

Impact of Artificial Intelligence on Human Resource Management Functions: A Literature Review

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Abstract

Artificial Intelligence (AI) is increasingly influencing how organizations manage their human Resource Management (HRM) functions. For example, organizations use AI to shortlist the candidates as per the job description, recommend customised training and development opportunities to the employees, assess employee performance and also support workforce planning. This paper aims to review existing literature on HRM applications and examines both the benefits and challenges of using AI in HRM. The studies reviewed suggest that AI can increase the speed, help in taking more informed decisions and provide more personalized HR services. However, its adoption also raises important concerns, particularly regarding algorithmic bias, employee data privacy, accountability, organisational readiness, and the replacement of human with the AI tools. Few gaps are also identified after the review. Much of the research has focused on specific applications, rather than considering all HRM functions collectively. In addition, there is limited empirical research done on analysing the overall efficiency of Human Resource Management functions.

Keywords: Artificial Intelligence, Human Resource Management, AI Adoption, HRM Functions

Introduction

AI is transforming HR departments worldwide. There is a radical change in industries and businesses are forced to set clear goals to survive and actively seek bright, potential and dynamic employees to keep themselves competitive in the changing digital environment. Companies are increasingly realising that an effective recruitment plan is the cornerstone of achieving talented people who are capable of efficiently and effectively meeting workplace demands. The period is especially characterized by the booming technological development, such as nanotechnology, robotics, machine learning, algorithms, and artificial intelligence (AI). Artificial Intelligence (AI) has been essentially described as intelligent machines which are created by humans. Its core objective is to enable computers to perform and react like humans, carrying out tasks typically associated with human intelligence with incredible speed and accuracy. Artificial intelligence is a branch of computer Science in which computer systems are developed in such a way so that they can adopt a thought process like humans have and are able to do reasoning, act, and update themselves also. Essentially, AI involves a set of pre-programmed algorithms with the ability to learn, serving as a potent tool for computation, analysis, and prediction. The integration of AI into HRM is revolutionising talent acquisition and management. HR managers are progressively implementing AI technology to recruit, retain, and inspire proficient manpower. AI plays a significant role in talent acquisition, companies already using AI for recruiting activities to reduce time and cost, and ensure the right talent is placed in the right position. The application of AI and machine learning in the job search process significantly cuts down time and cost for both the company and the candidate, allowing more strategic focus on candidate selection rather than extensive resume screening. AI tools are being applied across numerous HR functions, including candidate screening, automated candidate engagement and re-engagement, post-offer acceptance follow-up, new hire onboarding, career development support, handling employee relations queries, and scheduling. These applications have significant benefits including saving time by automating repetitive tasks, talent mapping based on competencies to hire people of high quality, immediate redressing of queries by employees, and finally, the recruitment of high-class employees is made possible. This automation enables HR departments to concentrate on strategic initiatives and long-term policies to enhance the human aspect of HR by liberating professionals to focus on the more challenging, more complex, more human challenges. Although the benefits are obvious and the implementation grows, the changes in HRM through AI and its overall effect on the field are the aspects that have a significant research gap.

Objectives

1. To examine how AI is being applied across major HRM functions.
2. To examine the benefits and challenges associated with AI-enabled HRM.
3. To identify research gaps concerning the wider impact of AI on HRM functions.

Literature Review

Abhilasha Singh & Apurva Shaurya (2021) examined the influence of artificial intelligence (AI) on human resources (HR) practices within companies in the UAE. They concluded that there is a significant positive impact of structured training and development processes integrated with AI tools. Eniola Sanyaolu & Rebecca Atsaboghena (2022) in their research examined the application of Artificial Intelligence (AI) technology in various aspects of human resource management functions. They explored the various advantages of application of AI in various domains of HRM. Alam, M.S., Munira, K.S., Rahman, Md.S., Uddin, Md.A., Akter, A. (2022) The current study aims to explore the intention to use and the actual implementation of artificial intelligence (AI) for talent acquisition in Bangladesh. De Obesso Arias et al (2023) This research explores the relationship between the effectiveness of artificial intelligence (AI) and the workplace environment. The objective is to determine whether employees feel more at ease addressing harassment issues with an AI system or prefer to interact with human colleagues. As per Mohammad Islam Biswas (2024) found in his research that the organizations are increasingly adopting artificial intelligence (AI) and replacing traditional performance management systems because of the technological advantages. For example, when performance appraisal is done by using a fixed formula, employees demonstrated greater trust in AI algorithms, and had higher performance expectations, and were more likely to seek feedback from AI compared to highly experienced human supervisors. Marler, Janet H. (2024) explained in his paper that the compensation strategy is essential for attracting, motivating, and retaining valuable human capital. The benefits of adopting a strategic approach to compensation are enhanced by technological advancements such as cloud computing and digitized big data, which provide vast amounts of information that can be analyzed electronically, creating significant competitive advantages.

Impact of AI on HRM Functions

Better Decision-Making: AI helps the top level management to make better and more informed decisions using AI tools.

Improved Employee Experience and Engagement: AI individualizes operations such as onboarding and training and can offer immediate assistance through chatbots. The capabilities cause the employee journey to be smoother and also increase engagement levels.

Efficiency and Objectivity: The algorithms based on AI simplify the recruitment process and can be applied to large amounts of resumes to quickly assess the applicants, categorize them and select the most suitable candidates. This shortens the time and the effort to go through the first screening and increases objectivity.

Simplified Recruitment and Onboarding: AI-powered recruitment tools can be used to screen candidates, schedule interviews, and complete onboarding paperwork, considerably reducing the amount of time required to perform these tasks. Onboarding is an important factor in creating the general employee experience. It is able to determine the retention of a new recruit within the company or one that leaves within a short time. Onboarding systems powered by AI will help leave a positive first impression on new employees, as well as make the process smoother and more efficient. This is probably one of the reasons why over two-thirds of organizations have already started using AI to help them in their onboarding process. Through a variety of features, AI enables team to provide customized onboarding experiences to every new employee. According to a BCG survey of chief human resources officers in 2024: If a company is experimenting with AI or GenAI, 70% of them are doing so within HR. Within HR, the top use case for AI or GenAI is talent acquisition.

(<https://www.bcg.com/publications/2025/ai-changing-recruitment>)

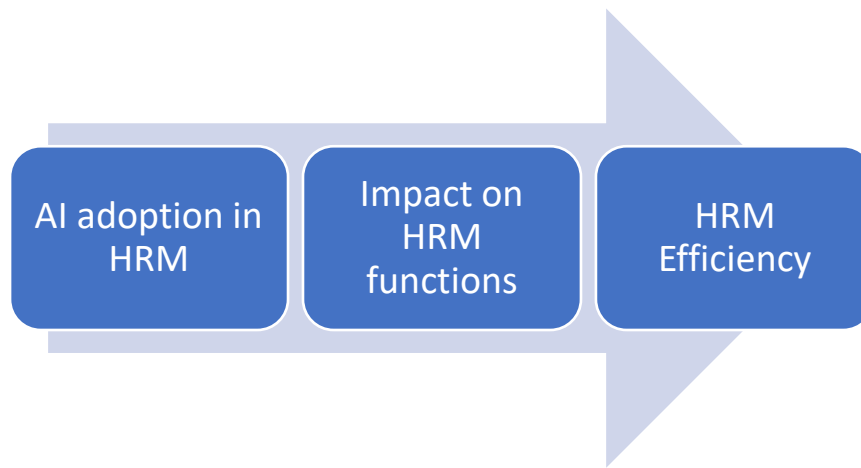
Challenges in AI-Enabled HRM

The underlying challenges of measuring complex HR phenomena, which are frequently based on the behavioral science, may undermine the quality of AI algorithms. There are also concerns over limitations based on finite data

sets that might not capture the full complexity of human behavior and issues of accountability due to issues of fairness, moral concerns and legal limitations. Most importantly, at present AI cannot see or evaluate human feelings, ambitions, or passion, and it cannot fully understand the nuances of team interaction, which is the key to the functions of HR that are really human-centered. Moreover, there is a potential for adverse employee reactions to management decisions based solely on data-driven algorithms. The overall trust in AI-based technology, particularly regarding its strategic contributions beyond transactional roles, is still evolving.

Conceptual Framework

As per the studies, there is an impact of AI adoption on HRM functions individually which results in overall HRM efficiency in the organisation. To explain, we can say that when different tools have been adopted by HR professionals in the organisation, there is a significant impact on different functions of HRM like recruitment & selection, training & development, employee engagement, etc. compiling of which ultimately lead to increased efficiency of HRM functions in the organization.



Source: Self

Research gap

After the study of various literature, it has been observed that there is more scope of research in the field of Artificial Intelligence in HR industry in India. As the result of the exclusive literature study done, it is evident that not much research has been carried out in Artificial Intelligence in context to the HR industry within India and other countries. Research on the basic concept of Artificial Intelligence in human studies is analyzed. Many of the researches have concentrated on the challenges, issues, risks of using Artificial intelligence in various industries like health care, automotive, chemical, etc. but a limited number of studies have been done on the current state of AI in the To be more specific, a considerable amount of research has been undergone to examine the role of Artificial Intelligence in the Talent Acquisition/Recruitment & Selection process and a few in training & Development. There are very limited number of empirical studies done till now. By having this as background, the researcher of this study aims to draw interest to estimate the impact of Artificial Intelligence technologies on all major crucial Human resource management practices. This study intends to include the following HRM practices in the research: Workforce planning & Decision Making, Talent Acquisition/Recruitment & Selection, Training & Development, Performance Analysis, Employee Engagement, Compensation& Rewards, and Employee Retention, as only very limited literature, has been addressed on these HRM practices and which is on a strategic point of view.

Conclusion

Artificial Intelligence is playing a significant role in to Human Resource Management functions through automation. The potential benefits are considerable, but the challenges like privacy, transparency, accountability are also associated with it. It has been concluded that the impact of AI on HRM should be evaluated across multiple functions rather than each function individually. Recruitment has received considerable attention, but a more complete understanding requires simultaneous consideration of employee development, performance management, engagement and workforce planning. Further empirical research should therefore examine how the

intensity and nature of AI use affect the effectiveness of different HRM functions.. Such evidence can help organizations to develop AI-enabled HR systems that are efficient, responsible and strategically aligned for organisational effectiveness.

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