



## Application of AI on Human Resource Management: A Review

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### ABSTRACT

**Purpose** - The aim of this study is to understand how AI technology can be applied in the HRM sector based on the numerous studies. This paper reviews the application of artificial intelligence in human resource management based on the 6 basic dimensions of HRM theory.

**Design/methodology/approach** - This study employs the narrative methodology for the literature review. We have intentionally avoided the systematic methodology for the literature review, as the methodology requires specific research questions which we believe is beyond the scope of the study.

**Findings:** The paper comes out with a conclusion that AI strongly and positively affects 4 dimensions of HRM theory: recruitment, training and development of employees, managing employee performance and evaluating salaries of employees whereas the other two dimensions (human resource strategies and employee relationship management) are still in the experimental stage. Though AI is highly accepted, the challenges they face in identifying data, creating unbiased data, working on employee happiness cannot be ignored.

**Originality:** Extra research we have done showed that in HR they use different applications of AI; for example, government departments use the Oracle program in recruitment. Furthermore, the paper has underpinned some worth mentioning literature gaps which open a vast scope of further research. We believe addressing the gaps will help the industry to move towards the right direction for adopting AI technology in the HRM sector

### KEY WORDS

AI- Artificial Intelligence, HRM- Human Resource Management, IBM- International Business Machines, AISHRM- Artificial Intelligence based Strategic Human Resource Management, IDSS- Integrated Development Support System

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## 1 INTRODUCTION

Artificial intelligence (AI) is the ability of machines to mimic or enhance human intelligence, such as reasoning and acquiring knowledge through experience. The application of artificial intelligence is not just limited to computer programs, as it is now being used in a wide range of other products and services (Kumar, 2022). Artificial Intelligence and several other AI-based technologies are utilized in various sectors of firms, notably in the human resource management (HRM) sector. Artificial Intelligence and several other AI-based technologies are utilized in various sectors of firms, notably in the human resource management (HRM) sector. Human Resource professionals have introduced AI in HR where machine intelligence is used to identify, critically analyze and imitate cognitive functions of a living being and use the data available all over the world to draw significant conclusions for effective and efficient use of human resources in achieving the organizational goals and objectives. IBM (International Business Machines) officials have proven the effective use of AI in several areas of HR including employee onboarding, decision-making, mood determination of employees, and many more. For example, a new employee who joins an organization will have lots of questions unanswered and with the help of AI he/she can find an answer to all the queries/concerns in the fastest and easiest manner. Likewise, for customer service employees, AI helps them in identifying their mood swings while communicating to customers, which helps employees to correct themselves. In addition, with the help of data collected previously, AI can help employees to create their career ladder without the assistance of any humans (Ahmed, 2018).

One of the main strategic objectives of employing artificial intelligence in HRM is to attract and train people for upcoming jobs enabled by AI.

AI is progressively displacing conventional work in several industries (Jaiswal et al., 2022). Many parts of traditional personnel management will significantly alter if the trends continue. In the future, a human resource manager may manage both human and artificial intelligence as labor sources. Some industries will experience a paradigm change under these elements. According to Sakka et al. (2022) for a long time, it was believed that although the technology was killing certain professions, it was also generating new and better ones.

Businesses have found that using mechanical technology, artificial intelligence, and human-made reasoning may replace humans and increase accuracy, profitability, and effectiveness at work indicates that about 50% of the tasks that people do in the workplace today might be automated, usually using already-available digital and artificial intelligence (AI) technology (Olan et al., 2022). The ethical analysis addresses the nature of the job and, on a larger scale, the kind of society in which we must all live and the role that automation will play (Tong et al., 2021).

Tiwari et al. (2021) indicated in their research that AI impacts both innovation and ease of use positively. The "AISHRM" conceptual model, which demonstrates support for "Artificial Intelligence based Strategic Human Resource Management for industry 4.0," was proposed in a study by Samarasinghe & Medis (2020). A new revolution in industry has been brought about by artificial intelligence, also called industry 4.0. Samarasinghe & Medis (2020) also emphasized that machines will be doing jobs which humans used to do, aiming to achieve more efficiency and accuracy in these jobs. Claiming that with this change, organizations will need to focus on strategic human resources management because human capital is going to have more value as an asset in industry 4.0, therefore creating a sustainable competitive advantage for organizations through human capital, AI will be the fuel for the industry 4.0 with machines replacing the majority of the labor force. The authors proposed that artificial intelligence can help solve human resource problems in industry 4.0. It can also help in recruitment, training, ageing and cost-related issues.

Shettigar et al. (2021) discussed how social strategic planning would be integrated into its prospective Artificial Intelligence proposal in six dimensions of HRM. However, developing a conceptual understanding of advanced intellectual ability (AI) can help human resource management adopt it. Furthermore, Sakka et al. (2022b) in their research explored that AI is implemented in various sectors in different forms to help the employees improve their performance and the HRM to manage human skills and enhance the experience of the employees, reduce employee's turnover and help to build a strong management team in the workplace. Employees are an essential asset for any organization in a service-based economy where the talent acquisition, training and performance appraisal is important for a company's profit and sustainability. In recent days AI technology can help increase the information process of the HR team and it can scan, read, and assess the applications for the recruiting decision. AI also plays a vital role to improve the talent retention, can evaluate performance of the employees for the appraisal and finding hazards in the workplace and the cost-benefit analysis, which increase active engagement of the workers.

According to a series of recent studies, Jia et al. (2018), the 6 basic dimensions of HRM theory which are conceptual framework of AI application in HRM includes: planning human resource strategies, recruitment, training and developing employees, managing employee performance, evaluating salaries, and managing employee relationships. Moreover, all of them are related and connected with the clear understanding of AI technology applications in HR.

This review will focus on the application of artificial intelligence in human resource management based on the 6 basic dimensions of HRM theory cited in recent and up-to-date scholarly articles. The publications were all released in the past few years so that the information can be considered reliable, recent, and relevant. The aim of this study is to understand how AI technology can be applied in the HRM sector based on the numerous studies.

## 2 RESEARCH METHODOLOGY

This study employs the narrative methodology for the literature review. Narrative methodology is used to recognize and summarize what has already been published and finding new study areas that haven't been explored without duplications (Cronin et al., n.d.; Derish and Annesley, 2011). We have intentionally avoided the systematic methodology for the literature review, as the methodology requires specific research questions which we believe is beyond the scope of the study. The broad nature of the study makes the narrative methodology the best approach. Furthermore, as we do not employ any quantitative measurements which are required for a systematic approach, we believe, a narrative approach will not go against the industry norm (Rother, 2007).

As of present, there is no agreement on the typical format of a narrative methodology. We have employed the IMRAD (Introduction, Methods, Results, Discussion) format which is the most favored one (Ferrari, 2015). We do not employ any classification of the cited papers in the study as the methodology do not necessarily call for any classification. All the reviewed papers are cited at the end of the text in the references section.

## 3 RESULTS AND DISCUSSION

We have addressed some advantages for AI in Samarasinghe & Medis (2020) research, where the researchers explained that creating competitive advantage for the human resources sector lies in activating artificial intelligence within the sector. Artificial intelligence will contribute to identify the right position for the right person. It is an easy process according to the article. Artificial intelligence can save a lot of costs for employers and can also guarantee high additional benefits. In the presence of huge employee's data within the sector, artificial intelligence will analyze these data in a simpler and faster way than individuals do. This may be one of the greatest achievements of artificial intelligence system within the sector. The artificial intelligence system will also learn human behavior patterns to contribute to determining the appropriate jobs for specific behavior patterns. The article also refers to the issue of maintaining these machines, which will not be expensive in light of the cost reduction causes by the artificial intelligence system. It will also be necessary to carry out periodic updates to the system to ensure that it is up-to-date and to fix errors that have been discovered. Finally, the article explained that in this way the sector will be able to create a competitive advantage which makes it capable to compete within the labor market. Hmoud & Laszlo (2019) in their study tried to analyze the effects that the implementation of Artificial Intelligence would have on HR recruitment and selection function. They also looked into how AI would impact the job of recruiters, in addition to the role that leaders would play. The authors concluded that AI would significantly improve the recruitment and selection process since it would optimize repetition in activities like application screening. AI would also help reduce bias and enhance recruitment. Qamar et al. (2021) aimed to uncover the implications related to applying Artificial Intelligence technology to HR management practices by reviewing around 59 journal articles to determine the extent to which AI has impacted HR functions. The authors found that AI had significantly positive impacts on HR functions. Furthermore, the authors presented a concept map to further prove how AI can simplify the process of making decisions in HR sector.

Moreover, Tariq & Abonamah (2021) in their paper stated that Artificial Intelligence support the organization needs in terms of employee benefits that have a significant role on the engagement of employees physically and emotionally, which can be measured through an online survey system in order to identify the employees' needs. Artificial intelligence has been proved on the effectiveness of recruitment screening process in selecting dependable candidates on advanced technology. Implementing IDSS (Integrated Development Support System) system along with KDD (knowledge discovery in database) database for an important decision-making process by the Human Resources management. For a successful AI implementation, a strategic framework needs to be followed in the organization such as understanding and alignment, change management and governance, capabilities, and skill development and lastly the integration and deployment. Hmoud (2021) tried to find the effects that AI has on certain HR functions,

particularly concerning the HR domain's views on AI implementation. The author interviewed 186 HR professionals who are part of the Jordanian HRM Association. The author discovered that, for AI adoption to be successful, the organization must garner the support of the top managers. Additionally, the interviews showed that HR professionals view AI adoption in a positive light

Employment of AI is not only found in Human Resources Management, but also can be found in the healthcare and energy sectors. Almarashda et al. (2021) mentioned in their research that energy in the United Arab Emirates is considered one of the main fundamentals for economic growth and production, which mainly relies on natural petroleum resources such as oil and gas. The adoption of Artificial Intelligence in the energy industry projects in the United Arab Emirates has a significant role in Human Resources management and technology elements in the area of cost reduction, increase in revenue, fewer manpower workloads, and providing an efficient and well-organized service. On the other hand, a specialized and directed person is also recommended to provide support in case of encountering any sort of difficulties and challenges with the AI technology. In addition, artificial intelligence has played a major role in health. Like the other organizations, the government of UAE has also decided to increase the implementation of AI technology in their health sectors for CSF (Cerebrospinal fluid) categories as an ETAM (Employés, Techniciens et Agents de Maîtrise (French)) for their success. It can improve the efficiency of the diagnostic process as well as the surgeries and take care of the patients with ensuring the patient data and many more things. Before the implementation of AI in managerial factors, it is important to ensure the adoption of this technology has a positive influence on PU and PEU in healthcare setting by medical staff, which is directly related with BIU, the key CSF of successful implementation of AI. The UAE government is providing managerial and operational support for TAM such as training, evaluation between the requirements of desired services which assist the stakeholders and research methodology also to achieve the success after implementation of the AI system in 13 health centers in Dubai (Alhashmi et al., 2019).

### **3.1 EFFECTIVENESS OF AI IN HRM**

#### *3.1.1 HUMAN RESOURCE STRATEGIES*

Human resources strategic planning is the point where human resource management starts. It assists the company with guessing the needs of the workers in the upcoming future and with the personnel qualities throughout the strategic plan. Artificial intelligence (AI) is a predominant technology that continues to influence organizations' performance and key processes in the digital era. Integrating AI ensures that firms achieve high levels of productivity and efficiency (Olan et al., 2022). Artificial intelligence utilizes vast knowledge to enhance a firm's performance by reducing redundancies and improving resource allocation. Olan et al. (2022) argued that implementing a complementary approach assists organizations in achieving sustainable performance. The model combines knowledge sharing and artificial intelligence. Knowledge-based activities give firms a competitive advantage in the market and enable them to improve performance levels through encouraging innovation, employee empowerment, training, and aligning the underpinning strategies or key performance indicators. AI-driven technologies ensure that organizations perform better in three key areas: customer service, finances, and operational strategy. According to Sullivan & Wamba (2022), artificial intelligence remains a foundational pillar of organizational performance (OP). With uncertain market conditions, organizations must implement strategies that ensure their survival. Sullivan & Wamba (2022) defined artificial intelligence as a machine's ability to perform human-related jobs successfully. Based on this article, artificial intelligence ensures that firms navigate disruptions within the business environment. AI is linked with enhanced organizational performance and a firm's resilience. While operating in a volatile market, a business can employ AI technologies to conduct data analysis, establish relationships, forecasting, and enhance decision-making arising from disruptions. AI enables firms to reconfigure resources and process data to positively influence their performance (Sullivan and Wamba, 2022). Organizations develop adaptability influencing the essential operations and the firm's survival. This way, artificial intelligence provides crucial insights toward increasing performance.

### 3.1.2 EMPLOYEE RELATIONSHIP MANAGEMENT

Human relations management will help the company manage the personnel and create a rotation of rational allocation in human resources management (Noe et al., 2006). Applying AI to the company will help upgrade the managers to improve the company's efficiency. Sari et al. (2020) examined whether artificial intelligence technology tools and programs can assist management to identify and address intangible employees' behaviors like employee's engagement and how to improve it. Subsequently, it is considered one of the most significant factors that is directly tied to productivity. The study used an interview approach to determine employee engagement across all employee's level at SML (security market line) before and after the implementation/deployment of AI-technologies. According to the study's finding, AI technologies can assist management beyond what they have expected by not just evaluating employee's engagement level but also anticipating their behaviors and attitudes and solving the issue with an effective and accurate approach earlier on before it leads to disengagement and stress. With the incorporation of AI technologies, this creates opportunities for businesses to have a proactive approach to retaining talent and to improve business enquiries that were previously difficult to obtain.

### 3.1.3 RECRUITMENT

Artificial Intelligence have helped replaced the traditional hiring and recruitment process with computer-aided technologies. The use of AI applications for face recognition in recruitment helps HR professionals to identify and select the right candidate from the pool of candidates. The facial recognition helps in identifying some of the key soft skills of the candidates. In addition, it also helps in identifying how far the candidate is matching the job requirements. Furthermore, the bias from the recruiter's side can also be prevented for the candidates, as there is a validation done by the Artificial Intelligence Applications. Several studies are still going-on to bridge the gap between theory and practice of studying the facial recognitions of different groups of people, as the data-base of AI has to be kept updated with much accurate and valid data. For example, the facial recognition of amazon had huge gaps which lead it to be not very successful (Nawaz, 2020). To inspect the utilization of Artificial Intelligence in the Global South's HR management practices, Kshetri (2021) utilized numerous types of AI tools and case studies for the purpose of several HR functions such as recruitment, retainment, training, and development. The author found that the implementation of AI could aid organizations in boosting the effectiveness and efficiency of HR functions, like selection and recruitment. Additionally, AI can help lower the occurrence of biases and nepotism during the recruitment process. Since AI is a relatively new topic, and not all organizations have access to it, its effect on HR practices is limited to specific regions of the world. Upadhyay & Khandelwal (2018) tried to evaluate how AI is applied to the process of hiring and what its implications are. The authors determined a strategic shift due to the integration of AI into the hiring process. By implementing AI technology into the hiring process, organizations have noticed a significant rise in the efficiency of their operations as well as the selection of top talent.

### 3.1.4 TRAINING AND DEVELOPMENT

ALam (2020) in their research studies a sample of 100 employees from the Municipality and Planning department in Ajman to answer questions regarding the future of HRM functions with the implementation of AI techniques in its practices. The employees answered a questionnaire about various HRM functions such as polarization, selection, recruitment, training, and performance improvement and how AI can impact them. The findings of the study concluded that the future of HRM in fact would involve AI and recommends that HR departments start preparing their employees and training on the usage of AI as well as introduce subjects dealing with AI at all levels of study.

### 3.1.5 MANAGING EMPLOYEE PERFORMANCE

In the modern age, many organizations are following trends and incorporating AI into their operations. Singh & Shaurya (2021) attempted to discover how Artificial Intelligence effects Human Resource practices in UAE-based organizations. The authors used mixed methods to test their re-search question, which included surveys and interviews. Individuals who were questioned were either HR or AI professionals. The study concluded that the incorporation of AI technology into HR practices increased the efficiency of HR practices, improved the appraisal of performance, and enhanced training and development initiatives. Consequently, the smooth transition of HR functions into the digital age will heavily depend on AI, as well as the readiness of employees.

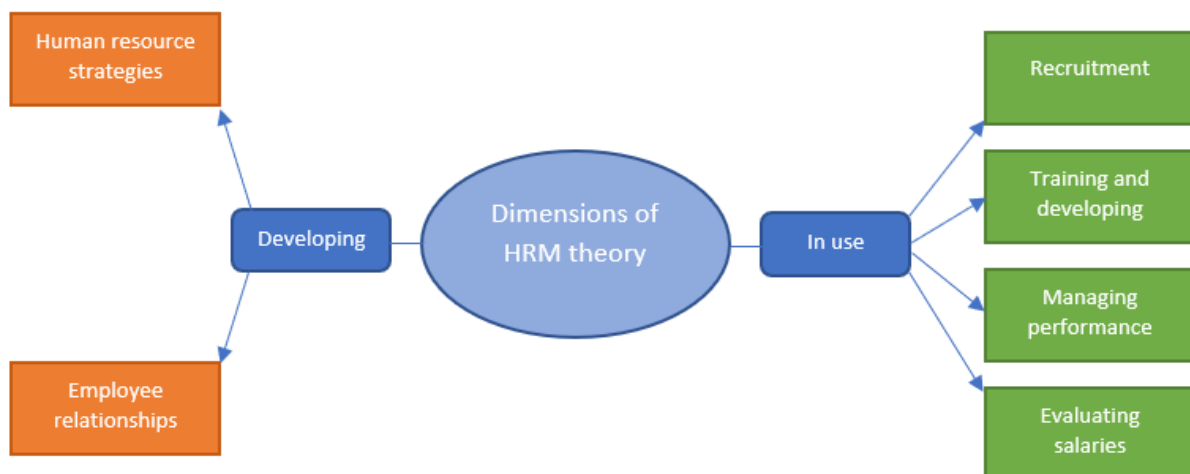
### 3.1.6 SALARY EVALUATION

With the help of AI firms can easily evaluate employee performance and create a more fair and efficient compensation strategy. The compensation adjustment should be strategically oriented and flexible enough to accommodate changes in the enterprise's strategic purpose. Artificial intelligence allows firm to examine the external and internal balance of the enterprise's compensation, complete the salary survey and post evaluation, and construct the ideal salary structure to define the grade and scope of the compensation (Jiang et al., 2018). An intelligent incentive system can be created by combining data mining technology with the performance management process; Apply-ing neural network technology allows for the creation of an intelligent salary appraisal system (Jia et al., 2018). AI applications can help to make the management of remuneration more equitable. A supervised artificial intelligence technique called BP neural networks is based on biology, neurology, psychology, and statistics. It can create a regular computational model, replicate the nervous system of the human brain, and combine numerous neural network nodes. With the help of big data, BP neural network system may be utilized to create an intelligent decision support system to create a fair compensation evaluation system (Richard and Lippmann, 1991).

## 3.2 CHALLENGES AND DIFFICULTIES

After reviewing the studies in the field, we have found that AI is predominantly used in the following 4 dimensions of HRM theory: recruitment, training and development of employees, managing employee performance and evaluating salaries of employees. Employment of AI in the other two dimensions (human resource strategies and employee relationship management) are still in the experimental phase and only in a handful of tech companies.

Fig 1. Dimensions of HRM theory



source: Authors' evaluation

### 3.2.1 KNOWLEDGE MANAGEMENT

During some research, there were some problems encountered. Tambe et al. (2019) shows that although they were a lot of progress, most companies face challenge while identifying data in HR. Artificial intelligence is the application of computer technology to perform tasks for which human intelligence would usually be required, such as decision-making. The first concept that may be applied to solving problems at various phases of the AI Lifecycle is causal reasoning. Lack of concepts of causality makes it far more challenging to produce the datasets required for analysis since the development of algorithms depends on association rather than causation. Fairness and explainability difficulties are considerably aided by causal reasoning. It is ideal to improve AI-management in HR on both counts, those of efficiency and appropriateness, the need for efficiency and concerns about fairness do not always align. A suggested solution for this were found in (Merlin.P & Jayam.R, 2018) research in which their studies concluded that increasing pressure on HR leaders is caused by AI's impact on hiring decisions, performance prediction, automation of manual tasks. HR can use AI to gain insight into best practices, associated issues, and effective actions using historical data and predictive analytics. It is highly likely that HR will work in collaboration with machines in the future. The program will analyze the performance and turnover rates of the employees, learn about their experience and skills, and shortlist the strongest candidates. Using AI, every employee's requirement can be broken down and predicted. The process can identify individual preferences and determine who needs a raise or who is not satisfied with the work-life balance.

### 3.2.2 ETHICAL CHALLENGES TO AI

Vrontis et al. (2022) in their study tried to organize existing research on Artificial Intelligence, including the benefits and drawbacks it poses for HR management. The authors concluded that AI's novel approach could boost organizational and employee performance, as well as other HR functions, but also presents some ethical issues. According to Tursunbayeva et al. (2022) there may be ethical issues and privacy and autonomy hazards when using AI to analyze and visualize complicated data from the entire workforce or from specific teams, employees, and divisions to provide actionable insights. Qamar et al. (2021) gives a clear insight as to how biases and unfairness can creep in when AI is used for tasks like assessing complex performance data, creating individualized training recommendations, projecting future performance, and determining employee satisfaction. For instance, when choosing employment candidates, the expert system may be prejudiced based on the expertise of the experts, which may further lead to the provision of preferences for a particular gender, certain talents, backgrounds, ethnic groupings, etc. Due to the inclusion of expert judgment as a fuzzy logic implementation input, bias may be introduced into HR processes like hiring candidate screening and performance evaluation. In addition, fuzzy data can be used to train ANNs, which could perpetuate a cycle of biases in HR procedures. Empirically, such biasness has already been found in one of the world's most valuable tech companies. In order to locate the best candidates who would meet the job profile, Amazon Inc. formed a team in 2014 to develop a tool to examine resumes of job applicants. This tool made use of machine learning (ML) and natural language processing (NLP) to identify the top candidates. Once put into practice, this software would employ advanced AI algorithms to identify commonalities among resumes submitted for screening and learn essential qualities from those of successful job seekers. By the end of 2014, many employees in the organization were using this experimental technology, and few greatly relied on it because it was time-saving and efficient. The issue was brought to the company's attention in 2015, when it was discovered that ratings for technical positions like software developers and architects are not conducted in a gender-neutral manner. In order to find the cause, the business then assigned one of its engineers to look into it. Engineers spent a lot of time investigating the issue and came to the conclusion that the data used to train the AI system was biased since it primarily included the resumes of male employees, which was in line with the then-prevailing pattern of male supremacy in the business and the tech sector. The algorithms developed an association that de-valued resumes containing the word "women's," as in "women's chess club captain,"

as a result of such unintentionally biased training data. However, it was determined that such an AI system in the future might conceivably build a system of sorting candidates that could be somewhat discriminating. As a result of these discoveries, Amazon revised its algorithms to be neutral in such situation.

### 3.2.3 EMPLOYEE HAPPINESS

Vrontis et al. (2022) mentions that the responses and reactions of employees to the change in the organizational role of HRM brought about by technology is another understudied subject that is ripe for further investigation. The use of intelligent automation in HRM can be helped or hindered by considering potential cross-national variations and similarities in employee behavior. Moreover, it is becoming more and more obvious that robots will take over some human employment. However, the employment of robots is expected to have a considerable impact on managers and supervisors in addition to those who are displaced. Therefore, it is absolutely necessary to get a clear understanding of how AI implementation will impact employee happiness in the workspace. Even though studies indicate that HRM officials and managers are optimistic about the application of AI in human resource management, it is still unclear how the millions of employees would react to such paradigm shift in the organizational structure.

Other challenges were found in Ahmed (2021) paper assessing that activating artificial intelligence with human resources sector would contribute to facilitate and simplify the work system, but it is not possible to rely completely on technology in the human resources sector. One of the biggest challenges facing the human resources sector is discrimination between employees and employers. The article explained that it may be difficult as for technology to consider the social, cultural, and religious matters of employees, this drift may unintentionally cause discrimination. Ahmed (2018) in their study tried to shed light on the technological advancements in AI and how they have impacted HR management. The author did not specify their methodology, but it seems to be a literature review. The author concluded that while AI has tremendously positive impacts on HR, measures must be taken to ensure bias is avoided. Moreover, the author noted that the absence of a human touch could lead to problems in processes like recruitment. Another challenge is maintaining employee data. Employers should not use these data for any illegal purposes. Finally, the paper confirmed that the activation of artificial intelligence in human resources contributes to accelerate and simplify the work and may also contribute to justice and the emergence of more accurate results, but on the other hand, the challenges posed must be considered so that the results are not counterproductive.

While the articles above have discussed many aspects of implementing AI in HRM practices, very few of them talked in depth about AI ethics. Some articles highlight the importance of doing regular reliability tests are necessary to validate the data extracted from AI, however, ethically implementing AI requires more than that. It is important to educate the users on AI ethics prior to implementation and highlight the seriousness of AI bias. In an HRM field, AI bias could lead to such drastic and devastating discriminatory outcomes if not implemented with caution.

## 4 GAPS IN THE LITERATURES

Artificial intelligence is a critical technology that continues to affect organizational performance. Most organizations today leverage artificial in different processes. Even though the idea of artificial intelligence is not new, its acceptance in society has been relatively new. Nevertheless, further studies and understanding of what is known, yet to be known, and future research directions are required. Moreover, it is indispensable to study the outcomes of artificial intelligence on employees, including different behaviors and norms that arise mainly from using artificial intelligence in HRM. On another note, it seems like research is still concluding on the positive outcome of AI application, however, we found some research gaps and consequently future research potentials. These can be summarized as:

1. The negative consequences on specific categories like (special needs people and how the world will react in crises of discontinuation of AI) as an example.
2. What are the policies that HR should start working on to improve the readiness in AI?



3. The ethical and privacy issues that may arise from the employment of AI in HRM are not extensively researched.
4. We found no studies on how AI and machine learning technology can be used in the organizational level to train and develop managerial skills. In fact, when it comes to AI, managerial decisions and structure are left to the human discretion.

## 5 CONCLUSION

Despite the need for further research, as a group we have collected 32 articles and found that most of them were showing an advantage of AI in HRM sector, and how it will positively and dynamically will enhance the sector toward efficiency and productivity. Extra research we have done showed that in HR they use different applications of AI; for example, government departments use the Oracle program in recruitment. This application helped the recruitment department as well as the job applicant. The application process has become easy because of the forms used, as well as the company's easy access to applicants because the data is preserved, and they can choose from among the experiences and those who have talents. Also, reports have been issued indicating that artificial intelligence techniques can evaluate indicators that indicate employee success, through which the company can retain qualified employees and train employees who do not have experience. According to the literature review, all the articles found that Artificial Intelligence had a positive impact on Human Resource Management functions, namely selection, recruitment, training, and development. (Qamar et al. (2021); Tursunbayeva et al. (2022); Vrontis et al. (2022) were the only ones who considered the ethical concerns of implementing AI in the HR domain. Additionally, Hmoud & Laszlo (2019); Kshetri (2021) both agreed that AI could help reduce nepotism and bias in the selection and recruitment functions of HRM. Ahmed (2018) was the only one who considered that the absence of human touch could lead to problems in the recruitment process. In conclusion, AI can heavily improve various HRM functions, which would enhance the efficiency and effectiveness of organizational performance.

However, we have also found that Tambe et al. (2019) article showed some problems of AI that HRM might face such as: (Inability to understand causation and fairness, as well as the ability to explain difficulties (and we connected it with some solutions in Merlin. & Jayam. (2018) article. The interesting thing was that we didn't address any solutions in the articles about the disadvantages of AI that were mentioned in Ahmed (2019) articles where her study indicated that how AI can cause discrimination between employees. Also, we find two articles are different, because they used artificial intelligence in another field, such as the article of Almarashda et al. (2021) which were talking about AI in health sector, and the article of Alhashmi et al. (2019) that talked about energy sector.

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