots powered by natural language processing can communicate with the candidates via e-mail and social media, providing continuous advice, answering their questions and giving feedback instantaneously (Nawaz & Anjali, 2019). This trend can be illustrated by the example of Olivia offered by Paradox, which allows recruiters to keep conversations automated yet personalized and simulate certain features of the dialogue between humans, simultaneously collecting valuable information about the candidates (Black & Van Esch, 2019). Moreover, video interview platforms driven by artificial intelligence technology, such as Affectiva and HireIQ, assess vocal inflections, emotional cues and facial expressions to form an opinion regarding personality and emotional intelligence (Fernández & Fernández, 2019).

The ability of Artificial Intelligence to process extended social data has also widened the scope of valuable information available for recruiters. Instead of focusing solely on biographies, companies can increasingly obtain an overall perception of candidates, reducing the purely subjective nature of recruitment decisions (Upadhyay & Khandelwal, 2018). Empirical evidence suggests that these technologies improve accuracy in hiring decisions, reduce costs and speed up processes related to workforce planning and matching skills with organizational needs (Srirang et al., 2019; Vedapradha et al., 2019).

At the same time, the emergence of hiring solutions powered by Artificial Intelligence is uneven across regions. Western and Asian economies tend to demonstrate relatively higher

levels of technological integration, while developing environments like India still have challenges with scale, workforce capabilities, and ethical risks associated with management (Savola & Troqe, 2019). Nevertheless, even under such restrictions, recruitment systems based on Artificial Intelligence remain highly relevant since they provide practical responses to the ongoing competition for talents through automation of candidate search and reduction of uncertainty in hiring processes (Hmoud & Varallyai, 2019).

The predictions made by Siemens and PwC indicate that Artificial Intelligence can contribute to creating over 420 billion euros annually for the European economy and roughly 15.7 trillion dollars worldwide up until 2030, highlighting its significance not only on an organizational but also on a more macroeconomic level (SIEMENS, as cited in Meshram, 2023). The pandemic of COVID-19 further accelerated this transition since organizations and universities were forced to adopt forms of virtual recruitment at a much faster pace (Johansson & Herranen, 2019). As a consequence, recruiting through Artificial Intelligence is increasingly expected to become the dominant model, transforming human resource management into a system practice that is heavily data-driven, adaptable, and ethically monitored (Dignum, 2018; Wright & Atkinson, 2019).

2.3.1.2 Algorithmic Talent Acquisition

Talent acquisition and selection is a key function of human resource management, as it allows organizations to identify, approach and evaluate candidates whose skills, knowledge and professional potential are linked to their strategic orientations. In today's business environment, where technological progress is accelerating and international competition is growing, companies are increasingly turning to innovative solutions, with the aim of strengthening their organizational effectiveness and competitive position. In this context, artificial intelligence AI artificial intelligence, i.e. technologies that allow systems to perform tasks associated with human mental functions, and machine learning ML machine learning, i.e. algorithms that exploit data and gradually improve their performance, are gaining central importance for the transformation of recruitment practices (Sinha et al., 2026). The integration of automated mechanisms and analytical tools into personnel selection processes enhances the ability of organizations to make decisions based on measurable data, clear

criteria and documented assessments, contributing to faster, more accurate and more inclusive management of candidacies (Manthana, 2021).

The use of artificial intelligence algorithms significantly upgrades the stages of searching, initial screening and evaluation of candidates. These systems can identify skills, experiences and professional characteristics that are associated with high work performance. At the same time, they reduce the administrative burden of human resources departments and enhance the standardization of the evaluation process (Chen, 2022). An example is automated resume scoring systems, which have the ability to process a very large number of applications in a short time, identify candidates with strong prospects, and allow HR executives to spend more time on strategic communication, personal contact, and assessing the candidate's cultural fit in the organization (Rathore, 2023; Khalifa et al., 2022). They can focus more on employee development, supporting organizational strategy, and responding to business needs immediately, while administrative processes are completed by automated systems (Khalifa et al., 2022). The effective use of these technologies is closely linked to the existence of adequate digital infrastructure, technological maturity, and organizational readiness.

The relevant literature presents recruitment as one of the most suitable areas of human resource management for intelligent automation applications. Reilly (2018) and Upadhyay and Khandelwal (2018) point out that artificial intelligence applications, which were initially treated as experimental solutions, have now become part of the core of modern talent attraction and selection practices. Yawalkar (2019) highlights their contribution to functions such as recruitment, employee development and training, while Van Esch et al. (2019) link their increasing diffusion to the intense competition for attracting highly skilled employees. The ability of automated systems to collect, classify and interpret large volumes of data at high speed offers organizations a significant strategic advantage, especially in labor markets where access to suitable human resources is a critical success factor.

2.3.1.3 Candidate Experience

As a part of the recruitment pipeline, conversational technologies are gradually influencing the candidate experience through faster responses, more accurate and consistent information. Modern chatbots engage candidates from the very beginning, greeting them

upon discovering an opportunity, answering standard questions, scheduling interviews, and informing applicants about their application status. In addition, advanced conversational platforms also process structured and unstructured data to detect competence-related signals, while feedback tools, such as explanations of suitability and recommendations for developing relevant skills, are designed to enhance impressions of fairness and transparency. According to the general research, these qualities contribute to enhanced employer branding by improving perception of innovativeness, responsiveness, and fairness, alongside boosting candidate satisfaction and engagement (Black & van Esch, 2020; Hunkenschroer & Luetge, 2022).

A mechanism that is highly important to mention is the lowering of the period of the hiring process. Chatbots that are available 24/7 will be able to provide information consistently along with the updates related to the status, thus minimising the uncertainty associated with the phase between applying for the job and receiving a decision. If personalized and constructive feedback is provided, such as explaining why candidates were unsuccessful and how they could improve their next applications, there are higher chances of them being satisfied with the procedure and being interested in applying once more, even in case they do not succeed. Thus, in such instances, the reputation of the organization can benefit. On the contrary, chatbots that are impersonalized and unresponsive may negatively influence the satisfaction level of candidates and affect the employer brand negatively, especially when scripted communication does not correspond with context complexity and there are no explanations provided regarding recruitment decisions (Hunkenschroer & Luetge, 2022).

Chatbot ability to interact with candidates in a natural language mode helps in creating a recruitment process that feels smoother and more customized. As noted by Kaur (2023), the example of ChatGPT shows how conversational agents driven by artificial intelligence are able to automatically screen candidates, provide instant notifications about the status of the applications, and give answers to personalized queries in a human-like way, thus helping to save time and reduce information gaps. This instant response contributes to feelings of respect and inclusivity, which are key psychological drivers behind a positive candidate experience.

Several implications of the wider literature for employer branding and candidate satisfaction become evident. One important implication concerns the role of responsiveness and feedback as crucial factors mediating perceptions of fairness and satisfaction due to the preference of candidates for prompt and insightful communication over mere acknowledgment of their inquiries. Another implication of the current body of research relates to transparency in AI-mediated interactions, including the explicit indication of whether the candidate is communicating with a computer program and explaining the criteria for selection, thus building up trust and reducing fears about algorithmic biases (Albert, 2019; Kaur, 2023). Yet another implication relates to the impact of personalization on creating a more distinctive brand that makes candidates feel appreciated personally instead of simply going through the process of selection anonymously.

In the end, candidate experience based on AI-enabled bots and feedback systems is revolutionizing candidate experience into one that is dialogic and data driven, where each automated conversation can have the potential to strengthen or undermine the social identity of the employer. As stated by Kaur (2023), for such a system to work, it cannot be purely dependent on technical aspects but should be aligned with important human values such as transparency, empathy, and clarity. In the future, it is not about automating out HR professionals but rather enhancing their relational approach through intelligent and feedback-driven conversational design.

At the end, it can be argued that the success of the recruitment efforts and their alignment with the concept of employer branding seem to depend on the approach taken when using chatbots.

2.4 AI in Performance Management and Continuous Evaluation

The integration of AI into performance management has radically changed the way in which companies monitor, measure and manage employee performance. Traditional approaches, which involved periodic performance appraisals and subjective judgments by managers, are increasingly being replaced with more modern, continuous and data driven approaches to performance monitoring and assessment. In this context, AI has the potential to make use of huge amounts of real time data for analysis, help with goal setting and feedback,

and engage in discussions about the accuracy, consistency, and credibility of algorithmically derived performance assessment.

According to existing studies, AI-based analytics are capable of identifying signs of reduced performance or well-being, which could involve reduced communication, delays in completing tasks, or changes in working patterns – thus suggesting disengagement or exhaustion before it becomes apparent through conventional measures (Brougham & Haar, 2018). In cases where both ethical and legal considerations permit it, wearable technology along with sensor data can enhance predictive ability further, picking up physiological factors associated with stress and tiredness. As long as technology is deployed responsibly, this approach encourages an evolution beyond reactive performance management to proactive management of employee performance and well-being issues before they develop further (Rydén & El Sawy, 2022). However, while there is an abundance of potential data sources available in today's workplace, the use of such extensive streams of data creates considerable worries regarding issues related to privacy, surveillance, and informed consent. Notably, the relevance of AI enabled performance prediction depends on more than just precision; rather, it depends on the presence of governance mechanisms that outline boundaries for data harvesting, its utilization, and employee rights (Vrontis et al., 2022).

Research findings reveal that AI facilitated feedback systems enhance performance due to the provision of timely and relevant feedback, instead of providing assessment that happens long after the activity has been done (Li et al., 2023). An example of how AI could be used for performance management includes the identification of issues faced by an employee in doing certain tasks, and the suggestion of appropriate support measures like offering suitable resources, engaging in micro-learning activities, and balancing workloads. Such feedback is similar to current performance management methods, which focus on development and empowerment over monitoring and control mechanisms (Pulakos et al., 2015).

Validity and reliability are the primary issues related to AI based performance management systems. Several empirical papers explored whether AI ratings correlated well with the traditional performance estimates made by supervisors and found out that criterion validity was rather moderate to high in most situations. In particular, AI ratings showed good

correlations for task-specific and productivity-related aspects of performance (Strohmeier, 2020).

An important aspect that needs consideration is how employees perceive the use of such systems. In particular, a paper by Vrontis et al. (2022) found that their acceptance of algorithmic evaluation depended largely on the issues of fairness and procedural justice. Overall, the use of AI in continuous performance management and evaluation offers several benefits with regard to enhancing its precision, immediacy, and developmental character. The integration of data collected via sensors, combined with algorithmic goal-setting and feedback processes enables shifting to continuous and data-driven performance management. However, issues of validity, ethical governance, and employee attitudes show that hybrid approaches, which reinforce the role of human judgement, are needed to optimize the effect of AI on performance evaluation. As long as the process of performance management operates through reliable, ethical, and transparent practices, there are good prospects for AI to contribute significantly to both organizational effectiveness and employee well-being.

2.5 Organisational Benefits and Value Realisation

Over the last decade, the application of artificial intelligence (AI) technology has become significantly more prevalent in numerous industries, such as Human Resource Management (HRM). AI is often seen as a revolutionary factor in HRM, allowing for higher efficiency, precision, and evidence based practices during key human resource processes. One of the sectors where the impact of artificial intelligence is especially notable is recruiting and staffing. According to empirical studies, AI-powered analytics and decision making models have the potential to improve the accuracy of selection decisions by analyzing large sets of data that describe applicants' personal features and productivity-related parameters (Nazri et al., 2019). AI-based software solutions can automatically examine thousands of résumés and applications, selecting only those individuals whose qualifications match the job descriptions. This enables them to cut down the amount of time and effort needed for the task while decreasing the possibility of biased and inconsistent screening practices.

Moreover, apart from recruitment, artificial intelligence plays an increasingly important role in the management of employee engagement and retention strategies. Studies show that

using intelligent systems helps in designing HR policies that encourage innovation and improve employees' commitment to their work. By analysing relevant workforce-related data on performance, absence, and engagement, AI can identify patterns linked with a decline in motivation and high turnover rates. This information makes it possible for HR practitioners to implement preventive interventions that include targeted training, career advancement options, or even organisational culture transformation before (Kimseng et al., 2020).

Additionally, AI contributes significantly to learning and development within the organization. Intelligent HRIS can analyze the work records and skills of the employees to highlight knowledge gaps and suggest appropriate training measures (Masum et al., 2018). In turn, AI-based learning platforms provide opportunities for personalized learning where the material is tailored to the needs of each employee. Such personalization has been found to positively impact the learning experience, enhance engagement and lead to better skill acquisition (Reddy et al., 2019).

Another field affected by artificial intelligence is performance management. According to studies, AI can revolutionize the core processes of HR by enabling a continuous data-driven approach to performance evaluation (Bhardwaj et al., 2020). Due to AI-based analytics, organizations become capable of accurately identifying strengths, weaknesses and development needs of employees. Based on the analysis, HR professionals can develop customized performance management plans that match the capabilities of employees and the needs of the organization, ultimately boosting organizational efficiency and performance (Oswald et al., 2020).

Also, AI plays a critical role in improving workplace safety and compliance with health and safety regulations. Through analyzing data gathered through sensors and digital reporting systems, among other data sources, the algorithms embedded in AI can detect potential issues in regard to workplace safety and hazards that might arise, allowing the organization to undertake preemptive measures and avoid any potential incidents. Moreover, the use of AI technology increases compliance with regulations and improves monitoring, thereby increasing accountability in the increasingly complicated workplace environment (Tambe et al., 2019).

Although there have been increasing interest on the topic of AI-powered HRM, there is still a lack of empirical evidence for the application of such technologies within the scope of developing economies. In other words, it appears that there is insufficient data concerning the use of AI-powered tools in low and middle-income countries, particularly those located in Africa and South Asia. According to recent studies, companies that are based in low and middle-income countries face specific challenges when adopting such tools, which include low levels of technological infrastructure, financial restrictions, a lack of qualified employees, and more complicated institutional environments compared to their high-income counterparts (Bibi, 2019; Bhakuni, 2023). Therefore, there may be certain differences between the conclusions made by researchers about the implementation of AI tools in high and low-income economies. Hence, further research is needed to fill the gap in this area.

The contemporary application of artificial intelligence incorporates advanced technologies which go far beyond just basic automation. These include virtual assistants which enable continuous interactions between people and machines, augmented reality which involves incorporating digital elements within the real environment, machine learning which improves based on previous experiences, cognitive computing which attempts to replicate certain elements of human thinking, and predictive analytics which enhance forecasting and data-driven decision-making. All of these developments demonstrate the move towards increasingly digital, intelligent, and data-driven organizational processes. In the context of Human Resource Management (HRM), the advances in technology hold great potential for change and improvement of organizational performance (Xingzheng, Jingliang & Chengchun, 2018).

AI HRM systems rely heavily on the analysis of both historical and current data when making assessments about employees' behaviors, performances, and future potentials. This allows companies to minimize uncertainties in their human resource management activities and create an organizational environment that is predictable and transparent (Jiang et al., 2018). Many tasks traditionally completed by human resources departments have already been automated using AI tools, which allows for better learning practices, efficiency, and accuracy in performing HR duties. AI-based approaches also make the assessment process much more objective, as well as aligning better the needs of the job and candidates' attributes, thus improving the process of recruiting new hires. These AI applications might also be

useful in increasing an organization's income through career management, transparency, and more strategic allocation of talent. Cost reductions could be achieved due to productivity, engagement, and experience surveys performed by means of AI.

Additionally, AI is integral in the broader revolution of HRM practices through the enhancement of learning and the increased knowledge among employees regarding their career prospects within organizations. In the case of talent acquisition, AI-enabled technology increases the speed and accuracy of the recruitment process since it matches individuals' skills and potential with those of the organization. This means that organizations will be in a better position to identify promising individuals while minimizing recruitment timelines (Bhoite, 2018).

Moreover, AI has transformed the process of assessing candidates by moving the focus from intellectual tests to the evaluation of emotional and social skills. AI makes it possible for recruiters to learn more about the behavioral patterns, problem-solving techniques, and importance of educational achievements when evaluating candidates' psychological characteristics. Also, AI-powered chatbots make it easier for recruiters and employees to communicate, integrate new hires into teams, and learn about the culture and expectations in an organization. Such platforms serve as interactive environments that promote cooperation, enhance information exchange, and foster better relations within the workplace (Buzko et al., 2016).

A more comprehensive description of the beneficial applications of AI will be provided below.

2.5.1 Health and safety improvement in the workplace

AI has been found increasingly to be recognized as a major instrument to enhance occupational health and safety in Human Resource Management owing to its capability to facilitate organizations to shift from their reactive approaches toward safety to more proactive and data-driven preventative approaches. It has been shown that in all the articles analyzed, AI is discussed not only as a technical aid, but as part of the whole organizational transition

from conventional approaches to risk assessment and management and monitoring of the well-being of their workers to a more systematic and predictive approach in protecting them.

An important part in the literature is the potential of AI in helping organizations enhance hazard detection by means of real-time monitoring and pattern analysis. According to Wang et al. (2020), AI-enabled systems are capable of analyzing information obtained from sensors, surveillance, wearables, and operational monitoring tools to detect potentially dangerous situations and behaviors. This development is significant because it shifts the focus from post-hazard management to a proactive approach to maintaining safety in the workplace, as defined by the capacity to analyze hazards as they arise. Therefore, AI enables organizations to gain a greater advantage in the early detection and prevention of hazards.

Another aspect of this literature addresses the implications of AI in detecting health risks associated with employees. According to Ngai, Chan, and Moon (2020), AI applications are capable of analyzing physiological data, absence rates, and workload trends, among other types of employee-related data, thus helping organizations identify any possible risks to their health at an early stage and implement appropriate intervention measures. It is especially significant for this literature that it extends the concept of occupational safety from only physical dangers to psychological factors, such as stress and fatigue, and well-being. Hence, AI technology helps incorporate health management into the broader HRM agenda, thus making the workplace environment safer and more productive for the company's long-term survival. Nonetheless, it should be noted that despite the optimism surrounding AI-driven systems, their implementation and functioning should not be blindly accepted since they involve using personal data, which poses numerous privacy and ethical issues.

Another trend in the recent literature on safety management involves the use of AI in enhancing communication within the organization. According to Arias (2021), an AI based chatbot allows one to immediately gain access to relevant safety measures, policies, and emergency response information, which enhances overall organizational effectiveness and employee awareness. As opposed to previous models of communications, such an approach seems to ensure greater accessibility, availability, and interactivity of information regarding safety measures. Such a perspective is important since it implies that AI may be used to strengthen the corporate safety culture not only by enhancing surveillance and predicting problems, but also by fostering communication. However, it does not seem that researchers

pay much attention to whether or not such technology is effective for all employees irrespective of their digital literacy or position.

In summary, the reviewed literature shows that artificial intelligence contributes to occupational health and safety in several ways, including predicting hazardous situations, early health risk detection, improving safety communication, and better ergonomic design. Simultaneously, however, the literature reveals that all the above aspects depend on various external factors. In particular, this technology works effectively when used strategically, that is, as a tool for preventive measures rather than episodic interventions.

2.5.2. Enhancing employee comfort

Through artificial intelligence, there are numerous opportunities created in regards to making workers comfortable through intelligent working environments which are dynamic and personalized according to their needs. One of the main opportunities created by AI with regards to increasing employee comfort is through the intelligent control of physical working conditions. AI-driven technologies allow the analysis of data provided from various environmental sensors which include humidity, light, temperature, and air quality. The environment is then adapted accordingly with time due to changes in occupancy and usage of the space. Through this process, organizations can ensure that more favorable working conditions exist while at the same time conserving energy and making employees happier (Zhang et al., 2021).

In addition to the control of ambient factors, AI is able to enhance the personalization aspect of employee experience through offering solutions for comfort that align better with individual needs. Modern AI systems are capable of analyzing information related to the physical attributes of employees, their work schedules, and preferences in order to make suggestions on ergonomic adjustments in the form of changing the height of the desk, the position of the chair, and even the location of the computer screen. This tailored approach helps decrease the level of physical strain and exhaustion, particularly in jobs that involve prolonged desk work.

Additionally, AI plays a critical role in the identification and treatment of psychosocial disorders that influence the level of comfort of employees, especially concerning stress at the workplace. With the ability to observe indicators such as patterns of

engagement, forms of interaction, distribution of workload, and general behaviour, AI technology can detect the signs of distress or increasing levels of stress within employees. This will enable HR personnel and managers to implement targeted efforts to help improve the level of well-being in employees through actions such as distributing workloads or rescheduling, among others. In doing so, AI is able to not only facilitate the creation of physically comfortable working environments but also psychologically comforting ones (Ugwu & Abdelrahman, 2020).

2.5.3. Employee productivity measurement

In the literature, there seems to be an increasing consensus that artificial intelligence represents an influential factor in the evolution of employee productivity measurements due to its impact not only on the tools used for such measurements but also on the general assumptions underlying performance evaluations. In particular, compared to the traditional use of periodical evaluations and managerial perceptions or even employees' self-reported outcomes, AI provides a different way of analyzing employees' work, making the measurement process more dynamic and data-driven. According to the reviewed sources, the adoption of such tools as part of modern HRM is among the key roles played by AI in the context of modernity.

Another area in which researchers tend to concur about the importance of using AI relates to the need to automate administrative activities to make organizations more efficient. According to Czarnitzki, Fernández, and Rammer (2022), the use of AI can help with automating such tasks as data entry, scheduling, reporting, and some elements of performance management. The significance of this aspect of the use of AI lies in the fact that productivity measures can be seen not only in terms of evaluation but also in relation to resource savings within organizations. On the other hand, as shown in the literature, automation can be beneficial for organizations due to the opportunities it presents in terms of helping managers engage in strategic activities rather than being busy with routine tasks. It is worth noting that although the studies mentioned above highlight this aspect of the application of AI, they do not consider the potential of this technology to limit managerial involvement in real-life work.

Another key area that receives significant attention in current literature is that of increasing real-time monitoring of productivity. Back et al. (2022) demonstrate that AI driven technologies are capable of processing large amounts of information regarding employees' work, namely, information related to duration of tasks, workflows, rates of task completion, output levels, etc., resulting in creation of dashboards and feedback loops that ensure instant availability of data about the level of performance. This approach is fundamentally different from traditional evaluation methods, which, in contrast to real-time measurement, imply retrospective assessment of productivity performed at certain intervals. While the former view is presented in the literature in a rather positive light – due to the opportunity for earlier identification of performance problems – the latter perspective suggests that, conversely, such an approach might exacerbate performance pressure and normalize constant monitoring. Hence, the literature highlights the advantages of real-time measurement while also suggesting that its acceptance is contingent upon certain governance factors.

Finally, another trend suggested by the literature is a more comprehensive approach to performance management. As AI can analyze productivity patterns in conjunction with other variables like workload, job engagement, and skill utilization, organizations can evolve beyond merely recording performance metrics to taking a more active role in improving it. This development is crucial since productivity measurement should be integrated into the overall system of optimizing and developing employees rather than serving as a separate activity. In turn, an important implication of this trend is that measuring productivity becomes quantitative and forward-looking. Such an approach may help improve the capacity of organizational planning, but at the same time, it also may lead to over-measurement issues and the reduction of human performance to quantifiable metrics.

In conclusion, the literature review highlights several aspects of how AI technology changes the way organizations measure employee productivity. First, it automates routine administrative activities associated with productivity measurement. Second, it ensures continuous monitoring of employees' performance. Third, it standardizes evaluations of productivity and facilitates objective measurement. Finally, it allows analyzing productivity patterns and forecasting future productivity.

2.5.4. Automating payroll processing

AI has turned out to be very significant in payroll automation because of its ability to transform the most complicated and mistake-prone aspect of Human Resource Management. Payroll AI is capable of carrying out a variety of important payroll operations automatically, such as payroll computation, deduction of taxes, overtime pay, employee benefits, and leaves. Additionally, this system is able to make updates to the database of employees automatically when any change happens so that payroll information is updated and correct. As a result, businesses are able to minimize the amount of work that their HR professionals do, since they will have more time to concentrate on other matters, reducing the amount of manual labor required (Mohamed et al., 2022).

Apart from increasing the efficiency of operations, AI provides significant benefits in terms of accuracy and reliability of payroll management. Using analytics and pattern recognition, AI tools can detect inconsistencies or abnormalities within the payroll system that would otherwise be overlooked. This includes such things as double payments, inaccurate tax amounts, or differences between actual working hours and salary received. The ability to detect such issues early on in the process ensures that mistakes are corrected prior to payroll processing completion, thus minimizing losses and avoiding negative repercussions for an organization's reputation. From this perspective, AI increases the reliability of payroll infrastructure (Zadorozhnyi et al., 2022).

AI further has an important role to play in ensuring that regulatory compliance is enforced in payroll management. AI-enabled payroll management systems have the capacity to analyze transactions constantly against applicable laws and regulations, including those on minimum wages, overtime pay, social insurance, and taxation. Through automatic adjustment of the payroll calculations whenever there are changes in laws and regulations and early detection of risks associated with non-compliance, AI can assist organizations in reducing their risk of fines and audits for not being compliant. Such an approach to compliance will enable an organization to maintain proper compliance with labor and tax laws (Leaders et al., 2022).

2.5.5. Real-time feedback

AI has significantly increased the capacity of organizations to deliver feedback that is not only timely but also personalized and evidence-based. Systems based on AI allow for constant monitoring of performance due to real-time analysis of data associated with such elements as task accomplishment, effectiveness of processes, and level of adherence to previously set objectives. Based on this assessment, feedback may be provided regarding the current employee performance status and areas that require improvement. Personalization and customization of feedback are facilitated by such aspects as the role of an employee within a certain organization, his or her individual traits, and personal needs associated with professional development (Rydén & El Sawy, 2022).

Personalization is not the only positive feature of AI-powered feedback. In addition to this one, AI facilitates greater objectiveness in the provision of feedback. Conventional approaches to providing feedback often depended on the personal opinions of managers or regular appraisals that had little or nothing to do with any type of evaluation of performance or skills. The use of AI and data analytics allows for greater consistency and impartiality since feedback is given based on performance results and behavioural patterns observed in employees (Vrontis et al., 2022).

Moreover, there is an additional advantage in AI as far as providing feedback is concerned. The ability of such systems to analyze vast amounts of data almost instantaneously results in provision of feedback either immediately or almost immediately, without waiting for the official period when appraisal occurs. Thus, individuals will have the chance to take action at the earliest possible moment and adjust their performance accordingly, before completing the task itself. In this way, real time AI-based feedback leads to fostering the atmosphere of constant self-improvement, and eventually promotes high engagement levels and responsiveness (Durana, Krulicky & Taylor, 2022).

2.5.6. Impact on digitization of HR

Although the scholarly literature acknowledges the role of artificial intelligence in facilitating the digital revolution in the field of Human Resource Management, the findings of the studies under analysis imply that the value of AI does not only reside in its ability to

automate particular processes but also in the overall transformation of the organizational structure of HR activities, their performance evaluation, and the link between the decision-making process and HRM functions.

The first and most prominent research trend in the literature is associated with the process of digitalizing recruitment and selection. As mentioned by Sharma et al. (2022), AI technologies are able to facilitate the automated process of screening and short-listing applicants for employment. This would not only allow reducing the time and effort invested in the recruitment process but would also contribute to its overall efficiency. Similarly, Nawaz (2019) suggests that one of the most important advantages of using AI in selecting candidates lies in its consistency. While these studies prove that artificial intelligence has a major role to play in improving recruitment procedures, the literature on the matter does not always highlight the need to consider other important aspects. In particular, it appears to be focused on such factors as speed and consistency while failing to account for the existence of unconscious bias within an AI algorithm. Therefore, AI's role in digitalizing recruitment cannot be underestimated, yet it should not be considered absolutely neutral.

The literature indicates a certain trend among researchers of focusing not only on automation but also on personalization in the process of HR digitization. These findings are crucial because digitalization does not have to mean depersonalization. At the same time, one cannot ignore the optimism that characterizes the literature on the topic under discussion. One must consider whether there is enough information to implement personalized onboarding effectively, how well the system functions, and whether organizations can use digital advice to benefit employees.

In addition to the specific areas of HR management, it is argued in the literature that AI-facilitated digitalization increases the strategic role of HR. Johansson and Herranen (2019), and Dolan, Schuler, and Jackson (2022) claim that the use of AI-driven analysis allows HR managers to have better skills in finding potential weaknesses and predicting future requirements for personnel, as well as developing strategies for training staff in accordance with organizational objectives. In this regard, the presented perspective is highly significant for research into digitalization in HR management. At the same time, it must be admitted that this perspective is rather debatable, as the increased role of HR management

can be achieved not only by having advanced analytical tools but also through the ability to interpret and implement them in practice.

In general, according to the literature, it can be suggested that the effects of AI on the digitization of HR management consist in the following main trends: more automation, more personalization, and greater reliance on analytics. However, at the same time, according to the literature reviewed above, the mentioned trends are also associated with many important challenges that include, for instance, such issues as biases, privacy concerns, overreliance on data, and others. This means that the process of AI-driven HR management digitization can be described as not only revolutionary but also controversial.

2.5.7. Organizational network analysis

With advancements in artificial intelligence, ONA has been greatly enhanced by its ability to automate the collection, analysis, and interpretation of relational data. AI-driven technology enables the assessment of vast amounts of communication history, such as email exchanges, to uncover relationships and determine key players in the organization, such as influencers and informal opinion leaders that influence the flow of information and decision-making. This makes relational patterns within the organization visible through AI-based ONA, thus providing insights into the functioning of the organization beyond the official organizational chart (Ye et al., 2021).

Moreover, apart from communication metrics, AI can help broaden the ONA agenda by leveraging information produced on social media channels and other digital resources within organizations. By analyzing such digital footprints of interaction, AI can recognize informal networks, inter-functional connections, and communities of practice that are usually missed by traditional HR metrics. This kind of information is extremely valuable for analyzing patterns of collaboration, knowledge flow, and idea sharing between various organizational segments (Lei & Wang, 2020).

AI is able to improve ONA through combining information from employee surveys, thus providing a better understanding of how the social and psychological aspects of work influence engagement, trust, and collaboration. By analysing both the survey data and the data on interactions and communications, AI-driven technologies are capable of identifying

trends associated with higher and lower levels of engagement and with facilitators or inhibitors of effective collaboration. Such an all-round analysis allows HR specialists to go deeper than mere surface-level signs and acquire more knowledge about organizational connections (Sarkar & Maiti, 2020).

2.5.8. Organizational design

There has been increasing recognition of artificial intelligence as a significant agent of change in organizational design not only due to the increased efficiency of information processing but also because it creates an opportunity to reevaluate approaches to designing roles, structures, and labor composition within organizations. The key feature that is shared among all examined articles is the emphasis on the fact that AI increases the amount of empirical knowledge available for decision-making regarding organization structures through the analysis of great amounts of data about the skills, performance, experience, and career paths of employees. Yet, its importance is not solely related to increased accuracy but rather to the transition to dynamic models of design.

According to Vinichenko et al. (2019), AI can facilitate more precise role allocation in organizations by helping identify those workers whose skill sets and performances align closely with specific organizational roles. This view fits into a wider theme of studies that associate AI with the strategic utilization of human capital through better talent placement, movement, and planning. However, one must be cautious about the implications of such insights. Although they point to how AI can optimize the matching of individuals and their roles, they imply an assumption that workers' attributes can be quantitatively determined based on existing information. This is practically valuable but could miss some nuances about how human abilities and role fit depend on contextual and relational considerations.

Another research theme for the literature is the effect of AI on organizational flexibility. According to Thite (2018), AI provides the means for organizations to adjust themselves to any changes in their environment (e.g., customer behavior, market dynamics, competitive pressures) and become highly responsive to them. In this case, organizational design is no longer viewed as a regular activity of managers but becomes a flexible process which takes place according to real time feedback. Teams may be restructured, new reporting

hierarchies might be implemented, and various roles might change. However, it should be mentioned that the literature often views adaptability as something entirely positive, while ignoring possible issues associated with it. For instance, continuous changes in organizational structures could lead to instability within organizations. Therefore, it might be important to discuss the implications of adaptability in connection with employee stability and other factors.

In general, the major contributions of AI into organizational design may be classified into three main types: role allocation optimization, improvement of the organization's adaptability and implementation of fair organizational design practices. On the other hand, it becomes evident from the analyzed sources that those contributions cannot be considered either neutral or entirely positive. The usefulness of AI in organizational design largely depends on a number of factors such as the proper balance between analysis and context, adaptability and stability, as well as efficiency and ethics.

2.6 Benefits & Challenges of Artificial Intelligence in the context of Human Resource Management

Artificial Intelligence is increasingly being used by HR departments in businesses to streamline various processes and enable data-driven decision-making. However, its application in HR comes with both advantages and challenges.

To start with, the main advantages of its use in HR are as follows (Altemeyer, 2019; Pan & Froese, 2022):

- **Efficiency and automation:** AI systems can automate repetitive and time-consuming tasks, such as CV screening, interview scheduling, and onboarding. This not only speeds up the hiring process but also frees up HR professionals to focus on strategic initiatives and employee engagement.

- **Improved candidate screening:** Using AI can analyzed large amounts of data to identify the most suitable employees. This can potentially reduce human bias in initial assessments, leading to a more objective and merit-based hiring process.

- **Data-driven insights:** AI tools can process and analyze data to provide insights into performance trends, employee satisfaction, and turnover/attrition risks. This information

helps HR departments make informed decisions about their employee training, development, and retention strategies.

- Improved employee experience: Chatbots and virtual assistants can provide real-time support for HR queries, ensuring that employees receive timely answers to concerns and issues. This enhances overall employee satisfaction and engagement.

On the other hand, the main disadvantages of using AI in HR are the following (Altemeyer, 2019; Bankins et al., 2022; Malik et al., 2022; Pan & Froese, 2022):

- Risk of bias: Although AI is designed to minimize human bias, it can unintentionally perpetuate existing biases and prejudices if the data on which a decision is based contains historical biases. This can lead to unfair practices and human resource mismanagement.

- Depersonalization of HR processes: Over-reliance on AI for critical HR decisions can lead to a loss of human touch. Employees may feel that their unique skills and experiences are overlooked when decisions are made solely by algorithms.

- Concerns about privacy and data security: AI systems require access to vast amounts of sensitive employee data. Without strict security measures and compliance with data protection regulations, there is an increased risk of data breaches and privacy violations.

- High implementation costs: Integrating AI technologies can be expensive, requiring significant investments in technology, employee education/training, and maintenance. Small and medium-sized organizations may find these costs difficult to manage.

Overall, while AI in HR offers notable efficiency benefits, organizations must balance these advantages with risks related to bias, depersonalization, privacy, and cost to ensure ethical and effective HR practices.

In more details, the research on Artificial Intelligence in Human Resource Management suggests that there is a wide consensus on the view that the problems associated with the use of AI are far from being merely technical but also organizational, ethical, and managerial. While many researchers recognize the practical benefits associated with using AI, recent studies argue that the adoption of AI in HRM changes the dynamics of social interactions at work, transfers power from employees to management, and creates new uncertainties for all stakeholders involved. In this regard, AI is not only considered an effective instrument to increase productivity but a socio-technical phenomenon capable of

transforming organizations much faster than their culture, institutional setting, and professional roles evolve.

One of the critical areas of intersection within the literature pertains to the dilemma between computational capacity and human judgment. On one hand, AI is recognized for its capacity to handle vast amounts of data, identify patterns, and assist with rapid decision-making; on the other hand, some authors maintain that this capacity becomes inadequate in HR applications where issues of moral ambiguity, interpersonal sensitivities, and context-dependent assessments arise. According to He (2017), artificial intelligence is unable to empathize, reason morally, and respond to contextual factors in such areas as employee disputes, justice-related assessments, and handling vulnerable cases. The value of this stance is that it counters technological determinism in terms of AI being treated as a perfect replacement for management discretion. According to the literature, what renders artificial intelligence ineffective in human resource management is not its computational abilities but its failure to interpret human labor from a socially and ethically valid perspective.

According to Cappelli, Tambe, and Yakubovich (2018), implementation of AI within HR management is hampered by high costs, uncertain payback, integration issues, and challenges related to the coordination of AI solutions with overall organizational strategy. It is important to discuss the mentioned studies because, contrary to the simplistic approaches to AI discussed above, they allow understanding that organizations vary in terms of readiness for innovation adoption and, thus, that some of the benefits may remain unattainable. Specifically, it becomes clear that implementation of AI within organizations is dependent not only on its presence but also on leadership commitment, adequate data availability, infrastructure development, and effective change management skills. Therefore, academic works that focus on increased efficiency should be understood critically.

Also, we must mention the impacts of automation on humans. Many scholars have suggested that workers who perform mundane and repetitive work face higher levels of automation pressures, which can cause increased feelings of insecurity, opposition to change, and erosion of their trust in management. This particular area holds great importance for us as it reflects upon a more critical approach to the adoption of AI in organizations, since technological revolution takes place unequally in the workplace. The impact of this is not

limited to just the restructuring of employment alone but extends into many other areas, including employee well-being, organizational legitimacy, and procedural fairness.

In general, the key difficulty of AI in HRM is not the capacity to implement automation of HR activities but doing it without compromising fairness, trust, and a human-centered approach in management. Therefore, a distinct direction of further research emerges, which consists of developing hybrid solutions that leverage AI capabilities while retaining human decision-making as a core element.

Discussion

As seen throughout the above sections, this research has shown that artificial intelligence is not a peripheral technology used solely in order to automate routine administrative tasks in Human Resource Management HRM. Instead, it represents a widespread enabling technology that plays a significant role in redefining how companies recruit, evaluate, train, and retain human capital. The evolution in AI from the expert systems to machine learning solutions indicates that the benefits of using AI in HR do not arise from one technological advancement, but rather from the combination of an increasing amount of available data, increasing computational capabilities, and platform-based working infrastructure that produces digital footprints. In this regard, HRM becomes increasingly computational, as decisions that used to be episodic, highly discretionary, and narrative-driven become increasingly supplemented – and sometimes even challenged – by algorithms of inference, prediction, and recommendation.

Another important implication relates to recruiting and candidate sourcing, where, according to experts, AI reached its peak popularity and application rate. Based on the analysis, it was shown that modern recruiting processes, particularly in the context of social media-based platforms, along with numerous applicants, create the necessary environment for applying algorithms in recruiting, including candidate screening, ranking, and even engagement (Black & Van Esch, 2019; Upadhyay & Khandelwal, 2018). In turn, AI-based systems can help recruiters to speed up the initial selection process, save their time by automating many activities associated with this stage of recruiting and provide for standardizing communication with candidates through chatbots (Tambe et al., 2019). On the other hand, exactly the same features that help to improve efficiency are also responsible for the increased risk of issues related to bias, transparency, and accountability in the process, which becomes particularly evident when algorithms work with historic data (Raghavan et al., 2019; Buolamwini & Gebru, 2018). From a practical standpoint, AI implementation in recruiting can be seen as being most sustainable and justified under conditions where AI serves as an augmentation of recruiting capacity rather than replacement of human decision-making.

This issue assumes even greater importance in the area of performance management and continuous evaluation, which is directly linked to a fundamental tradeoff between

support and control at play in organizations. Data flows created through emails, collaborative tools, task management systems, and wearables if used, can provide machine learning algorithms with insights on the levels of productivity, engagement, and risk of exhaustion of workers (Chowdhury et al., 2022; Brougham & Haar, 2018). In turn, this creates possibilities for establishing feedback loops that will make it possible to move away from traditional, time-lagged appraisal processes towards more continuous coaching and learning (Pulakos et al., 2015). On the other hand, this data-generating process could be seen as an exercise in surveillance on part of the employer if the organization lacks effective governance mechanisms or the AI system is viewed as an instrument of control. According to research reviewed in this paper, acceptability of artificial intelligence in such cases would depend significantly on perceptions of procedural justice, involving explanations, human oversight and limitations on data uses (Vrontis et al., 2022). Consequently, the potential of AI is much less about technical aspects than about legitimacy and social acceptability of its applications.

This research not only consolidated organizational advantages and mechanisms of value creation other than those pertaining to recruitment and performance management. AI-enabled health and safety solutions can detect potential threats, enhance risk predictions, and facilitate communication on safety matters via conversational user interfaces (Ngai et al., 2020; Arias, 2021). Likewise, AI-based ergonomics and comfort management systems, utilizing sensor-based environmental control and personalized workplace modifications, highlight that HR-relevant outputs are becoming more coproduced due to the interplay between facilities information, IoT platforms, and analytics (Zhang et al., 2021; Yu & Lee, 2020; Ugwu & Abdelrahman, 2020). Such initiatives extend HR functions because an employee's experience is becoming increasingly quantifiable and customizable via constant feedback loops rather than through one-off questionnaires. Nevertheless, such an extension raises governance questions concerning consent, data scope, and the balance between surveillance and measurement, none of which can be addressed through analytics alone.

One more valuable contribution of this research is that it sheds light on how the process of digitizing HR practices through AI and transforming the nature of HR management takes place. The automation of recruitment screening, personalized onboarding, payroll management, and employee engagement analytics may move HR professionals from operational routine to more strategically valuable tasks like workforce planning, development

of workforce skills, and organizational transformation (Mohamed et al., 2022; Dolan et al., 2022). On the other hand, AI-assisted organizational network analysis (ONA) and AI-driven organizational design prove that the use of AI is not limited to HR transactions alone. It also impacts strategic decision-making by uncovering influential individuals, pointing out collaboration problems, and allowing flexible role and team designs (Ye et al., 2021; Lei & Wang, 2020; Thite, 2018). This is particularly relevant in regard to the fact that AI helps view HRM as an intelligence-producing function rather than a policy-administration one. At the same time, the increasing reliance on algorithmic insights obliges HR to build competencies in data management, model interpretation, and ethical governance, which were traditionally considered secondary to HR knowledge.

The challenges highlighted by the thesis synthesis further point to the fact that the introduction of AI into HRM is neither simple nor easy. To begin with, it is important to highlight the fact that one of the most relevant limitations is associated with the ethical/social dimension because algorithmic processes lack moral considerations, empathy, and context awareness which may be necessary in conflict management and equity-related judgments (He, 2017). Another important challenge concerns strategy and economics because companies need to consider factors such as the cost of investments, uncertainties related to benefits, reliance on vendors, and readiness which may impede more widespread adoption (Cappelli et al., 2018). On the other hand, one may also speak about the presence of challenges associated with the technology itself because the use of unreliable data, incompatibility with legacy systems, cyber risks, and drifts might negatively affect the reliability of AI in later stages even if initial pilots are successful. In addition, it should be mentioned that human/cultural barriers are crucial because employees may reject the use of AI technologies as potentially interfering with their autonomy, increasing monitoring activities, or diminishing the relational aspects of work especially under conditions of distrust toward management (Vrontis et al., 2022).

All in all, these observations indicate a mixed governance approach where AI is created and deployed within a framework for human-centric decision-making. This implies transparency and explainability in relation to the importance of the decision, auditability via bias testing and ongoing model evaluation, human supervision in critical decisions, and boundaries in terms of intended use and consent, especially when there is an inference about

performance using communication records or sensor-derived data. On that note, the hypothesis is consistent with the automation augmentation paradox, according to which the greatest value arises when AI facilitates better human judgment and does not try to replicate it (Raisch & Krakowski, 2021).

Conclusions

In this dissertation, it has been illustrated that the impact of artificial intelligence on HRM is evident throughout the entire cycle of employees' engagement, ranging from recruitment and talent sourcing, through performance evaluation, safety, and well-being, to organizational design via continuous data-driven reasoning and scaling personalization. The greatest potential organizational value is derived in scenarios where AI technology is used to address high-volume and pattern-based tasks, such as candidate screening, outlier identification, and workflow analysis, and whose outputs are integrated into development activities, namely coaching suggestions, tailored learning opportunities, and timely risk mitigation actions. Nevertheless, the research findings suggest that HR results depend on a variety of factors that transcend mere algorithmic accuracy, as legitimacy, perceived fairness, and institutional trust exert equal weight. If AI technologies fail to offer adequate levels of transparency, governance, and awareness of the human factor, resistance and reputational risks emerge, despite any efficiency gains.

This means that the most effective strategic course would be viewing AI as socio-technical shift that needs organizational commitment, capacity building among employees, and ethical as well as regulatory alignment. Human resource management departments should develop capabilities in terms of data management, model literacy, and change management; however, while doing so, it should also ensure that the social and ethical aspects of managing human beings are never taken away from its scope. If used within a transparent, auditable, and human centered framework, AI can be very powerful in helping to transform the role of HRM from being administrative to strategic by fostering organizational flexibility, well-being of employees, and sustainable performance.

However, the effective integration of AI into HR strategies will take much more than simply purchasing software or automating processes. It demands an organized approach that ensures compatibility between AI use and business needs, workforce needs, and ethical considerations. The first key component of such a strategy is governance. Companies have to determine clearly who has the right to make what decisions in AI based HR processes and which of those decisions can be automated or left solely within the human realm. It means

determining model accountability and establishing dispute resolution processes and regular audits.

The next key issue relates to the quality of data. The success of any AI application depends directly on the integrity of HR data used by the system. This requires organizations to make investments in linking their HR data across all of their HRIS systems, recruitment, performance management systems, and learning management systems. Data quality and consistency will lay the foundation for any insightful AI application.

The third strategic dimension relates to human centred design and change management. Employees and line managers need a good understanding of the application of AI, the benefits of AI, the limitations of AI, and reasons for using AI within an organization. Transparency and education, together with pilot implementations, will aid in building adoption. At the same time, HR must ensure that they maintain their human touch in processes like conflict resolution, wellbeing conversations, and promotion processes.

The fourth strategic direction is fairness by design. It includes embedding systematic bias audits, ensuring the equitable operation of AI systems on various groups of employees, and creating channels for employees' feedback and requests for corrections. Human-in-the-loop decision-making model could be a good solution: the AI system would make recommendations while the final decision is made by an experienced HR specialist.

Finally, another important strategic priority is HR capability development. HR practitioners require knowledge in analytical interpretation, ethical risk assessment, and digital systems management. In this case, through upskilling HR specialists and cross-functional cooperation between IT, legal, and compliance departments, organizations will be able to ensure consistent and coherent AI adoption.

In the future, AI technologies will push HR towards continuous management rather than episodic decision making. Real-time workforce intelligence is one of the most prominent trends. It implies constant monitoring of performance cues, engagement metrics, and wellbeing risks using digital work platforms. It will contribute to the transition from traditional annual appraisal systems to constant evaluation and coaching based on AI insights.

Another relevant direction will include AI facilitated talent ecosystem, whereby recruitment, onboarding, training, and career advancement are brought together in a common

predictive environment. There will be a greater use of AI for spotting skill gaps, predicting future demands on skills, and proposing personalized development strategies. Another area will involve enhancing internal labor markets, through which people get dynamically assigned to projects and positions, rather than remaining constrained by fixed jobs.

Yet another trend will relate to the increasing individualization of the employee experience through the deployment of AI systems. HR systems will become increasingly customized to individual needs when it comes to communications, information about benefits, learning resources, and services. Moreover, AI tools like chatbots and virtual assistants will provide instant HR help and at the same time offer insights on common concerns and patterns of employees. The other aspect that is going to influence the future role of AI in HR will be increased focus on ethical and legal issues associated with AI. In the future, organizations will need to be transparent about their decision-making and data collection processes related to AI and ensure fair treatment of all employees.

Finally, the field of HR is bound to evolve as well. With the automation of repetitive tasks, HR will focus increasingly on workforce planning, organizational design, supporting leaders, and managing change. Given such an environment, the benefits of AI will be most visible when it improves human judgment, facilitates development-focused HR practices, and promotes healthier workplaces, rather than replacing humans in decision-making processes.

Below the research questions are answered:

Research Question 1: The key applications of Artificial Intelligence in the tasks of attraction, selection, performance appraisal, and ongoing employee assessment focus on functions where there is an abundance of workforce data which can be analyzed systematically. In the attraction and recruitment process, Artificial Intelligence is predominantly employed in the automatic screening of resumes, resume filtering, the match between resumes and job specifications through algorithms, chatbot conversation with candidates, and assessment of their fit. In selection processes, AI is applied to aid in decision-making through analyzing both structured and unstructured candidate data, recognizing patterns in candidates who made it, and standardizing initial screening processes. In the case of performance evaluation and ongoing employee assessment, AI helps to monitor work-related data continuously, find productivity and employee engagement patterns, make

adaptive goal setting, facilitate continuous feedback, and recognize the warning signs of poor performance, burnout, and disengagement. All in all, the review demonstrates that the applications of AI in HR are most effective in areas where there are repeating decisions, measurable metrics, and rapid data-based assessment needed.

Research Question 2: According to the literature from around the world, there are three major categories of benefits brought about by Artificial Intelligence in Human Resources Management. They include increased efficiency, quality improvements in decision making, and improvement of the strategic value of Human Resources management. With respect to efficiency, AI is useful due to the fact that it minimizes time wastage and administrative efforts required during processes like recruitment, on boarding, monitoring, and performance. With respect to decision making quality, AI is considered an important tool in that it enhances more systematic analysis of data relating to employees and applicants. AI also enhances more consistent evaluation, as well as early detection of trends that cannot be detected simply by managers' observations. From a strategic point of view, Artificial Intelligence helps in elevating the value of Human Resources because it changes the function into an analytic and proactive component of organizational planning. By using predictive analytics, AI plays a key role in workforce planning, talent management, allocation of roles, mobility within organizations, and forecasting future skill requirements.

Research Question 3: Some of the main challenges and risks of employing Artificial Intelligence within the domain of Human Resource Management are presented by the academic sources reviewed in the course of research. In this context, the problem of bias should be highlighted as one of the key issues because AI technologies can perpetuate social inequalities if they are trained on insufficient, biased, or historically imbalanced data. Furthermore, transparency is another serious problem associated with AI due to the fact that many algorithms are highly complex. As a result, neither employees nor their superiors have an opportunity to understand why a certain decision has been made. At the same time, privacy issues become extremely urgent in relation to continuous monitoring in which such factors as digital exhaust, data from various platforms and sensors, or even physiological parameters are employed for evaluating employees' performance or engagement level. Finally, it can be argued that one of the critical risks is employee acceptance because employees are much less likely to accept AI technology for assessing their work.

Research Question 4: According to the literature, responsible and successful integration of Artificial Intelligence into HR strategies is a complex process depending upon both organizational and administrative factors. First of all, there should be strong data governance in place with clear policies concerning the issues of data quality, data access, data security, transparency, and acceptable use. Second, it is vital to have commitment and strategic alignment in terms of AI-related efforts to ensure that the technology is not introduced on an experimental basis and integrated with organizational priorities. Third, sufficient digital infrastructure and system integration are needed to enable successful application of AI solutions. Fourth, it is crucial for managers to have the required capability and skills, especially in terms of interpreting results obtained from algorithms, auditing them, and using data-based insights along with human reasoning. Finally, ethical oversight and human oversight of the AI-based decisions made should also be mentioned as critical conditions due to high importance attached by the literature to issues of ethics and human involvement in the process.

Thus, the conducted literature review revealed that Artificial Intelligence technology significantly impacts the whole lifecycle of HR processes, such as recruiting and selecting candidates, managing employees' performance, developing workers' competencies, ensuring workplace safety, improving the well-being of staff members, and optimizing organizational design. It was concluded that the most common areas of application of AI technologies in Human Resources Management include resume screening, algorithmic matching of candidates, communications between applicants and the company via chatbots, predictions of employee performance, and workforce planning and retention systems. In this regard, it can be stated that the reviewed literature sources are unified in their opinion about the impact of AI on increasing the efficiency of HRM processes and the transformation of the status of the HR department from the purely administrative one into the strategically oriented one.

In the same breath, it must be noted that the insights reveal that the benefits of using AI in HRM do not come automatically nor as a result of mere technology use alone. The research literature clearly demonstrates that for beneficial results to be achieved, certain organizational factors need to converge, including digital maturity, data quality, management readiness, employee trust, and governance. It seems that the potential of AI lies in its integration into a mixed approach to decision-making whereby computerized analysis

enhances the work done by professionals rather than substituting it. In other words, the research literature does not depict AI as a full-fledged replacement of human knowledge and skills but a socio-technical tool contingent on design and implementation approaches.

One of the key findings from the analysis is that there are indeed many opportunities that arise as well as risks associated with the use of artificial intelligence in HR management. First, the potential opportunities of using artificial intelligence in HR management include increased efficiency, personalization of HR practices, early detection of performance and retention problems, and decision consistency. Second, the most frequently mentioned risks associated with the use of artificial intelligence include algorithmic bias, lack of clarity about decision making systems, risks related to privacy, increasing monitoring of employees, and decreased perceptions of procedural justice. These risks are of particular relevance for HRM because decisions made within HR management influence such aspects as access to employment, promotions, employee voice, and even dignity of workers at work.

The review has identified other research gaps worth mentioning. The bulk of literature available still tends to focus more on the short-term effects of AI in HRM, including shorter recruitment processes, fewer administrative tasks, and increased screening capabilities. Fewer studies have investigated the impact of AI in HRM on organizational culture, job commitment, inclusivity, trust, and employment relations over a long period of time. Furthermore, most studies available tend to be cross-sectional, conceptual, or exploratory in nature. Therefore, drawing causal links between AI in HRM and its results becomes challenging. Another major research gap relates to the lack of contextual diversity. Most evidence on the subject of AI in HRM has been gathered through organizations based in developed countries.

Future work in the area must, therefore, take into account these factors. Research that takes a longitudinal approach in the study of the effect of AI on employees' attitudes, perceptions of fairness, and organizational consequences will be particularly fruitful. Comparative work among industries, countries, and organizations of different sizes will add value to the insights that can be gained from studying the role of institutional frameworks in the process of adopting and implementing AI in HR management. Also, future work on the topic will do well to concentrate on the interrelationship between the performance of

algorithms and their legitimacy, specifically with regard to issues such as explainability and governance. Finally, the development of hybrid approaches to human resource management that involve the use of AI in a manner that allows for human oversight of decisions made through the application of artificial intelligence will prove to be a significant contribution to the field.

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