

## ARTIFICIAL INTELLIGENCE AND AUTOMATION IN HR

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### ABSTRACT

*Through process automation, improved decision-making, and better workforce management, artificial intelligence (AI) is transforming human resource management (HRM). This study examines how AI is revolutionizing important HR tasks including learning and development, performance management, employee engagement, talent acquisition, and HR analytics. Chatbots, machine learning algorithms, and predictive analytics are examples of AI-driven solutions that are changing hiring, individualized training, and workforce planning. AI improves productivity and accuracy, but it also raises issues with worker adaptation, data protection, and ethics. This paper emphasizes the necessity for a balanced strategy that incorporates AI with human-centric HR practices by highlighting the advantages, drawbacks, and potential future implications of AI in HRM.*

### INTRODUCTION

Over the past couple decades, automation and artificial intelligence (AI) technologies have advanced quickly. The capacity of robots to carry out activities that call for human intellect is known as artificial intelligence (AI), and it is currently being used in many different industries. Artificial intelligence (AI) is utilized in human resources (HR) management to expedite administrative procedures that traditionally required a significant amount of human effort. For instance, data administration, automated scheduling, and staff training via adaptive learning platforms may now be handled by AI-based systems. Nearly 56% of businesses have implemented AI in some area of their operations, including human resources, according to a McKinsey & Company analysis from 2021. According to the survey, businesses that use AI may boost operational efficiency by as much as 40%, particularly by automating administrative and repetitive work. Additionally, businesses can swiftly adjust to the ever-more complicated and dynamic shifts in the global labor market thanks to this technology. AI technology is anticipated to increase the quality of human resource management in the HR sector, from hiring to employee performance evaluation, in addition to streamlining procedures. With the development of AI, HR's responsibilities have expanded beyond administrative tasks like processing payroll, keeping track of attendance, and filling out recruiting forms by hand. By automating these duties, AI is transforming the HR environment and allowing HR to concentrate on more strategic objectives. Developing corporate culture, managing talent, and enhancing

employee engagement and happiness are some of these strategic objectives that directly affect productivity and business sustainability.

This study looks at how employee engagement and operational effectiveness are affected when artificial intelligence (AI) is used in human resource management (HR). AI frees up HR staff to concentrate on strategic projects like talent management and culture development by automating processes like data management, scheduling, and payroll. Adoption of AI increases operational efficiency by 30% and promotes employee engagement through tailored experiences and real-time feedback, according to study using a descriptive qualitative methodology and literature analysis. AI also facilitates improved strategic decision-making through the study of predicted employee data. Employee opposition and the requirement for HR retraining are obstacles, nevertheless. Companies should create supporting policies that improve engagement and well-being through AI integration and improve internal communication for the best outcomes. This systematic review synthesizes the existing literature on the impact of artificial intelligence (AI) and automation on Human Resource Development (HRD) practices and outcomes. The study explores how AI and automation affect HRD, highlighting specific HRD processes affected and their influence on outcomes. A comprehensive search was conducted across academic databases, HRD journals, and conference proceedings, resulting in a selection of relevant studies. The findings were analyzed through a narrative synthesis, with subgroup analyses based on specific HRD processes. The review provides insights into AI and automation implications for HRD researchers and practitioners. It also identifies research gaps and future directions.

### LITERATURE SURVEY

According to Heene (1997), the competence-based model is one type of HR tool that enables businesses to successfully hire, screen, and train workers in order to accomplish their workforce goals. According to G. Liddon (2006), the competence model describes knowledge, skills, abilities, and behaviors. Certain skills are required to do any kind of task or responsibility assigned inside the company. To achieve an effective and productive output, organizations might use a competence-based approach that predicts the key capabilities and accordingly creates the corporate strategy. These techniques

are used to determine how a company model functions in addition to simplifying recruiting and selection, assessment, performance management, training and development, and employee engagement tactics for their professional advancement. This paper describes how artificial intelligence is influencing human resource management, according to Murgai (2018). Examining the use and scope of AI in various HRM functions, such as hiring, selection, performance evaluations, and employee retention, was the aim of this article. The researcher used secondary data to achieve the objectives. This study looks at how employee engagement and operational effectiveness are affected when artificial intelligence (AI) is used in human resource management (HR). AI frees up HR staff to concentrate on strategic projects like talent management and culture development by automating processes like data management, scheduling, and payroll. Adoption of AI increases operational efficiency by 30% and promotes employee engagement through tailored experiences and real-time feedback, according to study using a descriptive qualitative methodology and literature analysis. AI also facilitates improved strategic decision-making through the study of predicted employee data. Employee opposition and the requirement for HR retraining are obstacles, nevertheless. Companies should develop supporting policies that improve engagement and well-being through AI integration and improve internal communication for best outcomes. By improving decision-making, increasing efficiency, and simplifying procedures, "Artificial Intelligence (AI)" and "automation" are rapidly changing the field of "Human Resources (HR)." AI-driven tools like "Applicant Tracking Systems (ATS)," "chatbots," and "predictive analytics" are changing how businesses recruit and manage talent. This paper examines the integration of AI and its automation in various HR functions, including "recruitment, employee onboarding, performance management, and learning and development." Employee engagement and development are being accelerated by individualized learning platforms and automated onboarding methods. Furthermore, AI improves corporate agility by offering "continuous feedback," optimizing workforce planning, and forecasting staff attrition. But while these innovations transform HR, they also bring up significant issues related to "bias, ethical use, privacy, and the future of the workforce." While addressing the difficulties associated with its implementation, this article seeks to give an overview of how AI and its automation are improving HR processes. The use of "Artificial Intelligence (AI)" and "automation" in the

dynamic field of "Human Resources (HR)" is causing major shifts in how businesses handle their personnel. The revolutionary effects of these technologies on important HR tasks including "recruitment, employee onboarding, performance management, learning and development, and workforce planning" are examined in this article. The rapidly developing fields of "automation" and "Artificial Intelligence (AI)" are transforming businesses all over the world, and "human resources (HR)" is no exception. HR has historically been seen as a human-centered discipline that focuses on managing individuals, procedures, and corporate culture. However, HR operations are undergoing a dramatic change as a result of the emergence of AI and automation technologies, which are changing how businesses find, hire, and develop people. AI in HR refers to the application of intelligent systems with learning, reasoning, and decision-making capabilities to optimize and expedite a variety of HR procedures. On the other side, automation is the use of technology to carry out laborious and repetitive jobs with little assistance from humans. When combined, these technologies are increasing productivity, decreasing human error, improving decision-making, and freeing up HR experts to work on more strategic and innovative projects. Beyond hiring, AI and automation are improving other HR tasks including "workforce planning," "performance management," "learning and development," and "employee onboarding." These technologies can forecast employee attrition, provide real-time performance feedback, and offer customized onboarding experiences—all of which support better decision-making and increased employee engagement. However, there are difficulties in incorporating automation and AI into HR. The ethical issues raised by worries about "algorithmic bias," "data privacy," and the possible "displacement of jobs" as a result of automation need to be addressed. Furthermore, even if AI can improve HR procedures, human supervision is still necessary to guarantee equity, inclusiveness, and the humane treatment of workers.

The purpose of this essay is to examine how automation and artificial intelligence are changing HR procedures, as well as the advantages and disadvantages of these technologies. This research will emphasize how automation and artificial intelligence will shape the nature of work in the future by analyzing important HR activities. It will also address how HR professionals may use these tools while upholding moral and human-centered standards. Formulation of Problems The advancement of automation technology and artificial intelligence

(AI) in human resource management (HR) has altered how HR teams operate, particularly by reorienting their attention from repetitive activities to strategic projects that are more beneficial to the organization (Hafidz, 2023). In the past, HR departments frequently spent a lot of time managing administrative duties like payroll processing, interview scheduling, and personnel data maintenance. But with the development of AI and automation, these duties can now be carried out more correctly and effectively by automated systems, freeing up HR personnel to focus more on long-term objectives like succession planning, enhancing employee engagement, and creating corporate culture. Employee engagement is significantly impacted by the application of AI in HR procedures. With employee data analysis that can forecast training requirements, career advancement, and personal preferences, AI technology may offer a more tailored and focused work experience. Additionally, AI expedites the process of evaluating employee performance and offers real-time feedback, increasing employee engagement and corporate support. However, there are drawbacks to integrating AI in HR, including the possibility of an over-reliance on automated processes and employee aversion to new technology. As a result, it's critical to comprehend how AI might be used to enhance employee engagement and recognize implementation possibilities and obstacles.

### **THEORETICAL REVIEW**

AI and Automation in HR Artificial intelligence (AI) in human resource management (HR) is the application of machine learning techniques, natural language processing (NLP), and predictive data analysis to enhance and automate different HR procedures. AI in HR is intended to reduce manual administrative tasks and offer more in-depth data-driven insights for strategic decision-making. AI is typically utilized in HR to carry out tasks like succession planning, employee behavior analysis, and candidate screening using keyword matching algorithms. According to Gartner (2023), 43% of HR directors have investigated or used AI to increase operational effectiveness. As a result, AI lets HR concentrate on duties that are more strategic and have a bigger influence on the company in addition to automating time-consuming chores. Additionally, AI makes data analysis procedures like employee performance pattern analysis and turnover prediction considerably quicker and more thorough. HR departments may make quicker and better choices on talent retention and employee growth by utilizing AI-based predictive models. According to Forrester (2023), AI technology

may increase total HR productivity by cutting the time needed to make important HR decisions by thirty percent (Dodani, 2024). In HR, automation is the use of technology to carry out regular operations that were previously handled manually, including as hiring, performance reviews, training, and employee engagement. AI makes it possible to employ more advanced Applicant Tracking Systems (ATS) for hiring, where algorithms can automatically evaluate thousands of resumes and match them to job criteria based on pertinent keywords, experience, and abilities.

### **RESEARCH METHODOLOGY**

This study employs a qualitative descriptive methodology, which uses a literature review to give a detailed account of the topic being studied. The goal of qualitative descriptive approaches is to investigate and comprehend the significance of AI application in HR from both academic and practical viewpoints, as well as its effects on employee engagement and HR team performance. When the goal of the study is to characterize a phenomena by in-depth data collection from pertinent textual sources, qualitative descriptive methods are frequently employed (Subakti et al., 2020). Through the analysis of widely accessible literature, such as books, journal articles, and industry reports, desk studies enable researchers to gather data without the requirement for actual field study. This is crucial for study on technology advancements like artificial intelligence (AI), as extensive and varied data sources are essential for comprehending how AI affects human resource management. Creswell (2009) asserts that a literature review is a useful method in research that concentrates on current theory or practice and gives researchers the chance to examine the findings of other researchers' studies.

It also helps to avoid unnecessary repetition of research and allows for a more in-depth analysis of topics that have been widely covered in the scientific literature. Method of Searching To find pertinent research on AI and automation in HRD, a thorough search strategy was created. Key phrases associated with AI, automation, and HRD were paired with the Boolean operators "AND" and "OR" to search databases including Semantic Scholar, Google Scholar, Scopus, and Web of Science. Among the search phrases were:

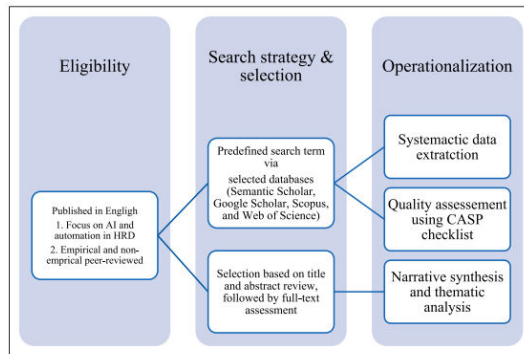


Figure 1. Outline of the review process. Source: Author.

"artificial intelligence," "AI," "machine learning," "automation," and "human resource development," "talent management," "workforce upskilling," "employee development," "workforce development," "knowledge management," "workforce planning," or "learning and development." The titles, abstracts, and keywords of papers and other scholarly materials released between 1997 and the first quarter of 2023 were the main focus of the search. To find further research that satisfied the inclusion requirements, the reference lists of pertinent papers were also examined. This iterative search approach made sure that as many pertinent papers as possible were taken into account and served to optimize the review's comprehensiveness.

## RESULTS

Several important insights on the function of automation and AI in HRD are provided by the synthesis of studies. The findings imply that automation and artificial intelligence may significantly enhance HRD procedures and results. This might completely change how businesses handle their human resources. The results, however, also emphasize how crucial it is to take into account the contextual elements that might affect how successful AI and automation applications are. They also draw attention to the possible drawbacks that may result from its application.

The patterns found in the literature review are further examined in the sections that follow. The applications, context, methods, and results of AI and automation in HRD are the four main topics covered in these sections. The four (4) research questions that form the basis of this study are the focus of this critical critique. The goal is to improve our understanding of the complex relationships between automation, AI, and HRD. Additionally, it seeks to identify any gaps in the existing literature and identify areas where further study might lead to important and worthwhile breakthroughs.

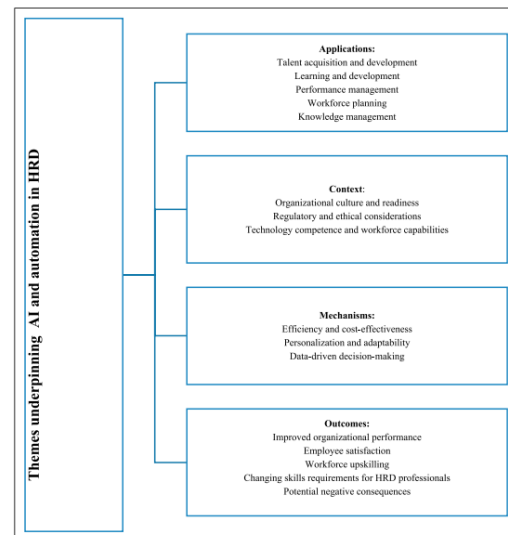


Figure 2. Key themes and analytical focus. Source: Author.

## Conclusion

**OUTCOMES AND TALK Recent Case Study: Indonesian Companies' Use of AI in HR** In Indonesia, the use of AI in HR has begun to gain popularity in recent years. Many big businesses have effectively implemented AI to boost HR productivity, enhance hiring procedures, boost employee engagement, and boost HR team productivity. Here are some instances of Indonesian businesses that have effectively used AI into HR and its results. 1. Gojek: Talent Management and Recruitment Automation Gojek, one of Indonesia's biggest digital firms, has incorporated AI into its HR procedures, particularly with regard to hiring. Gojek automatically processes thousands of job applications, screens applicants according to predetermined criteria, and makes suggestions to hiring managers using AI and machine learning (Kurnianingrum et al., 2021). In order to match candidates with the demands of the business, the system also examines candidate behavior patterns based on past data, including job experience and skill sets. Gojek claims that as a consequence, the hiring process has accelerated, the time it takes to pick applicants has decreased, and the caliber of individuals hired has improved. AI automates administrative duties like initial applicant screening, freeing up HR personnel to concentrate on creating more comprehensive and strategic talent management programs. The usage of AI also improves and personalizes the onboarding process for new hires, giving them access to training tailored to their requirements and a better understanding of the corporate culture.

2. Telkom Indonesia: AI in Employee Development and Performance Evaluation The biggest telecom provider in Indonesia, Telkom Indonesia, has also used AI to better engage and manage its workforce. The use of AI in performance evaluation CorpU (2024) is one of

the largest applications of AI. Telkom's AI technology analyzes performance data in real-time and gives staff automated, customized performance feedback. This makes it possible for assessments to be more objective and ongoing, and it gives managers information they may utilize to better support workers' professional growth. AI is also used by Telkom in its staff development initiatives. Based on performance data, the AI system may determine training needs, suggest pertinent training courses, and even track the advancement of employee training. Because they receive prompt, tailored performance reviews and improved career development support, Telkom workers are more engaged. This helps the business retain top talent and boosts employee engagement and motivation.

3. Bank Mandiri: AI for Employee Engagement and Talent Management One of Indonesia's biggest banks, Mandiri, has used AI to enhance talent management and boost employee engagement. AI helps Bank Mandiri handle employee data more efficiently, from hiring to career management. AI is used to continuously monitor employee engagement, spot early indicators of burnout, and suggest suitable remedies, such as retraining or wellness initiatives. Furthermore, AI at Bank Mandiri makes it possible to customize each employee's work experience, including in terms of career growth and reward schemes. In addition to increasing HR operational effectiveness, this helps employees feel appreciated and supported by the business, which eventually increases employee happiness and retention. Internal studies state that with the use of AI, Bank Mandiri had a notable rise in staff engagement and a decrease in attrition rates (Zefanya Aprilia, 2024).

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