Artificial Intelligence in HR: Enhancing Recruitment and Employee Management

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Abstract
As business sectors evolve, human resource management (HRM) encounters new difficulties that need to be tackled to promote the optimal growth and advancement of the firm. This study examines how Artificial Intelligence (AI) technology is used in human resource departments for recruitment, onboarding, employee retention, compensation management, and general staff management. The integration of artificial intelligence (AI) with HRM practices is changing how firms attract, oversee, and involve their employees. Artificial intelligence enables machines to make decisions more accurately than humans by analyzing previous data and behavioral patterns. Due to this change, machines have taken over all physical tasks, leading HR professionals to take on more strategic responsibilities. The advantages of utilizing artificial intelligence in several departments of human resource management have been outlined, along with the obstacles encountered while integrating AI in HRM. This article will address the advantages of AI for firms looking to improve the efficacy and efficiency of their human resource functions.

Keywords: Artificial Intelligence, Human Resource Management, Human Resources, Benefits, Challenges

INTRODUCTION
The success of an organisation is contingent on the degree to which it is able to integrate its workforce, processes, and machinery in order to provide value at a low cost. Recently, Human Resources (HR) has advanced in a manner that is driven by technology and data that employees regularly supply in order to strengthen their strategic function. In this category of technology, artificial intelligence is one of them. Using computer programs that are directed by logic, "Artificial Intelligence" (AI) can be characterized as a science that tries to mimic features of human intellect such as learning, reasoning, perceiving, critical thinking, and other similar activities. Artificial intelligence is referred to as a "intelligent agent" by Russell and Norvig. This is due to the fact that computers are able to behave intelligently as humans by imitating human intelligence. This is made possible by providing the machines with a large amount of data that is then evaluated and trained using machine learning examples. Another way to explain it is as the capacity of a system to accurately comprehend input, to acquire knowledge from it, and to utilise that knowledge in the process of accomplishing particular goals and tasks through the utilization of adaptive implementation. The use of artificial intelligence enables employees to improve their skills and knowledge in a more productive manner by relieving them of the burden of performing jobs that can be automated. This is one way in which artificial intelligence contributes to the enhancement of human intelligence.
HRM, which stands for human resource management, can trace its origins back to the 1890s, when industrial welfare work was first established. As a result of the transitions that have taken place from a directed management system to a more technical management system, there has been an increase in the level of professionalism demonstrated in this function. With the acquisition, expansion, and fusion of not just human capital but also organizational and physical resources, organisations have the ability to raise the value of their competitive edge. This is something that can be accomplished when organisations actually work on HR practices. In order to come up with creative solutions to employee issues that are related to human resources, artificial intelligence technologies can be integrated with HR activities. The purpose of this review paper is to attempt to describe the uses of artificial intelligence (AI) in human resource management (HRM), as well as its advantages and disadvantages.

RESEARCH AIM
The purpose of this research is to evaluate the advantages that artificial intelligence (AI) brings to the field of human resource management, as well as its implications for HR management and the potential difficulties that may arise when applying AI in HR management.

Research Objectives
- Learn about artificial intelligence and how it relates to human resource management.
- The many sectors of human resource management (HRM) that could benefit from the application of AI should be evaluated.
- To conduct an in-depth analysis of the effects and benefits of artificial intelligence in the sections that have been defined.
- In the context of human resource management, it is important to conduct an analysis of the potential challenges that may arise from the adoption of artificial intelligence.
- In order to create pertinent recommendations based on the findings of the research and to draw conclusions based on the evaluation of the research.

Research Methodology
In this study, a descriptive research method was made use of. In this article, secondary data are utilised, and they have been gathered from many sources, including research papers, published materials, websites, and HR journals.

LITERATURE REVIEW
Despite the fact that Artificial Intelligence (AI) has been around for quite some time and has been utilised in a broad variety of contexts during the course of its existence, it has not been until the latter part of this year that the technology has been further developed and deployed in a variety of organizational settings (Tecuci, 2012). To get a better grasp on the idea of artificial intelligence, the most straightforward approach is to dissect the phrases in isolation and examine their meaning. On the other hand, despite the fact that artificial intelligence has been around for a longer amount of time, there is not a single definition of the notion that has been predetermined (Legg & Hutter, 2007). Due to the fact that it is typically more difficult to locate, many researchers who bring forth definitions focus on defining the 'I' in artificial intelligence. According to Bringsjord and Schimanski (2003), the definition of 'A', which is Artificial, is a term that is universally accepted, and as a result, it does not require as much description, hence. The Oxford Dictionary defines artificial as something that is "made or produced by human beings rather than occurring naturally, especially as a copy of something natural" (Oxford Dictionary, 2019).
Artificial is described as something that falls into this category. As a result, it is possible to show that artificial is anything that humans have created in order to provide the impression of something that normally occurs naturally.

Technological developments in recent years have had a significant impact on the HRM sector; in particular, the Internet has had a major impact on how HRM functions in businesses as a whole. When it comes to automating the hiring process and other HR functions like HR evaluation and HR rewards, online recruiting, also known as e-recruitment, has become a major trend in HRM (Dhamija, 2012). There have been arguments regarding how firms might handle the enormous amount of job applications that arise, particularly from the usage of internet recruitment (Reingold, Baig, Armstrong & Zellner, 2000). However, large organizations have been especially adept at using technology to their advantage throughout the employment process (Andersson, 2003). E-recruitment is one of the most often used non-traditional recruitment strategies, according to Dhamija (2012), for identifying and luring in prospective employees. Businesses started using internet recruitment since it is more effective, affordable, and quicker to identify possible candidates this way. The potential for discrimination between internet users and non-users is a notable drawback of online recruitment (Dhamija, 2012). Apart from all the benefits that come with online hiring, it's crucial to keep in mind how technology has revolutionized HRM in many ways. Online recruiting includes a variety of recruitment components in addition to electronic job application forms. These components include posting job openings online, accepting applications online, and utilizing various electronic recruitment tools. Robots that browse through online applications and recruiting banks are two examples of electronic instruments.

APPLICATION OF ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE MANAGEMENT

AI's influence on HRM is expanding quickly. With pertinent and thorough assessments of numerous functions, it has the ability to completely change HR operations. Virtual assistants are now used to assist with tasks including hiring and selecting employees, onboarding, performance management, employee engagement, and staff retention. Applications of AI are based on the development of Human Resource Information Systems (HRIS). "HRIS is a procedure for gathering, storing, maintaining, retrieving, and verifying data about personnel activities, organization unit characteristics, and human resources that an organization needs."

Recruitment and Selection

The hiring of qualified applicants is the responsibility of the HR specialists, who are in charge of the organization's talent acquisition. It can be challenging to find the ideal applicant when there is a large pool of talented individuals. HR directors may find it difficult to narrow down applicants and review resumes in order to identify a qualified applicant for the position. In order to avoid incurring significant costs to the organization due to operational delays, it is imperative that they make contact with qualified candidates as soon as possible in order to fill open jobs. Ensuring a positive candidate experience is essential since it raises the likelihood that the applicant will accept the offer. It is imperative to guarantee that the incoming crew has an excellent experience right from the start. Even as the need for hiring grows, AI can aid in expediting the employment process. It can be used to automate repetitive processes by analyzing vast amounts of data in order to identify trends. During recruitment, it can also be utilized to expedite the hiring procedure. Websites of businesses can use AI technologies, such as chatbots, to draw users in and boost conversation rates. While conversing with the bots, potential candidates will be willing to give up their resumes and other personal information.
Chatbots are capable of inquiring about a candidate's interest in a certain role and providing basic answers to frequently asked queries from potential candidates. This saves time since chatbots can handle some of the laborious tasks associated with recruiting, like gathering applicant data, prequalifying prospects, setting up meetings and chat sessions, and giving candidates basic question responses.

The enormous volume of data received can be interpreted with the help of machine learning algorithms, which can also be used to find patterns that the organization had not previously noticed. Artificial Intelligence (AI) can assist in resume screening and finding the best applicants for a job. Using models based on machine learning, a candidate's experience, talents, education, and many other interests of the company are verified before they are hired. By separating the candidates with the most relevant talents, this technology can assist in reducing the total number of applicants. If implemented correctly, this will only take qualified candidates into account and help remove prejudices. In order to make sure the candidate selected is the most qualified, AI may also do background checks, such as looking through candidates' social media profiles. In addition to ensuring a fair recruiting process and the hiring of the best candidate, this will save the recruiter time.

Because it takes time to engage and re-engage prospects, most firms find it difficult to do so. After submitting an application for a job or following an interview, companies usually don't get in touch with or reply to candidates. Employees currently expect a response from the company within ten minutes after filing an application, according to a study. Thus, it is imperative to follow up with them following an interview or job application; failing to do so runs the danger of losing them to more accommodating competitors. Artificial intelligence (AI)-infused software, like chatbots, applicant tracking systems (ATS), and customer relationship management (CRM), helps with real-time candidate response and progress reporting.

Subjective factors like nepotism and favoritism are less likely to be present in the recruiting and selection of potential candidates when artificial intelligence is used in human resource management. Throughout the process, a recruiter's viewpoint could be impacted by factors including color, gender, ethnicity, or even language. By combining automation and artificial intelligence with algorithm assessment platforms, biases are removed. This platform has the advantage that bias can be altered to reduce or eliminate it if it is found during an audit.

Onboarding

The process of swiftly and easily integrating new personnel into the organization's culture and policies is known as onboarding. An essential component of the HRM process is onboarding. It defines and advances the corporate culture in addition to merely exhibiting it. Recruits will feel better about the
company, remain more engaged, and be more willing to work for the company longer if the onboarding process is done well. These recruits, however, need extra care, and it can be difficult to provide for them one-on-one. AI can automate the onboarding procedure, turning it into a self-service process that streamlines laborious manual activities and enables new hires to seamlessly collaborate with the management team and workforce.

Early on in the onboarding process, while new hires are still forming their opinion of the company, is crucial. A part of this process also involves intelligent chatbots. AI-driven chatbots can assist with data collecting, offer recruits the information they require, arrange data, give them all the forms they need to complete, ask for the documents they need, and offer any online assistance that may be required. Without the assistance of IT, these chatbots can also assist in creating new accounts for these recent personnel and integrating them into the company's system. Because AI's automated onboarding process lets recruits integrate into the system at their own pace, it offers flexibility in terms of time and place. This speeds up the integration process and decreases administrative work as well. In order to further assist the recruits and provide them with a better onboarding experience, these chatbots can also solicit feedback from them.

Training and Development

Through learning and development, HR professionals are responsible for ensuring that staff members have the necessary knowledge and expertise to meet both personal and organisational objectives and goals. Learning and development will assist in adapting to changes, monitoring the application of skills, maintaining learner engagement, cultivating soft skills, producing leaders, imparting conflict resolution abilities, and upskilling and reskilling. Any organisation that wants to employ professionals with high levels of technical proficiency must have a suitable training facility. Workers must stay up to date on the newest advancements and trends in their industry. AI-based solutions can now be used by HR departments to assess and train employees. AI techniques have made it possible to identify skill shortages and develop employee training programs that are tailored to their individual needs.

AI can assist in matching new personnel with individualized learning paths based on their interests and skill sets. This will be particularly beneficial to large organisations in helping them to understand the basic skills and interests of their employees, which will enable them match those interests and skills to their development paths and the skills required for projects. Additionally, by analysing training metrics, this technology may be used to identify individuals who require additional training as well as the individual training needs of each of these employees. With the correct AI tools and application, employees could learn more effectively and quickly, resulting in improved personal and professional development and increased productivity. Since each employee receives the necessary knowledge at the appropriate time, AI-based training programs enable the needs of every employee to be satisfied.

Moreover, learning and development movies can be produced by AI-based solutions to automate the learning process. It is not necessary to reshoot or rehire voice actors because these training videos may be utilised repeatedly and even translated into new languages. Given that videos are among the best ways to transmit information, learners are more inclined to choose them over texts. With artificial intelligence (AI) technology, a dry text paper or text-based learning resource can be quickly transformed into an interesting video.

Performance Management

Any organization must have a clearly established structure for performance management. Employers can monitor their impact on the workplace by using an effective performance management system. With this
structure in place, the organization's training programs' effects may also be monitored. Employees will be able to match their work performances to the aims and objectives of the business with the aid of this structure. Setting goals, completing self and manager evaluations, having discussions, and signing off are some of the time-consuming processes included in the traditional performance management approach.

Artificial Intelligence (AI) can assist in tracking goals in real-time and offer feedback on completed tasks as well as unfinished ones. By collecting and analyzing data about workers' job performance, the assessment model can be incorporated into the system for performance management. It is simple to control employee behavior and evaluate their work with the aid of AI solutions. In the event that goals are not reached on schedule, AI can assist with notifications and topic recommendations to boost productivity. Rewards can also be suggested to encourage the quicker completion of goals.

Artificial intelligence (AI) technology can assist in removing any biases in employee performance comparisons. One way to achieve this is by setting clear and comprehensive performance standards. It lessens the tendency for managers to evaluate employees in a one-sided manner. AI can assist in coordinating underperforming staff members with the necessary goals to enhance performance. Additionally, it can be useful to provide information about an employee's potential and predict whether or not they will perform well. HR experts may find this information to be crucial for succession planning. These technologies are used by HR professionals to set goals, monitor team and individual performance, gain insights and modifications, and save operating time. This equates to maximum output and successful outcomes all around.

**Employee Engagement**

Labor relations, also known as employee engagement, focuses on how employers and employees collaborate to establish a just workplace. It can be challenging for certain firms to comprehend their personnel and needs. HR managers at companies will find that having a thorough understanding of their workforce is helpful when attempting to resolve issues at work. In an organization where employees experience abusive behavior, such as disagreements, sexual harassment, yearly leave disputes, bullying, and other employee relations issues that might negatively impact your business, it is the duty of HR managers to prevent and handle these issues. Since such communication is a key component of employee engagement, chatbot automation can also be helpful in this area. Workers may speak more freely and engage in more interactive communication thanks to this platform. This can give HR professionals and employees instant access to feedback, both positive and negative. Workers don't need to arrange meetings or physically meet to discuss their feelings openly.

Employers may now forecast their workers' engagement levels using a variety of AI-powered prediction techniques. AI analytics models can be used to search through many types of text, including emails, chatbot messages, memos, comments made in the media, and the like, and extract the information required to measure employee engagement. It is now possible to forecast the current and future levels of employee engagement by evaluating huge datasets and producing significant results from them. Information gathered from diverse media sources can be organized into structured data for analysis using natural language processing (NLP) technology. Topic analysis and sentiment analysis are capabilities of this technology. Additionally, this technology can assist in deciphering the emotions contained in a text response provided by an employee in a survey. This can be used to gauge how satisfied workers are overall with the work that the company has done. With the aid of AI-based technologies, HR
professionals can expedite the process of reviewing engagement surveys, identify employee requirements, and promptly address those needs.

**Compensation Management**

This is an important HRM component. It is the procedure for evaluating, overseeing, and figuring out the benefits and incentives that every employee receives. A company's ability to retain employees is greatly influenced by the pay and perks it offers. The fierce competition in today's corporate environment makes it more and more difficult for organizations to maintain benefits and salary levels. In order to satisfy organizational demands, the HRM must build up remuneration systems and other advantages. Fair and competitive employee compensation is required since it will help businesses draw and keep the best people.

Both individual and group performance will be improved with the aid of an efficient compensation management system. Neural networks with artificial intelligence can be a helpful technique for ensuring fairness in the assessment of employee compensation. This technology can be used to build an intelligent support system to build a fair pay evaluation system with the aid of big data. AI can help firms save time and stay current with the evolving needs of their workforce and the market. Future trends in employee compensation can be predicted by gathering pertinent and historical data using big data analytics. AI can be used to keep an eye on changes in the labor market, guarantee that workers receive competitive pay, and develop a system that will allow remuneration to be adjusted based on performance, which will motivate workers to put in more efficient and careful work. AI may assist HR managers in designing the perfect compensation plan for their staff members and in offering a just compensation plan based on qualifications, experience, skill sets, and other factors, ensuring that companies get closer to eliminating pay disparities.

**Employee Retention**

Many industries nowadays have extremely low retention rates, which can have a detrimental effect on the productivity of the company. A staff member's departure has a detrimental effect on the remaining team members' motivation and productivity in a competitive setting. In addition to decreasing organizational growth and impacting revenue, employee attrition raises recruiting and training expenses. The HRM is then tasked with hiring more employees to cover the labor shortage.

HR managers can use AI machine learning-based solutions to estimate staff turnover rates, identify high-risk personnel, and create incentive programs for staff members. To identify trends in historical data, analysis is done on the data. This projection takes into account every potential explanation for staff retention. Artificial Intelligence (AI) can be used to track employee engagement, inquire about the employee's happiness, solicit employee input, and promptly handle the feedback to make sure the person is content and motivated to work. Employee attrition can be prevented by implementing AI chatbots to streamline the onboarding process, responding promptly to employee input, making sure staff members have the skills needed for their tasks, and offering competitive remuneration packages with AI-enabled solutions.

**Career Path**

Artificial intelligence has long been utilized in the HR industry in learning management systems and training modules to help employees identify the proper career path, enhance their skills so they may succeed in their current roles, and encourage their desire for greater promotions. By using this method, AI technologies may mobilize massive and diverse data sets, such mountains of historical data and gigabytes of biographies and performance reviews, to show an improved training and education model
 tailored to a particular professional level or experience. Businesses all over the world largely rely on artificial intelligence approaches to empower, train, and grow their workforce. As a result, those institutions have better working environments and become centers of talent and expertise.

Emotional analysis methods have been used recently to find biases and attitudes of employees about everything from using social media sites like Instagram and Twitter. In order to assess employee attitude, engagement, and role, emotional analysis applications will become more widely used in the human resources field in the next years. This is a result of the rise in entrepreneurship and the use of these technologies.

The World Economic Forum earlier stated in an October 2018 research that the lack of skills needed to keep up with the rapid growth of technology will be the biggest challenge facing the workforce of the future. It is necessary to guarantee that the workforce can support emerging technologies. The digital divide has caused a sharp increase in the gap between wealthy and developing countries. More importantly, in addition to certain decisions made about the cost of those technologies, the nature of the advanced professional and technical skills required for the design, operation, and upkeep of digital infrastructure, the need for the mastery of fundamental skills, and the expertise in information and communication technology all play a role. The theory is that in order to close the knowledge gap and reduce inequality in the workforce, skills are essential.

**BENEFITS**

Artificial intelligence helps many different businesses by lowering the time and effort needed to do complicated activities, which leads to improved accuracy and outcomes. The quantity of human resources data increases the amount of time needed for data analysis. Software with AI capabilities can now handle important data-intensive activities and recognize patterns in data with ease. As a result, computers can now identify mistakes and inconsistencies quicker and more precisely than human resources staff. This results in a substantial time savings and increased profit margin. Every organization's primary goal is to make money, and as a result, companies are making the most of AI and employee-machine collaboration.

Additionally, HR staff members can concentrate on more difficult tasks involving a high degree of human interaction by using AI. This entails fostering customer relationships, creating a more engaged work environment, advancing employees' careers, and putting an emphasis on tactics. Even though a lot of businesses still use online learning resources for continuous training, employees don't always get the most out of them since they are frequently disorganized. Artificial intelligence approaches are used to arrange and show programs in a way that maximizes learning outcomes. AI has the potential to lower the cost of several organizational operations, including hiring and training. Its ability to foresee and analyze data allows it to deliver pertinent and practical answers, improving readiness for upcoming issues.

**CHALLENGES**

It's clear that artificial intelligence (AI) will advance HRM, but HR professionals must be mindful of the risks. One of the biggest obstacles to incorporating AI into HR tasks is employee mentality. People's anxiety over AI's pervasiveness, which allows it to track many elements of employees' behavior, is growing. Therefore, before the technology is utilized for any purpose that would facilitate a smooth transition, all parties concerned should be made aware of the potential consequences and concerns
Companies today require employees with all the required skill sets. The rationale is that all departments, including human resources, employ artificial intelligence in some capacity. Employees often struggle to understand and use new AI tools into their roles due to a lack of technological abilities. There's a good chance that technology will eventually supplant HR's influence and function in corporate decision-making, which will limit the department's ability to make judgments on a daily basis. Therefore, it is now unable to monitor human emotions and comprehend how they can affect human conduct, desire, and ambition due to the emotional and psychological features that AI lacks. It is impersonal and unable to identify certain traits that the new hire could or might not have. AI cannot comprehend the dynamics of a team or how individuals with various personalities coexist. The ability of an HR manager to read people face-to-face cannot be replaced by technology. While AI can be used to enhance company solutions, it is not able to carry out some managerial tasks in person.

Because AI involves human programming, bias or error could be introduced. Artificial Intelligence (AI) technology "learns" from the algorithms that analyze high-quality, bias-free data for analysis; it is entirely dependent on historical data for analysis and prediction. It can absorb the prejudices of its programmer without him realizing it since it learns from the algorithm and the data it handles. When biased AI technology is used, biased outcomes could also come from it. If a business employs biased technologies, its talent acquisition process may unintentionally be skewed. If the recruiting process is ever contested or questioned, technology cannot be held accountable for the bias; thus, HR leaders and HR employees must take ethical responsibility. Programming errors may result in the inaccurate interpretation of data, the application of improper criteria for applicant sorting, and the exclusion of eligible or diverse individuals from the shortlist.

Another difficulty in utilizing AI in HRM is ensuring data availability and database compatibility. The availability of data for projections depends in part on the size of the company. Since most HR firms employ only a few thousand to several hundred people, there is a very limited amount of data accessible for observation. There aren't many observations available for some organization-wide events. Since dismissal is not a common occurrence, there are insufficient observations to make predictions about it. To make reliable data forecasts, a larger dataset and more observations are required. Another problem is incompatible databases since many organizational datasets are spread across multiple databases and require data managers to carefully combine them before cleaning.

AI cannot comprehend the organization the way a human resources specialist can. It doesn't have the same comprehensive understanding of a company as HR has. In order to have a thorough awareness of an organization's aims, values, culture, and objectives, an HR professional may conduct extensive study and research on the business. Years of experience on the job also provide the HR specialist with greater expertise and a deeper comprehension of the role. AI technology could not have the same comprehension as HR specialists. It could miss crucial links in an applicant's prior work that demonstrate their potential to be a valuable asset to the company. An HR specialist with years of expertise may recognize some links in a résumé even if it does not immediately match the rigid recruiting requirements. AI is unable to identify these relationships and may overlook anomalies that could be beneficial to the business.
CONCLUSION

The human resources industry has successfully adapted to the technological transition brought about by artificial intelligence, but there is still much work to be done. In order to fully benefit from every new development, we must always be looking for ways to overcome its challenges. The HR industry needs to take a similar approach. It is easy to conclude that data is necessary for applying artificial intelligence to organizational activities based on the many studies included in this paper. Therefore, the HR specialist needs to be very careful to ensure that accurate data is used. HRM practices now use artificial intelligence to enhance planning and decision-making.

Businesses have benefited from AI-powered applications that have increased worker productivity, enhanced overall workplace efficiency, decreased expenses, automated repetitive operations that were previously completed by people, offered intelligent data analytics, and predicted future events. In the current era of intensifying rivalry and technological advancement, businesses will only be able to thrive if they have completely embraced AI and recognized its usefulness from an early age. Future research in this topic is made more likely by the dearth of experimental and statistical studies in this domain.

The present study's analysis leads us to the conclusion that, when used appropriately, artificial intelligence (AI) in human resource management can lead to unexpected opportunities. By doing this, companies will continue to lead the way in technological innovation.

REFERENCES
