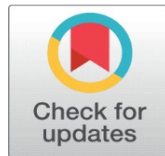
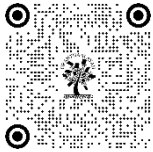


ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE: THE KEY TO SUCCESSFUL RECRUITING AND PERFORMANCE MANAGEMENT

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ABSTRACT

This study explores the application of artificial intelligence (AI) in the domains of recruitment and performance management within the field of Human Resource Management (HRM). It investigates how AI technologies such as chatbots, AI recruiters, and HR analytics are utilized to enhance efficiency, effectiveness, and personalization in these HR functions. This review paper explores multifaceted applications of Artificial Intelligence (AI) in Human resource Analytics, specifically focusing on recruitment and performance management. AI has revolutionized HR practices by enabling organizations to harness vast amounts of data to make informed decisions. In recruitment, AI-driven tools facilitate candidate sourcing, screening, and matching, leading to more efficient hiring processes and improved candidate experiences. Additionally, AI-powered analytics enhance performance management by providing actionable insights into employee productivity, engagement, and skill development. Drawing upon existing literature, this paper provides an in-depth analysis on how AI technologies are reshaping traditional HR practices, enhancing efficiency, and driving strategic decision-making. Overall, the application of AI in recruitment and performance management represents a paradigm shift in HRM practices, enabling organizations to harness the power of data and automation for more efficient, equitable, and strategic HR practices in the digital age.

Keywords: Human Resource Management, Artificial Intelligence (AI), Performance Management, Recruitment

1. INTRODUCTION

HR analytics creates relevant action plans to maximise your talent strategy by turning unrelated data points into meaningful pieces of information. People analytics, which helps human resource managers to anticipate workforce challenges and leverage talent, will be even more efficient and predictive with AI. In human resources department, the use of artificial intelligence in recruitment, training and employee development and performance monitoring is becoming common. The integration of information technology and human resource management (HRM) has improved efficiency, affected service delivery, standardization, managerial

empowerment and changed HR functions (Pary and Tyson, 2011); (Bondarouk and Brewster, 2011). Artificial intelligence (AI) and related technologies be it machine learning, Robotic Process Automation (RPA) or natural language processing (NLP) have influenced and revolutionized business models (Heric, 2018). Artificial Intelligence has permeated every aspect of business today, and Human resource (HR) is no exception. The HR function has evolved over the years. Traditionally, HR departments have handled administrative tasks such as payroll, benefit administration and compliance. In the 90's HR became a more strategic function with a focus on talent management and development. In 2000, various human resources software systems (HRIS) were launched, which made it possible to streamline processes and automate routine tasks. By 2010, the world began to realize the need for employee experience and engagement, leading to the use of performance management system. Human Resource Analytics transform unrelated data points into insightful action plans that maximize your talent strategy. With AI, people analytics will become even more efficient and predictive, helping HR managers anticipate workforce challenges and leverage talent. The use of AI is on the rise in the HR teams for recruitment, boarding, employee development, and performance monitoring. This is not new: years before the pandemic, an IBM study found that Half of Chief Human Resource Officers are already understood the potential of technology for critical HR tasks. But over the past few years, HR's ability to use advanced, reliable AI and automation tool has increased. Adoption is particularly prevalent among large enterprises, with 42% of companies with at least 5000 employees reporting that they used AI for HR Functions in early 2022. AI can help usher in a new era of HR where data analytics, machine learning and automation can work together to save people time and support their higher quality results. As AI technology moves beyond automation, companies can consider how AI tools can improve HR for employees and jobseekers. It is not just about saving time; it also means delivering information, insights, and recommendations in near real time. And this is the beginning of AI in HR. An international survey by the IBM Institute for Business Value (IBV) has found that 40% of executives believe that their workforce will require retraining in the next three years due to the rise of AI and automation. This change is seen as an expansion of job opportunities. In fact, 87% of respondents believe that employee roles are likely to be augmented than replaced by generative AI, with the impact depending on the job duties. This change directly impacts HR departments, as companies apply for roles with more responsibilities while staff seek out new jobs when functions in their departments are changing. Adopting AI in HR technology can help HR teams in this new environment. Emerging AI tools are rapidly increasing efficiency and becoming tools for innovation – freeing up team members to think more strategically about HR while providing human touch. X. Huang, F. Yang, J. Zheng et al. (2023) enriches the strategic HRM, which offers a conceptual framework for personalized HRMS and discusses its theoretical and managerial implications.

2. REVIEW OF LITERATURE

It is not a new concept to have information and technology (IT) and HR working together. For generations, IT has been integrated into human resource management in the form of human resource management information system. (HRIS) enterprise resource planning (ERP), Internet of Things (IOT) and HR analytics, data mining (S Strohmeier, F Piazza Bondarouk, Harms and Lepak 2015; Stone and Dulebohn, 2013) and most recently artificial intelligence (Meister, 2017). Emma Parry (2011), discusses how electronic human resource management (e- HRM) can

enhance the value of HR functions from a resource- based perspective. Research has shown that e- HRM can improve HR effectiveness, service delivery, and strategic alignment business goals. A study across 12 countries found that e- HRM can help HR become more strategic, but did not result in cost savings by reducing HR staff. Organizations can use e- HRM to shift HR professional towards more strategic and value- added tasks. Artificial Intelligence has been utilized in certain aspects of human resource management, such as facilitating the use of HR analytics (Margherita,2022), due to its efficiency and effectiveness in data mining or predictive tasks (Ting and Lin, 2011). This is important for improving HR analysis. A recent survey showed 22 % of companies have implemented HR analytics and 11 % have developed and use HR analytics themselves (LinkedIn, 2018). According to Qamar and Samad (2021), several studies have demonstrated a positive correlation between the adoption of HR technology and enhanced organizational outcomes. According to Allied Market Research (Pramod, Kashinath, and Vineeth, 2021) the HR analytics market is expected to grow from \$2.4 billion in 2021 and \$11 by 2031reaching a high combined value. Annual growth rate for the period is 16.6 %. The spread of HR and analytics technology around the world allows more and more HR professionals to make decisions based on data and evidence, instead of relying on reliable intuitions (Qamar and Samad,2021). HR analysis helps to identify the most effective and efficient solutions for different employees (Fernandez and Gallardo, 2021). With the help of artificial intelligence tools and software, HR professionals can reduce bias and thus improve decision making. Their informed decisions are based on analysis of large amount of data, not on social finding. The inclusion and equality of all employees in the workplace are ensured by the companies. The utilization of artificial intelligence software facilitates the development of intelligence system. Recruiters to assess the entire candidate pool, instead of applying “biased processes to narrow the process from the start” due to time constraint. Thus, it is easy to ensure that no candidate is unheeded due to the choice or unfairness of the recruiters (Consultport,2023). Artificial Intelligence facilitates efficient performance of routine tasks through automation. However, the adoption of AI technology in recruitment and selection is also full of risks that create fear and mistrust among recruiters. Effective implementation of AI can improve recruitment strategies. However, there is cynicism stemming from fear of losing jobs to automation, although participants felt that their jobs would be saved because recruiters should always be human (Olajide Ore and Martin Sposato, 2021).

3. OBJECTIVE OF THE STUDY

- 1) To analyse the application of artificial intelligence (AI) in the areas of recruitment and performance management within the field of Human Resource Management (HRM).
- 2) Investigate how AI technologies such as chatbots, AI recruiters, and HR analytics are utilized in the recruitment process to enhance efficiency, effectiveness, and personalization.

3.1. USING AI FOR PERFORMANCE MANAGEMENT

A Performance Management system is a process – oriented approach that measures employee’s performance both quantitatively and qualitatively. If done effectively, the organization can also detect gaps in the skills and competencies of individuals or employees thus provide training and coaching for overall development. A traditional annual performance management exercise was created

to rate the performance and attitude of employees with 5 or 7 points, determined by various parameters set by the immediate manager and confirmed by both senior functional manager as well as the HR department. One limitation of the process is that the direct supervisor records an uncertain average grade that may not reflect actual performance. Appraisal interviews also create discomfort for both the employee and the manager when some difficult discussion about an employee's weakness arises. Also, since the process is annual, the key selection would be the freshness of the employee's work activity in the last few months. As digital tools became more prevalent in the early 2000's many paper- based practices were supplanted by online platforms that offer flexibility, speed up processing, and some degree avoid face- to- face communication. However, annual process and recent impact continued which caused certain distortions in the performance management system. Masson. S (2020) discusses how advancements in the data science and artificial intelligence have addressed issues in traditional performance management systems. An AI- based system offers a framework approach, making it simple to evaluate employee effort and performance through organized data. Additionally, natural language processing and sentiment analysis help to comprehend employee interactions and reactions to relevant efforts. Algorithm based Artificial Intelligence (AI) constantly monitor the employee performance in real time eliminating the annual evaluation ritual. Algorithms also track digital footprint and interactions of employees through various digital tools (e.g. mail, calendar, slack etc) and integrate relevant data dispersed across these applications to analyse performance.

3.2. APPLICATION OF ARTIFICIAL INTELLIGENCE IN RECRUITMENT AND PERFORMANCE MANAGEMENT FUNCTIONS OF HRM

The recruitment process is a time consuming and resource intensive endeavour that frequently results in difficulties. To find the right talent for a company, recruiters must perform multiple tasks that involve both recruiting and interviewing. With the advent of artificial intelligence, many of these responsibilities can be automated to save time and resources for contract managers. Using artificial Intelligence to automate and simplify the recruitment process is what AI for recruitment refers to. Artificial intelligence enables recruiters to use data to make better decisions. With the help of AI, recruitment can be completed by screening potential candidates, reviewing resumes and job applications, conducting pre-employment assessments, as well as predicting candidate success and cultural fit. By utilizing AI, recruiters can save time and efforts while optimizing candidate matches improving the quality of candidates, reducing bias, and making informed decisions. In recruiting, AI has the potential to revolutionize the recruiting landscape by increasing efficiency, accuracy, and overall effectiveness in finding and attracting the right talent to the organization.

3.3. WHY AI IMPORTANT IN RECRUITMENT?

By utilizing artificial intelligence, recruitment teams can streamline their operations and prioritize the bigger picture. They have more time to be strategic and focus on bigger goals.

The importance of understanding AI for recruitment is highlighted by four points

- 1) **Maximise employing efficacy:** Recruiting is usually a long process that often involves a lot of manual work. The average recruiter spends up to 30 hours a week on administrative tasks such as sourcing candidates, screening resumes, scheduling interviews, and coordinating with other members of the recruiting team. This can lead to a significant decrease in productivity.
- 2) **Dazed employment bias:** The hiring process can be inadvertently influenced by human biases that are not consistent with your company's values and priorities. Nearly half of HR practitioners concede that they have been unconscious in their selection practices. Not only does this lead to poor labour relations, it can also limit organizations that are trying to create a diverse workforce. If used correctly, AI can combat these biases and remove subjectivity from the hiring process. Rather than depending on subjective factors like, age, gender, and race to screen candidates, AI can objectively evaluate individuals based on their qualification and experience.
- 3) **Augment candidate experience:** Employers may find it difficult to contact potential employers and employees, which can lead to negative outcomes. In fact, research shows that nearly 60 % of applicants turn down a job offer because of a bad hiring experience. Not only does this deter potential candidates from applying in the future, it can also harm your employer. AI-powered recruiting tools can help alleviate this problem by simplifying the entire application process and making it more efficient and enjoyable for the candidates. By utilizing artificial intelligence to enhance candidate experience and personality, it is possible to create a more engaging and personal hiring process.
- 4) **Progress the value of hires:** the productivity and bottom line of a company can be significantly impacted by reducing it' salary, as employees are crucial to the success of the organization. This is where artificial intelligence can come in handy. When used in conjunction with traditional methods, AI-powered recruiting solutions can evaluate job applicants based on data and analytics and provide insights that help managers make informed decisions.

3.4. APPLICATION OF AI IN RECRUITMENT AND PERFORMANCE MANAGEMENT

Figure 1

Figure 1 Example of AI Application in the Areas of Recruitment and Performance Management

Functional Area	Personalized HRM	AI Application
Recruitment	Process of Recruitment: Individual messages and communication personalized sourcing and screening	Uses of Chatbot and AI in HR Analytics: Engage in personal communication Develop and use an AI recruiter Create and deliver personalized, targeted recruitment and selection campaigns Use AI to schedule interviews and make recommendations with human recruiters.
Performance Management	Process of Reviewing the Performance: Individual messages and communication	Uses of Chatbot and AI in HR Analytics: Track and analyse individual performance Provide timely personalized feed back Optout a separate talent management process

Personal rewards	Conduct reviews
Personalized promotion	

The above figure explains the application of AI in the areas of Recruitment and Performance Management.

Recruitment

Individual messages and communication: AI- powered chatbots can engage in personalized communication with candidates, answering queries and providing information about job position and company culture.

Personalized sourcing and screening: AI algorithms can analyse candidate profiles and resumes to match them with job requirement and company culture, streamlining the screening process.

Create and deliver personalized, targeted recruitment campaigns: AI can analyse data to tailor recruitment campaigns to specific target audiences, improving the effectiveness of outreach efforts.

Use AI to schedule interviews and make recommendations: AI can assist in scheduling interviews based on candidate and interviewer availability, as well as make recommendations to human recruiters regarding candidate suitability for roles.

Performance Management

Individual messages and communication: AI- powered chatbots can track and analyse individual performance, providing real- time feedback and suggestions for improvement.

Personal rewards: AI algorithms can analyse performance data to identify top performers and recommend personalised rewards or incentives based on achievements.

Personalized promotion: AI can assist in identifying high- potential employees for promotion based on performance and career goals, streamlining talent management process.

Conduct reviews: AI- powered performance management system can automate the review process, collecting feedback, analysing performance data, and generating comprehensive reports for managers and employees.

Overall, the application of AI in recruitment and performance management enables personalised HRM through improved communication, streamline processes, data -driven decision-making and enhanced efficiency in talent management.

4. CONCLUSION

The integration of artificial Intelligence (AI) into human resource management (HRM) processes, particularly in recruitment and management, marks a significant evolution in HR practices. This integration has been facilitated by advancements in technology, including machine learning, natural language processing, and robotics process automation, which have revolutionized traditional HR functions. In the realm of recruitment, AI- driven tools such as chatbots, AI- recruiters, and HR analytics have transformed the way organizations identify, attract, and select talent. By automating routine tasks such as resume screening, candidate sourcing, and

interview scheduling, AI streamlines the recruitment process, saving time and resources while improving the quality of candidate matches and reducing bias. Moreover, AI empowers HR professionals to personalise recruitment campaigns, engage in targeted communication with candidates, and make data-driven decisions that enhance overall recruitment effectiveness. Despite concerns about job displacement and bias, the adoption of AI in recruitment holds immense potential for organizations to optimize their talent acquisition strategies and stay competitive in the evolving job market. Similarly in performance management, AI offers innovative solutions to address the limitations of traditional appraisal systems. By leveraging data analytics and real-time monitoring capabilities, AI enables organizations to track individual performance, provide timely feedback, and identify areas for improvement. This shift from annual evaluations to continuous feedback loops enhances employee engagement, fosters skill development, and aligns individual goals with organizational objectives.

In conclusion, the application of AI in recruitment and performance management represents a paradigm shift in HRM practices, enabling organizations to harness the power of data and automation to optimize talent acquisition, development, and retention strategies. While challenges such as job displacement and ethical consideration remain, the benefit of AI adoption in HR are undeniable, paving the way for more efficient, equitable, and strategic HR practices in the digital age.

Future of the Study

In the future, research in the field of AI integration in HRM should focus on several key areas. Firstly, understanding ethical implication of AI in recruitment and performance management is crucial, including addressing biases in algorithms and ensuring privacy and fairness in decision-making. Additionally, exploring the impact of AI on job design within HR departments, the employee experience, and long-term organizational outcomes such as productivity and innovation is essential. Furthermore, continuous learning and development for HR professionals to effectively navigate AI-driven landscapes, cross-cultural perspective on AI adoption, and integration with other HR technologies are areas that warrant further investigation. By addressing these aspects, researchers can provide valuable insights to guide organizations in maximizing the benefit of AI while mitigating potential risks.

CONFLICT OF INTERESTS

None.

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REFERENCES

- Akansha Mer. (2023). *Artificial Intelligence in Human Resource Management: Recent Trends and Research Agenda*. ISBN: 978-1-80455-262-9, eISBN: 978-1-80455-261-2.
- Bankins, S., & Formosa, P. (2020). When AI meets PC: Exploring the implications of workplace social robots and a human-robot psychological contract. *European Journal of Work and Organizational Psychology*, 29(2), 215–229.

- Benbya, H., Davenport, T. H., & Pachidi, S. (2021). Artificial intelligence in organizations: Current state and future opportunities.
- Bondarouk, T., Harms, R., & Lepak, D. (2015). Does e-HRM lead to better HRM service? *The International Journal of Human Resource Management*, 1-31.
- Charlwood, A., & Guenole, N. (2022). Can HR adapt to the paradoxes of artificial intelligence. *Human Resource Management Journal*, 20, 545-566.
- Consultport. (2023). Talent Intelligence: Harnessing the Power of AI in HR Management.
- Dharmatti, M. (2020, October 2). Role of AI in Performance Management. Medium. <https://medium.com/@manjunath.dharmatti/role-of-ai-in-performance-management-807e4fee5c77>
- Dr Tephilliah. (2019). The Role of Artificial Intelligence in Human Resource Management.
- Fernandez, V., & Gallardo-Gallardo, E. (2021). Tackling the HR digitalization challenge: Key factors and barriers to HR analytics adoption. *Competitiveness Review: An International Business Journal*, 31(1), 162-187.
- Heric, M. (2018). HR's New Digital Mandate.
- Huang, X., Yang, F., Zheng, J., Feng, C., & Zhang, L. (2023). Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*, 598-610.
- Jhansi, Ch. (2022). Artificial Intelligence in Human Resource Management. In *National Conference on Latest Innovations and Future Trends in Management* ISSN: 2349-6002.
- C.-C. (2021). Analysis on the strategy of improving management consulting business performance: Evidence on a management consulting company established by an accounting firm. *Asia Pacific Management Review*, 26(3), 137-148.
- Margherita, A. (2022). Human resources analytics: A systematization of research topics and directions for future research. *Human Resource Management Review*, 32(2).
- Nagele-Piazza, L. (2018, May 28). How Can Artificial Intelligence Work for HR?
- Ore, O., & Sposato, M. (2021). Opportunities and risks of artificial intelligence in recruitment and selection. *The International Journal of Organizational Analysis*, 30(6), 1771-1782.
- Palos-Sánchez, P. R., Baena-Luna, P., Badicu, A., & Infante-Moro, J. C. (2022). Artificial Intelligence and Human Resources Management: A Bibliometric Analysis.
- Parry, E., & Tyson, S. (2013). Managing People in a Contemporary Context. <https://doi.org/10.4324/9781315885872>
- Parry, E. (2011). An examination of e-HRM to increase the value of the HR function. <https://doi.org/10.1080/09585192.2011.556791>
- Pramod, B., Kashinath, G., & Vineet, K. (2021). HR analytics market.
- Qamar, Y., & Samad, T. (2021). Human resource analytics: A review and bibliometric analysis. *Personnel Review*, 51(1), 251-283.
- Ranjitha, S., & Usha, K. A. (2021). Study on application of Artificial Intelligence and its challenges in HR. *Palarch's Journal of Archaeology of Egypt/Egyptology*, 18(9).
- Sharma, N., & Singh, S. (2022). Pattern of relationship between tourism and economic growth. *JOHAR – Journal of Hospitality Application & Research*, 17(1), 01-18.
- Strohmeier, S., & Piazza, F. (2015). Artificial Intelligence techniques in human resource management - a conceptual exploration.
- Sridharan, H. (2023). How AI in People Analytics Is Transforming HR.