Role of Artificial Intelligence in Modern Hr Practices: A Theoretical Perspective

Dr. M. Shuaib Ahmed[1*], Dr. Shaply Abdul Kareem[2], D. Yuvaraj[3], Mohamed Isthiyaq[4]

[1]School of Management, C. Abdul Hakeem College of Engineering & Technology, India
[2]School of Commerce & Economics, Presidency University, Bangalore
[3]Department of Business Administration, Adhiparasakthi College of Engineering, India
[4]Department of Business Administration Mazharul Uloom College (Autonomous), India
*mshuaibahmedmba@gmail.com

Abstract

Artificial Intelligence (AI) is driving transformative change across diverse sectors, with significant implications for the field of human resources (HR). A notable example of AI's advancement is Sophia, the humanoid robot who addressed the United Nations on sustainable development, symbolizing the increasing integration of AI into global discourse. In the HR domain, AI is emerging as a powerful tool that operates across multiple levels from basic recruitment systems to advanced AI-powered platforms enhancing the accuracy, efficiency, and speed of talent acquisition processes. These tools, functioning autonomously or in collaboration with human professionals, are enabling HR teams to make data-driven decisions and gain predictive insights into a candidate's potential success within an organization. This study aims to explore the integration of AI in HR practices, particularly in recruitment and talent management, while assessing the associated benefits and challenges. The research is based on a qualitative methodology that includes the review of secondary sources such as academic articles, industry case studies, and expert opinions. The findings reveal that AI significantly improves hiring efficiency by automating routine tasks like resume screening and interview scheduling, while also enabling more accurate candidate matching and promoting unbiased recruitment when algorithms are properly designed. However, the study also highlights on-going concerns regarding data privacy, algorithmic transparency, and the potential displacement of HR roles. The implications suggest that organizations must invest in digital literacy and ethical AI frameworks to maximize the benefits while mitigating risks. In conclusion, AI represents a transformative shift in HR, not just in operational terms, but in redefining the strategic role of HR professionals. When adopted responsibly, AI can support more inclusive, efficient, and forward-thinking human resource practices, paving the way for a more adaptive and data-informed future of work.

Keywords: Artificial Intelligence, Human Resources, Sustainable development, HR practices, Recruitment.

1. Introduction

Artificial intelligence (AI) involves the emulation of human intelligence within machines, enabling them to mimic human actions and behaviours. Human resource management (HRM) is the practice of overseeing personnel, workplace culture, and maintaining a conducive work environment. The HR department primarily focuses on recruitment, hiring, training, and

employee development initiatives. The integration of artificial intelligence in HR processes offers numerous advantages, streamlining operations, reducing costs, and saving time and resources. In the contemporary landscape, the application of artificial intelligence has gained traction across diverse sectors, including finance (banking), telecommunications, education, and corporations. Corporations, in particular, are increasingly adopting AI in their HR departments to enhance overall performance. By leveraging AI, HR tasks become more efficient, straightforward, and seamless. However, the implementation of AI is not without challenges. Integrating AI requires a well-prepared strategy, and its successful adoption demands a skilled workforce capable of handling its intricacies. Utilizing artificial intelligence in HR necessitates a proficient understanding of technology and its applications. Without adequate tech literacy, concerns such as data privacy and security may arise, potentially having adverse effects on the HR department and incurring additional costs. Therefore, to ensure the successful utilization of AI in HR practices, organizations must prioritize recruiting personnel equipped with the necessary skills and expertise. In summary, artificial intelligence's integration into human resource management brings forth efficiency and productivity benefits. However, it requires careful planning, a skilled workforce, and a comprehensive understanding of technology to reap its rewards while mitigating potential challenges.

2. Review of Literature

Scott W. O'Connor (2020): In his article "Artificial Intelligence in Human Resource Management, emphasized that artificial intelligence will maintain its constructive influence on the realm of human resources management in the forthcoming years. Furthermore, HR practitioners need to proactively acknowledge the potential challenges that lie ahead. To equip themselves for the future landscape of human resource management, professionals must proactively engage in understanding current trends within the field. Simultaneously, they should establish a robust groundwork of HR expertise, which can serve as a basis for their continuous growth and adaptation as the profession continues to evolve.

Prasanna Vatsa and Kusuma Gullamjji (2019): In the paper titled "To Study the Impact of Artificial Intelligence on Human Resource Management", it is clearly stated that the integration of HR practices with AI based applicants definitely have a stronger impact in enhancing the organizational performance. The study depicts that AI is everywhere in HR, be in recruitment, training, on boarding, performance analysis, retention and so on, but many of the organizations are still lagging in integrating AI to its HR – practices because of its cost associated in integration.

Jennifer Johansson and Senja Herranen (2019): In the paper titled "The Application of Artificial Intelligence in Human Resource Management", it is mentioned that the area of AI in recruitment is new and there are not many organizations that has implemented AI in all parts of the recruitment process. It also mentions that the main benefits of AI are seen as the speeded quality and elimination of routine tasks, while major challenge is seen as the companies' overall readiness towards the new technologies. Albert Christopher (2019): In his article names as "Use of Artificial Intelligence in Human Resource Management, the author says that AI – based applications raise employee productivity. It has the ability to analyze, predict, diagnose and become more capable resource while focusing on employee need and outcomes. However, there are challenges like privacy, talent gap, maintenance,

integration capabilities or limited proven applications. AI systems must be managed carefully by finding reliable learning data sets, using the right implementation approach, seeking clarity, eliminating bias and considering unintentional consequences.

Barbara van pay (2018): In this article how AI is reinventing HR it was clearly stated that all the organizations mostly looking for AI solutions for their business and they are scared of letting a non-human entity handle the procedures of business. By using the AI in organization it can reduce the time consumed for filling and hiring the candidates who applied for the job, through screening multiple candidates, gathers data they rank the candidates by considering other information like experience ,skill set etc., to find right person. After finding the perfect fit for the role next main part is interviewing, now days AI interviewing software such as hike vue, mya are used mostly. AI technology takes care from sourcing to interview which drastically reduces the recruitment timeline and help to hire right candidates with ability to perform in specific roles and make placements much easier and at faster rate.

The importance of AI in HR management is multifaceted. AI can automate tasks such as resume screening, candidate sourcing, and initial interviews, saving time and resources for HR professionals (Chowdhury et al., 2023). It can personalize onboarding experiences, providing new hires with relevant information and resources tailored to their specific roles and needs. Additionally, AI can analyze employee data to identify performance trends, provide feedback, and identify areas for development. The research objectives of this study are to: 1. examine the current state of AI adoption in HR functions in Bangladesh; 2. identify the key challenges and opportunities associated with AI implementation in HR in Bangladesh; 3. evaluate the impact of AI on HR processes and outcomes in Bangladeshi organizations; 4. explore the ethical considerations and potential biases associated with AI in HR; and 5. provide recommendations for organizations and policymakers in Bangladesh to effectively leverage AI in HR.

To achieve these objectives, the research will address the following research questions: 1. What are the current applications of AI in HR functions in Bangladesh? 2. What are the key challenges and opportunities associated with AI adoption in HR in Bangladesh? 3. How does AI impact HR processes such as recruitment, onboarding, performance management, and talent management in Bangladesh? 4. What are the ethical considerations and potential biases associated with AI in HR in Bangladesh? 5. What are the recommendations for organizations and policymakers in Bangladesh to effectively leverage AI in HR?

3. The Role of Artificial Intelligence in Modern HR Practices

AI-driven tools are revolutionizing recruitment by automating candidate sourcing, screening, and assessment. For instance, companies like LinkedIn and HireVue use AI to analyze resumes and identify the best candidates based on job requirements. AI-powered chatbots, such as those used by IBM's Watson Recruitment, engage with candidates, answer their queries, and schedule interviews, saving time and effort for HR professionals.Moreover, AI reduces unconscious bias in hiring by basing assessment solely on objective criteria. For example, Unilever uses AI to test candidates through online games and video interviews. The system analyzes facial expressions, tone, and choice of words to predict whether a candidate would be suitable for a job, thus providing a just and inclusive process of hiring. This has ensured that diversity and efficiency have been realized in Unilever's hiring process.

Training and Development

AI enhances employee training by offering personalized learning experiences. Platforms like Coursera and Degreed utilize AI to recommend tailored courses based on individual career goals and skill gaps. IBM's AI tool, Watson, provides real-time feedback and suggests resources to employees during their training sessions, ensuring they gain relevant skills efficiently.

Moreover, AI-based virtual reality (VR) and augmented reality (AR) simulations are increasingly being used for experiential learning. For instance, Walmart uses VR scenarios to train employees in customer service and handling difficult situations. This experiential learning approach helps the employees feel confident and perform better.

Ethical, Legal, and Regulatory Framework for AI in Recruitment

Artificial intelligence is transforming recruitment by making it smoother and increasing data-driven decision-making. However, as organizations increase the adoption of AI in hiring, it is imperative to keep in mind the ethical, legal, and regulatory considerations so that the adoption of AI is fair and responsible.

Ethical Considerations

AI in recruitment must focus on being transparent, accountable, and fair. Transparency refers to making the role of AI in decision-making clear to the candidates and ensuring that algorithms are understandable. Explainable AI (XAI) frameworks are critical to dealing with the "black-box" problem, whereby decisions seem to be made without an insight into how or why they were reached. Human oversight is necessary in validating AI-driven outcomes, including mitigating risks from possible errors.

Legal Frameworks

Governments globally are formulating laws related to AI in recruitment activities. In Europe, the General Data Protection Regulation mandates data transparency and protects candidate privacy, and the California Consumer Privacy Act in the United States offers similar protections. The Equal Employment Opportunity guidelines are equally important to ensure fair hiring practices. For example, regulations like the EU AI Act focus on categorizing AI systems by their risk levels and hold individuals liable for high-risk applications, such as recruitment. These laws ensure AI adoption aligns with legal standards and fosters trust among stakeholders.

4. Opportunities

Efficiency and Automation: AI can automate repetitive and time-consuming HR tasks, such as resume screening, data entry, and administrative duties. This allows HR professionals to focus on strategic initiatives and more value-added activities.

Data-Driven Decision Making: AI can process vast amounts of HR data to provide insights and trends, enabling informed and data-driven decision-making for better talent management strategies.

Enhanced Recruitment: AI-powered tools can identify suitable candidates faster, reduce bias in the selection process, and enhance the quality of hires through improved matching of skills and job requirements.

Personalization: AI can offer personalized employee experiences, from tailored on boarding plans to individualized training and development recommendations.

Predictive Analytics: AI can forecast workforce trends, such as attrition rates and skill gaps, allowing HR to proactively address challenges and plan for the future.

Edited by: Dr. Sisir Kumar Rajbongshi | Dr. Kshirod Sarmah | Dr. Rajdeep Ghosh | Dharmeswar Tarang
Department of Computer Science, Pandit Deendayal Upadhyaya Adarsha Mahavidyalaya, Amjonga, Goalpara, Assam, India

Employee Engagement: AI can monitor employee sentiment and engagement, identifying potential issues early on and enabling interventions to improve job satisfaction and productivity.

Learning and Development: AI-powered platforms can recommend relevant training courses and materials based on employees' skills and career aspirations, fostering continuous learning.

HR Process Improvement: AI can optimize HR processes like performance appraisals, ensuring fairness, consistency, and transparency in evaluations.

Employee Assistance: AI-driven chat bots can provide instant answers to employee queries about policies, benefits, and procedures, enhancing user experience.

5. Challenges

Bias and Fairness: If not carefully designed and monitored, AI algorithms can perpetuate existing biases present in historical data, leading to unfair outcomes in areas like recruitment and promotions.

Data Privacy: The use of AI involves collecting and analysing sensitive employee data, raising concerns about data security and compliance with privacy regulations.

Employee Resistance: The introduction of AI tools can be met with resistance from employees who fear job displacement or mistrust AI-based decisions.

Skills Gap: The implementation of AI requires HR professionals to acquire new technical skills and a deep understanding of AI's limitations and potentials.

Loss of Human Touch: While AI can automate many tasks, it might compromise the personalized and empathetic interactions that HR professionals provide.

Transparency and Accountability: AI decisions can sometimes lack transparency, making it challenging to understand how decisions are made and potentially raising ethical concerns.

Integration Complexity: Integrating AI into existing HR systems and processes can be complex and require investments in technology and training.

Change Management: Implementing AI-driven changes in HR requires effective change management strategies to ensure smooth adoption and minimal disruption.

6. Findings and Discussions

The research findings are based on interviews conducted with HR professionals, AI experts, and policymakers in Bangladesh, as well as case studies of organizations that have implemented AI in their HR functions. The key findings are summarized below:

Limited AI adoption: While there is growing interest in AI in Bangladesh, its adoption in HR is still limited. Many organizations are exploring AI applications, but few have fully implemented AI-powered solutions.

Recruitment and selection: AI is being used primarily for resume screening and candidate sourcing. However, there is a growing trend towards using AI for initial interviews and assessments.

Performance management: AI is being used to analyze employee data and identify performance trends, but its use for providing feedback and coaching is still limited.

Talent management: AI is being explored for identifying high-potential employees and creating personalized development plans.

Challenges and opportunities: The key challenges to AI adoption in HR include lack of AI expertise, data privacy concerns, resistance to change, and ethical considerations. However,

there are also significant opportunities for improved efficiency, cost-effectiveness, and employee experience.

Ethical concerns: Privacy concerns, bias and discrimination, and job displacement are major ethical considerations associated with AI in HR.

The findings from this research suggest that while AI offers significant potential for enhancing HR practices in Bangladesh, its adoption is still in its early stages. The limited adoption can be attributed to factors such as lack of AI expertise, data privacy concerns, and resistance to change. The use of AI in HR is primarily focused on recruitment and selection, with limited applications in performance management and talent management. This indicates a need for organizations to explore the full potential of AI in these areas (Griffin et al., 2009). Ethical considerations are a major concern in the use of AI in HR. Organizations must address issues such as data privacy, bias, and job displacement to ensure that AI is used ethically and responsibly. The findings from this research are consistent with existing literature on AI in HR. Studies have shown that AI can be used to automate HR tasks, improve decision-making, and enhance employee experience. However, the challenges and opportunities associated with AI adoption in developing countries like Bangladesh may differ from those in developed countries.

7. Future Study and Practical Implications

The Collaboration of Human and Machine

The future trend of the AI for HRM is still the collaboration of human and machine with the existence of confliction. The McKinsey Global Institute believes that "more than 30% of activities in 60% of occupations can be replaced by artificial intelligence"(Chui & Francisco, 2017). According to a research report from the University of Oxford, in the next 10 to 20 years, half of the 702 jobs in the United States will disappear under the influence of IT, and nearly 47% of US employees will be employed. Based on these data, how to elevate the competitive intelligence of human resource managers and deploy the human resources efficiently may be very difficult to handle with. How to collaborate the human and machine with using the developing technologies is also an important question. The large-scale rise in unemployment rate also will cause opposition and resistance.

In detail, in each dimension of human resource management, there are worthy researching questions to be answered. For example, the process design for the matching between job seekers and providers based on HR model and AI. The intelligent performance evaluation system combined with the AI algorithms and performance evaluation standards (Dom, 2018).

Data Driven Human Resource Management Analytics and Information System

To maintain the competitive advantages, enterprises can make strategic plan for the AI transforming by gradually building the internal data analytical system and improving information system. This will provide foundation for embedding with AI system. For each dimension of the HRM, the new AI technology can be attempted. Recruiting and Training can be the staring points as shown by cases analysis. The machine learning techniques for the employees' performance prediction can also be applied for practice and research. The analytics of AI can also be applied for understanding organizational behaviors with data input.

Real Application Process, Advantages, and Risks AI and HR combination has been undenied trend in the HR revolutions. The current mature application is for recruiting, using chatbot

and machine learning. Machine learning and augment learning algorithms are being developed to provide smart solutions for human resource management (Jill, 2018). However, most enterprises now are still not ready for AI application in HR. This process is not only technology diffusion, but also a merge with strategy, organizational behaviors, enterprise culture and management process in the enterprise. So how to design and implement the AI technology into HR practice gradually is still worth exploring. Except for the advantages of AI brings to HR, there are also risks may exist, such as data exposure and inadvertent misuse (Josh 2018). How to avoid such risks is also an interesting topic.

8. Conclusion

In conclusion, the integration of Artificial Intelligence (AI) into Human Resource Management (HRM) presents a transformative shift with significant potential benefits and challenges. AI's capacity to emulate human intelligence through algorithms and machine learning tools offers HR professionals the ability to streamline operations, enhance decision-making, and optimize processes across various HR functions. However, this advancement comes with responsibilities that need to be addressed strategically. While AI in HR has the potential to bring efficiency, data-driven insights, and improved employee experiences, careful implementation and ongoing vigilance are paramount. The implications of bias in algorithms, data privacy concerns, employee resistance to change, and the potential loss of the human touch must be thoughtfully managed. Moreover, the integration of AI demands a re-evaluation of skill sets among HR professionals, ensuring they possess the necessary technological know-how to harness AI effectively while maintaining the ethical and human-centered dimensions of HRM. As Scott W. O'Connor highlighted, AI's role in HR is expected to continue its positive trajectory, shaping the future of HRM. HR practitioners must equip themselves with a deep understanding of the current trends, while also laying a strong foundation of HR knowledge. This will allow them to navigate the evolving landscape, harness the capabilities of AI, and align its applications with organizational goals and values. Ultimately, the successful implementation of AI in HR will hinge on striking the right balance between technological advancements and human expertise. It is through this balance that organizations can harness AI's power to enhance HR operations, fostering a more productive, inclusive, and engaging work environment for employees, while also ensuring fairness, transparency, and compliance in HR practices.

References

1) Agarwal, S., T.D.L. Nguyen, and G.J.R. Aponte, Artificial Intelligence as a Strategic Partner to HRM 4.0, in Machine Learning and Mechanics Based Soft Computing Applications. 2023, Springer. p. 319-327.
2) Ahmed, H. K., Abdelhay, S., Marie, A., & Abdulrahmin, N. F. (2024). Artificial Intelligence applications in the recruitment process: Opportunities and challenges. European Chemical Bulletin, 12(7), 1008–1019. https://doi.org/10.48047/ecb/2023.12.7.77
3) Al-Alawi, A. I., Al-Hadad, A. A. N., Naureen, M., & AlAlawi, E. I. (2021). The role of artificial intelligence in recruitment process decision-making. In 2021 International Conference on Decision Aid Sciences and Application (DASA) (pp. 197–202). IEEE. https://doi.org/10.1109/DASA53625.2021.9682320

4) Amla, M., & Malhotra, P. M. (2017). Digital Transformation in HR. International Journal of Interdisciplinary and Multidisciplinary Studies (IJIMS), 4(3), 536-544. Retrieved from http://www.ijims.com on 12/09/20.

5) Arslan, A., Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies. International Journal of Manpower, 2022. 43(1): p. 75-88. https://doi.org/10.1108/IJM-01-2021-0052

6) Bankins, S. and P. Formosa, The ethical implications of artificial intelligence (AI) for meaningful work. Journal of Business Ethics, 2023: p. 1-16. http://doi.org/https://doi.org/10.1007/s10551-023-05339-7

7) Bibi, P., Pangil, F., & Johari, J. (2016). HRM practices and employees' retention: the perspective of job embeddedness theory. Asian Journal of multidisciplinary study, 4(5), 41-47.

8) Blumen, D., & Cepellos, V. M. (2023). Dimensions of the use of technology and artificial intelligence in recruitment and selection (R&S): Benefits, trends, and resistance. Cadernos EBAPE.BR, 21(2), 1–16. https://doi.org/10.1590/1679-395120220080

9) Budhwar, P., Artificial intelligence–challenges and opportunities for international HRM: a review and research agenda. The International Journal of Human Resource Management, 2022. 33(6): p. 1065-1097. http://doi.org/https://doi.org/10.1080/09585192.2022.2035161..

10) Buzko et al. (2016), "Artificial Intelligence Technologies in Human Resource Deelopment", Computer Modelling &New Technologies, 2016 20(2), 26-29.

11) Chowdhury, S., Unlocking the value of artificial intelligence in human resource management through AI capability framework. Human Resource Management Review, 2023. 33(1): p. 100899. http://doi.org/https://doi.org/10.1016/j.hrmr.2022.100925.

12) Dirican, C. (2015). The Impacts of Robotics, Artificial Intelligence On Business and Economics. Procedia - Social and Behavioral Sciences, 564-573.

13) Doogar, R., P. Sivadasan, and I. Solomon. 2010. The regulation of public company auditing: Evidence from the transition to AS5. Journal of Accounting Research 48 (4):795-814.

14) Eierle, B., S. Hartlieb, D. C. Hay, L. Niemi, and H. Ojala. 2022. External factors and the pricing of audit services: A systematic review of the archival literature using a PESTLE analysis. Auditing: A Journal of Practice & Theory 41 (3):95-119.

15) Farooq, M. B., and C. De Villiers, 2017. The market for sustainability assurance services: A comprehensive review of the literature and future avenues for research. Pacific Accounting Review 29(1): 79-106.

16) Garcia, J., C. de Villiers, and L. Li. 2021. Is a client's corporate social responsibility performance a source of audit complexity? International Journal of Auditing 25(1): 75-102.

17) Ghosh, A., and R. Pawlewicz, 2009, The impact of regulation on auditor fees: evidence from the Sarbanes-Oxley Act, Auditing: A Journal of Practice and Theory 28: 171-197.

18) Griffin, P. A., and Lont, D. H. 2007. An analysis of audit fees following the passage of Sarbanes-Oxley. Asia-Pacific Journal of Accounting & Economics 14: 161-192.

19) Jatobá, M., Evolution of artificial intelligence research in human resources. Procedia Computer Science, 2019. 164: p. 137-142. http://doi.org/https://doi.org/10.1016/j.procs.2019.12.165.

20) Kakulapati, V., Predictive analytics of HR-A machine learning approach. Journal of Statistics and Management Systems, 2020. 23(6): p. 959-969. http://doi.org/https://doi.org/10.1080/09720510.2020.1799497.

21) Kelan, E.K., Algorithmic inclusion: Shaping the predictive algorithms of artificial intelligence in hiring. Human Resource Management Journal, 2023. http://doi.org/10.1111/1748-8583.12511.

22) Khan, S., Faisal, S., & Thomas, G. (2024). Exploring the nexus of artificial intelligence in talent acquisition: Unravelling cost-benefit dynamics, seizing opportunities, and mitigating risks. Problems and Perspectives in Management, 22(1), 462–476. https://doi.org/10.21511/ppm.22(1).2024.37.

23) Kshetri, N., Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary evidence. Management Research Review, 2021. 44(7): p. 970-990. http://doi.org/ https://doi.org/10.1108/MRR-03-2020-0168.

24) Ore, O., & Sposato, M. (2022). Opportunities and risks of artificial intelligence in recruitment and selection. International Journal of Organizational Analysis, 30(6), 1771–1782. https://doi.org/10.1108/IJOA-07-2020-2291.

25) Pan, Y. and F.J. Froese, An interdisciplinary review of AI and HRM: Challenges and future directions. Human Resource Management Review, 2023. 33(1): p. 100924. http://doi.org/https://doi.org/10.1016/j.hrmr.2022.100924.

26) Prikshat, V., AI-Augmented HRM: Literature review and a proposed multilevel framework for future research. Technological Forecasting and Social Change, 2023. 193: p. 122645. http://doi.org/https://doi.org/10.1016/j.techfore.2023.122645.

27) Radonjić, A., H. Duarte, and N. Pereira, Artificial intelligence and HRM: HR managers' perspective on decisiveness and challenges. European Management Journal, 2022. http://doi.org/https://doi.org/10.1016/j.emj.2022.07.001.

28) Sithambaram, R.A. and F.P. Tajudeen, Impact of artificial intelligence in human resource management: a qualitative study in the Malaysian context. Asia Pacific Journal of Human Resources, 2022. https://doi.org/10.1111/1744-7941.12356.

29) Yang, Y., Artificial intelligence-based organizational human resource management and operation system. Frontiers in psychology, 2022. 13: p. 962291. https://doi.org/10.3389/fpsyg.2022.96229.