



A Study of Artificial Intelligence and Its Role in Human Resource Management

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Abstract

As technological advancements reshape the landscape of industries worldwide, the integration of Artificial Intelligence (AI) into Human Resource Management (HRM) practices emerges as a pivotal area of exploration. This abstract delves into the implications, challenges, and opportunities associated with the infusion of AI in HRM. AI provides a wide range of tools and algorithms that have the potential to completely transform HR processes, including as hiring, employee engagement, performance reviews, and talent management. AI-powered automated screening procedures improve candidate selection efficiency, resulting in a more efficient hiring process with fewer prejudices. AI-driven analytics also offer insightful information on employee performance indicators, which helps with data-driven decision-making

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for retention and talent development plans.

The potential advantages of AI in HRM are significant, notwithstanding these difficulties. The goal of green HR practices is to include environmental considerations into HR policies and practices, covering areas like hiring, training, and staff involvement. HR professionals may dedicate more time to strategic initiatives and employee development by automating repetitive processes and utilizing predictive analytics. This will ultimately result in the development of a workforce that is more resilient and agile. Furthermore, HR departments can quickly adjust to changing organizational needs thanks to AI-driven insights, which promotes an innovative and continuous development culture.

Keywords: Artificial intelligence. Machine languages. Human resource management.

1 Introduction

Technology is one of the major influential factors in an Industry. Since the 19th century, the role of robot has been replacing employees in production department. In third revolution began in the year of 1970s personal computers and the internet entered into working life and human labor were replaced by the machines. Now a day's digital technologies like machine language (ML) and artificial intelligence (AI) both are entering into day to day working at workplace and which will lead transformation in business. "Artificial intelligence is defined as "an ideal intelligent" machine that is flexible agent that perceives its environment and takes actions that maximize its chance of success at some goal." In the era of rapid technological advancement, Artificial Intelligence (AI) stands as a cornerstone of innovation, permeating virtually every aspect of modern society. It aids to increase sales, manage frauds and manage human resources.(Gautam & Mittal, 2022).

Among its many applications, the integration of AI into Human Resource Management (HRM) emerges as a transformative force reshaping traditional practices and redefining the future of work. With pre-installed algorithms and processing technologies built on data analysis, artificial intelligence (AI) can make judgments in real time and automatically learn and adapt to provide increasingly sophisticated solutions to situations. (Rodgers et al., 2023). More powerful computers with exponentially more processing power are available for training sophisticated models on bigger datasets. (Mittal & Gautam, 2023).

HRM has been characterized by labor-intensive processes, subjective decision-making, and reactive strategies. However, the advent of AI technologies presents a paradigm shift, offering unprecedented opportunities to optimize HR functions and elevate organizational performance. By leveraging machine learning algorithms, natural language processing, and predictive analytics, AI empowers HR professionals with actionable insights and automation capabilities across the entire employee lifecycle.

A new era of effectiveness, flexibility, and creativity in human capital management is brought about by the combination of AI and HRM. Even though there are still obstacles to overcome, AI has the unquestionable ability to revolutionize HR procedures and promote corporate performance. As we continue to explore this changing environment, we must ethically adopt AI and use its ability to assist individuals and organizations in overcoming the challenges of the contemporary workplace.

2 Research Objective

- To study the role of artificial intelligence in human resource management.
- To examine the current state of AI adoption in HRM practices across various industries and organizational contexts.
- To investigate the challenges and barriers associated with the integration of AI in HRM
- To explore the long-term implications of AI in HRM on organizational performance, competitiveness, and sustainability

3 Literature Review

A framework shows the relationship between the management and organization with artificial intelligence has been demonstrated. (see figure 1).The research author Duchessi, O’Keefe, and O’Leary’s (1993) in the research article discussed that artificial intelligence and digital technology has impact on the ownership and responsibility for decision making, cost reduction and enhanced service, personnel shifts and downsizing, has impact on organizational structure, workforce management.

Okr glicka, Mittal, and Navickas’s (2023) highlights the need for more focus on sustainable human resource management, which, if it encourages equitable treatment and employee well-being and supports pro-ecological activities within the company, among other things, can directly help the company’s sustainable development strategy. Duchessi, O’Keefe, and O’Leary’s (1993) in the study discussed that artificial intelligence and digital technology has impact on the ownership and responsibility for decision making, cost reduction and enhanced service, personnel shifts and downsizing, has impact on organizational structure, workforce management. Kapoor’s (2010) has examined the role of business intelligence and its use for human resource management. In this research article, a researcher investigated the leading business intelligence vendor to look into the business intelligence and data analytics features incorporated in human resource management modules. Prasad Vutti’s (2023) The research paper identified the role of artificial intelligence in human resource management. The researcher has quoted that most of the companies has been adopting modern technology in various HR process like recruitment

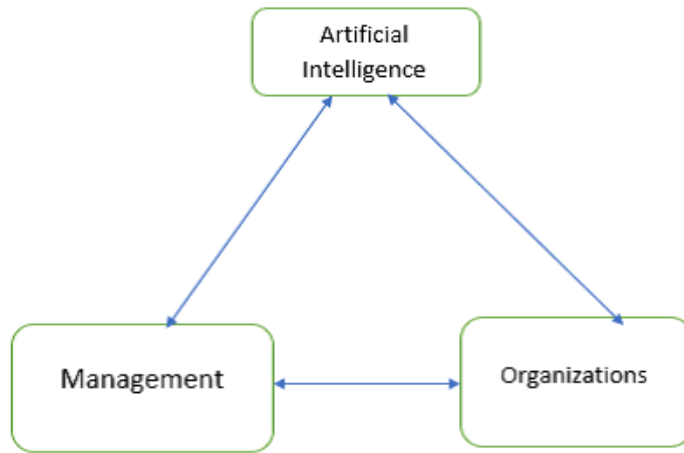


Figure 1. Relationship Between The Management and Organization with Artificial Intelligence

process, performance appraisal process, cloud-based HR systems.

Dirican's (2015) in his research paper has studied that use of Robotics and Artificial intelligence in business may have negative impact on the overall functions of an organization like production, performance management, sale, strategic planning, customer relationship management, banking system, coaching, training, taxes etc. Buzko et al.'s (2016) in the paper entitled Artificial Intelligence technologies in human resource development. The researchers, ponder on hurdles of AI technologies in human resource area where authors noted that AI not able to identify the effectiveness of training costs. In the research paper authors noted that artificial intelligence technologies facilitate the prompt analysis of data by human. The researchers Geetha.R and Reddy.D's (2018) have narrated the role of AI in recruitment where artificial intelligence is played integral role in recruitment process. Artificial intelligence helps in screening the candidates, auto-generated messages to candidates, employee's relations, scheduling the interviews etc.

Jarrahi's (2018) In his researcher paper highlighted Human- AI Symbiosis in Organizational Decision Making. The researcher papers talked about the usefulness of AI for human. Artificial intelligence has been supporting in decision making, dealing with uncertainty, and especially equivocality of decision-making in an organization Merlin.P and Jayam.R's (2018) In the research title, Artificial Intelligence in Human Resource Management, the researcher has insight the role of AI in human resource.

Despite the rapid growth of academic production in intelligent automation (e.g., robotics, artificial intelligence), we still do not have a complete understanding of the effects of using these technologies in human resource management (HRM) on both an individual (employee) and organizational (firm) level. (Vrontis et al., 2023).

4 Research Methodology

The research study is using the descriptive research design. In the research study the researcher has used secondary data. The secondary data has been collected from research papers, published materials, online websites, HR blogs, and survey reports published by various research organizations.

5 Role of Artificial Intelligence In HR

Nowadays departments heading towards the digital revolution and using various methods to simplify resources by using big data analysis, artificial intelligence, and cloud computing. (Amla & Malhotra, 2017). Most organizations have been using artificial intelligence or digital technologies in HR like chatbots, machine learning, and robot process automation in human resource management which support recruitment, screening, onboarding, interviewing, etc. It has also affected decision making.(Murgai, 2018). The following are the roles of artificial intelligence in human resource management:

1. Recruitment: The researcher Amla and Malhotra's (2017) in his paper defined that only 40 percent of companies and industries are using artificial intelligence. Organizations like SAT, Facebook, GE are using digital technologies in screening, interviewing, and identifying new talent for the recruitment process in an organization. Through AI recruitment manager can examine the application and the candidate can get a quick response. Chatbox systems or automated answering machines play an essential role in solving queries and problems regarding the process of recruitment in an organization.
2. Screening and Interview Process: Artificial intelligence helps automate the interview process by examining them with word or speech pattern exams. Through Ay software digital interviews can take place and AI also helps to improve the candidate experience. Tools like Amy and Clara are used to scheduling interviews, and working meetings.
3. Reduce Administrative burden: In an organization HR has to play multitasking roles where using technology and Artificial intelligence companies try to reduce workload.

AI provides solutions to problems and it helps to increase the efficiency of HR in an organization.

4. **Selecting:** The researcher Rajesh, Kandaswamy, and Rakesh's (2018) has examined that through AI human resource managers can able to trace the right candidate in a short time span and technology will help out to identify the suitable candidates as per required skill sets.
5. **Reduce Discriminations:** Nowadays, AI is being used to reduce favoritism and will help to increase transparency in the workplace. In such a way organizations can able to select the resume. AI applications can be used to analyze job descriptions.
6. **Increase Efficiency:** Artificial Intelligence will help to reduce the redundancy of employees at the workplace. Various robotic tasks have been carried out to increase efficiency. Robotic tasks include collecting data, filing reports, copying data, identifying required data from available data, processing, collecting data for HR and payroll systems, etc.
7. **Enrich workplace learning:** Nowadays, computers and digital technology can do the behind the scenes role in industry. Through computers and modern technology industries can able to manage data analysis and provide real-time feedback during training, alteration of course of actions based on progress and responses which industries got. To save time companies use Microsoft 365 which helps employees to work and increase the efficiency at workplace. AI tools like Engazify (To Provide feedback), Obie and Niles (For knowledge sharing), Wade & Wendy (For Career advancement), and Duolingo (Learning domain) are used.(Amla & Malhotra, 2017).

6 Benefits of Artificial Intelligence In HR

- Reduce the burden on administrative staff in company.
- It will help in talent acquisition and identify the right candidates for the job.
- AI helps to predict the rate of employee retention at the workplace.
- It can overcome the limitations of human and work accordingly
- The chance of error will be less.
- It will maintain the workflow in various department.
- Through AI companies can able to get accurate results.
- It will increase the employee engagement at workplace.
- It will minimize the bias behavior in decision making.

7 Challenges Of Artificial Intelligence In HR

Firstly, the use of artificial intelligence will lead to a large number of employees to be replaced, the organizational structure will be flattened, and artificial intelligence will be used to handle a large number of transactional management tasks, such as data analysis, employee relations, primary recruitment post, compensation, training, etc., making the enterprise managers redundant. The application of artificial intelligence will reduce the number of labor force, and the number of unemployed people will increase year by year. For example, Foxconn's massive use of robots to replace production line workers, as well as unmanned stores and driverless cars, will have a large impact on a large number of low-end jobs. Due to the rapid progress of new technologies such as artificial intelligence, the demand for labor will fluctuate. Secondly, although artificial intelligence technology has reduced the number of employees of low-end jobs, it also forced companies to pay more for equipment maintenance cost. (Qiu & Zhao, 2019).

At the same time, it also puts higher demands on the quantity and quality of artificial intelligence professionals. At present, there is an obvious shortage of professional talents in the field of artificial intelligence, especially the senior talents who master the core technology of artificial intelligence, which will undoubtedly increase the cost for enterprises to maintain artificial intelligence products. Only by properly solving the problem of AI talent shortage can we set a good foundation for its large-scale application.

In the future, we should focus on the establishment of artificial intelligence professional personnel training system from the aspects of mechanism and mode. Further, the core part in any company is their human resource and by implementing the AI system it may have impact on levels of management which will lead fearless in the mind of employees. Getting right candidate to handle AI tools is one core challenge in front of industry and it can be difficult to HR department. One more limitation and challenge is restrict HR department to take decisions in day-to-day life as technology overcomes the authority and role of HR into decisions making in an organization.

8 Conclusion

In competitive era there is tremendous growth for industrial sector. Managing continuous improvement is one challenges in front of industries. To enhance the speed and for routine work most of the industries adopting modern technologies. Most of the researcher and experts also recommending industries to make a use of artificial intelligence tools, digital technologies. Artificial Intelligence and machine language have been used by many companies in the field of human resource department where AI plays integral role in recruitment, selection, hiring, analyzing performance, collecting data regarding employees, providing

real time information and providing accurate information.

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