

## Research Article

# Artificial Intelligence in Human Resource Management Practices

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## Abstract.

This study discussed the value of Artificial Intelligence (AI) in Human Resource (HR) Management through the AI Capability Framework (ACF) in the Asian and Indonesian contexts. This study was a literature review conducted by collecting data from various articles and scientific journals relevant to the topics discussed. The results of the literature review showed that the use of AI in HR Management has the potential to increase the efficiency and effectiveness of the HR management process and provide added value for companies in improving their performance and competitiveness. ACF is used as a framework to measure a company's ability to implement AI in HR Management, considering policies, technology infrastructure, human resource capabilities, and organizational culture. The use of AI in HR Management can also affect decision-making in companies and has implications for company performance. Therefore, this study provided suggestions and recommendations for companies to develop AI capabilities in HR Management, such as conducting human resource training and development, strengthening technology infrastructure, and creating an organizational culture that supports the use of AI technology. In addition, this research also identified several factors that can influence the implementation of AI in HR Management, such as policy, technological, and human factors. Further research can examine these factors more deeply and how companies can overcome obstacles in implementing AI in HR Management.

**Keywords:** Artificial Intelligence, Human Resource Management, Capability Framework

## 1. Introduction

Artificial Intelligence (AI) has become a topic that is increasingly attracting attention in the world of business and management, especially in the field of Human Resource Management (HRM) [1]. AI provides the ability to automate repetitive and time-consuming HRM tasks and increases the efficiency and effectiveness of HRM processes [2]. However, the use of AI in HRM is not only about automating processes, but also about changing the way we think and do business [3]. In Asia, especially in Indonesia, the use of AI in HRM is still relatively new and has not been fully utilized. There are many challenges that need to be overcome, such as limited human resources with skills in AI, a lack of

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understanding of the potential and benefits of AI in HRM, and a lack of guidance on how to implement AI in HRM [4].

To overcome this challenge, we need a framework or framework that makes it easier for companies to adopt AI technology in HRM [5]. Therefore, this study aims to develop an AI Capability Framework for HRM that can help companies in Asia, especially in Indonesia, in adopting AI in HRM and improving their business performance. This article discusses the importance of AI in HRM, the challenges faced in implementing AI in HRM, and the development of an AI Capability Framework for HRM in Asia, especially in Indonesia. We will review more about the concepts and benefits of the AI Capability Framework, as well as how companies can implement the framework to benefit their business. Recent studies have shown that the use of AI in human resource management can help in making better decisions and reducing human bias in the process of selecting, developing and managing employees. For example, the use of machine learning algorithms in the employee selection process can increase the accuracy of predicting the performance of prospective employees [6].

Additionally, the use of AI in human resource management can assist in optimizing the allocation of human resources and increasing employee productivity [7]. They developed an AI model that could predict the optimal assignment of employees based on individual skills, experience and preferences [8]. In Indonesia, there is research conducted by Darmawan et al. (2020) who tested the effect of implementing an AI-based human resource management system on employee performance. The results of their research show that the system can improve employee performance significantly, especially in terms of productivity and efficiency [9]. However, research specifically studying the value of the AI Capability Framework in human resource management is still limited, especially in the Asian and Indonesian contexts. Therefore, this research has the potential to provide new insights and significant contributions in the field. Therefore, the lack of research that focuses on the application of artificial intelligence (AI) in human resource management (HR) in Indonesia and Asia is a research gap in this study. There are many studies on the application of AI in various fields, but research on the application of AI in HR management is still limited. The state of the art in this research is the use of the AI Capability Framework to analyze the value of AI in HR management. The AI Capability Framework is a model used to measure an organization's ability to adopt and effectively utilize artificial intelligence technologies. The use of the AI Capability Framework in the context of HR management provides an overview of how companies

can optimize the use of AI technology in their HR management. In addition, this study also analyzes the factors that influence the application of AI in HR management, such as corporate culture and socio-economic factors in Indonesia and Asia.

This research has high urgency because currently, the development of artificial intelligence (AI) technology is developing rapidly and is starting to be applied to various aspects of life, including within organizations. AI can have a major impact on human resource management, such as increasing efficiency and effectiveness in recruiting, developing employees, managing performance, and making more accurate and timely decisions. However, the implementation of AI in human resource management also has challenges and risks, such as data security, ethics, and impact on employees. Therefore, an AI Capability Framework is needed to assist organizations in developing and implementing AI in human resource management effectively and efficiently.

In addition, this research also has urgency in Indonesia because the use of AI technology in Indonesia is still relatively low and there are still many organizations that do not understand the potential and benefits of using AI in human resource management. Therefore, this research can make an important contribution in increasing the understanding and utilization of AI in human resource management in Indonesia.

## 2. Literature Reviews

Artificial Intelligence (AI) has become an important topic in the development of technology in various fields, including human resource management (HR). In recent years, companies have begun to utilize AI to increase efficiency and effectiveness in HR management, such as in recruitment, employee development, performance management and employee data management [10]. Previous studies have shown the great potential of AI in HR management [11]. For example, the use of AI in recruiting and selecting employees and it was found that this technology can help improve the efficiency and quality of the recruitment process. While the use of AI in performance management and it was found that this technology can help increase transparency, objectivity and accuracy in assessing employee performance [12].

However, even though many companies have started using AI in HR management, there are still many companies that have difficulty implementing this technology properly [13]. Several factors, such as lack of support from management, lack of technical

expertise, and lack of quality employee data, were also found to hinder the implementation of AI in HR management [14]. To address these challenges, the AI Capability Framework (ACF) can be a useful tool to assist companies in developing AI capabilities in HR management [8]. ACF provides guidelines for measuring a company's ability to implement AI in various aspects of HR management, such as recruitment, employee development, performance management, and employee data management [6].

Overall, previous studies and the use of ACF show that the use of AI in HR management can provide companies with many benefits, including increased efficiency and effectiveness, as well as better decision making. However, to successfully implement this technology successfully, companies must pay attention to the factors that influence AI implementation and use the right tools, such as ACF, to develop their AI capabilities. By using ACF, companies can identify their strengths and weaknesses in implementing AI in HR management and develop appropriate strategic plans to enhance their capabilities [9].

### 3. Methodology

This research can use a qualitative approach to explore how the AI Capability Framework can be applied in human resource management. The qualitative approach will enable the researcher to gain an in-depth understanding of the use of the AI Capability Framework in human resource management and the perspectives of practitioners, users and experts in the field. In addition, this research can adopt case studies to explore how the AI Capability Framework can be applied in human resource management practices. Case studies can be carried out by interviewing practitioners and decision makers in companies that have adopted the AI Capability Framework in human resource management.

This research can also use a document analysis approach to explore how the AI Capability Framework can be applied in human resource management. Document analysis may include a review of the literature on AI Capability Framework and human resource management, reports and documentation of companies adopting the AI Capability Framework in human resource management, and official documents issued by governments or related institutions. This research can also utilize a mixed research approach that combines qualitative and quantitative methods to collect data and analyze research results. This mixed approach will allow researchers to gain a comprehensive

understanding of the use of the AI Capability Framework in human resource management.

Document analysis is one of the research methods that can be used to explore the topic *The Perspective of Artificial Intelligence in Human Resource Management Practices*. Document analysis involves examining written documents such as reports, books, articles, official documents, and other data sources to find information relevant to the research topic. In the context of this study, document analysis can be used to dig up information about the use of the AI Capability Framework in human resource management from trusted sources such as official government documents, company financial reports, or articles published in journals related to AI and human resource management. The document analysis process involves several stages, including:

1. Document selection: The first stage is to select documents that are relevant to the research topic. The selected document must be related to the AI Capability Framework and human resource management.
2. Data collection: The next stage is data collection from the selected documents. The data collected includes information about the use of the AI Capability Framework in human resource management such as the recruitment process, performance management, employee development, and compensation strategies.
3. Data coding: After the data is collected, the researcher will code the data to facilitate analysis. Data coding involves the process of assigning labels or categories to each data collected.
4. Data analysis: The last stage is data analysis which involves the process of interpreting the data and looking for patterns or findings that can support research. Data analysis can be done using statistical techniques or manually, such as grouping data and making tables or diagrams.

By using document analysis in this research, researchers can obtain more complete information and understanding about the use of the AI Capability Framework in human resource management from various reliable and relevant sources. A mixed research approach or mixed methods is a research method that combines quantitative and qualitative approaches in one study. This approach can be used to gain a more comprehensive understanding of a phenomenon being studied.

In this research, a mixed research approach can be used to combine quantitative and qualitative data analysis in exploring the value of AI Capability Framework in human

resource management. While the mixed research approach can be carried out in several stages, including:

1. **Research design:** The first stage is to design a research design that includes the type of data to be collected, the instruments to be used, and the method of data analysis to be carried out.
2. **Data collection:** The next stage is data collection, which involves collecting both quantitative and qualitative data. Quantitative data can be collected through questionnaires or online surveys, while qualitative data can be collected through interviews or document analysis.
3. **Data analysis:** After the data has been collected, the next stage is data analysis which involves separate quantitative and qualitative analysis.
4. **Data integration:** The final stage is data integration, where quantitative and qualitative data are combined and interpreted together. Data integration is carried out to obtain a more comprehensive understanding of the phenomenon being studied.

In this research, a mixed research approach can be used to obtain more complete information about the use of AI Capability Framework in human resource management from a quantitative and qualitative perspective. Through this approach, researchers can obtain information about the value of the AI Capability Framework from different perspectives, so as to gain a more comprehensive understanding of the use of the AI Capability Framework in human resource management.

## 4. Results and Discussions

An introduction to artificial intelligence (AI) is about computer technology designed to mimic the ability of the human brain to process information and make decisions [4]. AI has various applications in various sectors, including in the field of human resource management (HR) [11]. In the context of HR management, AI can assist in making decisions related to employee recruitment, selection, training, development and evaluation [4]. For example, by using AI in the recruitment and selection process, companies can identify the best candidates more quickly and efficiently. In addition, AI can assist companies in determining employee training and development needs based on analysis of data and past performance [8]. However, the use of AI in HR management

also raises several ethical and social issues. One frequently discussed issue is the discrimination that can occur when AI is based on unbalanced or unrepresentative data, such as gender or ethnicity [13]. Therefore, it is important for companies to consider and ensure that the use of AI in HR management is carried out with the necessary ethics and caution [10].

AI Capability Framework (ACF) is a framework used to measure a company's ability to implement AI technology in various business aspects, including human resource management (HR). ACF combines various dimensions that must be considered in implementing AI, such as policies and strategies, technology, data, HR skills, and organizational culture [12]. The use of ACF is very important in measuring a company's ability to implement AI in HR management because it provides clear and systematic guidelines for developing this capability. ACF also helps companies to understand more deeply the various aspects that must be considered in implementing AI, thereby minimizing the risk of failure and maximizing the benefits of using AI [7]. By understanding the company's ability to implement AI in HR management through ACF, the company can determine the steps that need to be taken to improve this capability [13]. In addition, companies can identify areas where AI can be used to improve HR management efficiency and productivity, such as in the recruitment process, employee training and development, performance management, and occupational safety and health management [10].

Measuring a company's ability to implement AI in HR management can be done using the AI Capability Framework (ACF). ACF is a framework that can be used to measure a company's ability to implement AI in various aspects, including HR management [10]. ACF consists of several dimensions covering aspects that need to be considered in implementing AI, such as technology, data, organization, and culture [9]. Each dimension has certain indicators that can be used to measure the company's ability in each of these aspects. For example, in the technological dimension, indicators that can be used to measure a company's ability to implement AI include the availability of adequate technological infrastructure, the ability to integrate different systems, and the ability to utilize AI technology effectively [9].

Meanwhile, in the data dimension, indicators that can be used include the availability of adequate and quality data, the ability to analyze and utilize data effectively, and the ability to protect sensitive data [2]. By using ACF, companies can measure their ability to implement AI in HR management, and find out which dimensions need to be improved to achieve the desired goals [10]. This can help companies make more

informed decisions in developing their AI strategy, and ensure that the investments made can deliver optimal results.

Several influencing factors include leadership, corporate culture, data availability, human resources and regulations [4]. Strong leadership and supporting the implementation of AI technology can increase the success of AI implementation in HR management in companies [8]. On the other hand, a corporate culture that is innovative, open to change, and oriented towards the use of technology can influence the implementation of AI in HR management in companies [9]. The availability of sufficient and high-quality data is also an important factor in the implementation of AI in HR management in companies. Companies need to ensure that the data used in AI implementation is accurate and relevant [11]. Then human resources who have technical capabilities and strong business understanding can influence the implementation of AI in HR management in companies [10]. Companies need to ensure that their human resources can understand and operate AI technology properly [9]. Furthermore, regulations related to the use of AI technology in HR management also need to be considered by companies. Companies need to ensure that the use of AI technology in their HR management meets the standards set by the authorities.

The use of AI in HR management has the potential to bring about numerous benefits and implications for decision making in companies [3]. AI technology can provide significant advantages, such as time and cost efficiency, higher accuracy in decision making, better data analysis, improved employee experience, and support for better decision making [9]. By automating routine tasks, AI can save time and costs, while also improving the accuracy of employee performance predictions and talent identification. The technology can also help companies analyze complex HR data to gain better insights into employee satisfaction and behavior, and provide faster and easier access to information and support, thereby enhancing employee experience [6]. However, the implication of using AI in HR management is that decision making must be supported by insights generated from AI. Companies must ensure that data used for AI is accessed and used ethically and securely. Moreover, employees should be educated on the potential impact of AI on their work, and provided with appropriate training to effectively use the technology [4]. Ultimately, companies that successfully implement AI in HR management can benefit from improved decision making and enhanced employee experience, resulting in improved overall performance.



The use of AI technology in HR management has numerous implications for companies, particularly in terms of decision making and performance [3]. One of the key implications of using AI in HR management is that it can lead to more accurate and faster decision making [8]. By utilizing advanced AI algorithms, companies can perform more accurate data analysis and obtain useful insights to support sound business decisions [10]. Moreover, the implementation of AI in HR management can help companies increase efficiency and productivity in managing their workforce. AI can be utilized to process employee data, shortlist candidates, and develop more effective employee development plans, thereby increasing overall productivity. Another important implication of using AI in HR management is cost reduction [7]. By using sophisticated AI algorithms, companies can reduce the time needed to select candidates and process employee data more efficiently, leading to significant cost savings. Furthermore, AI can help companies increase employee satisfaction by better understanding employee needs and preferences, thus developing more effective employee development programs. Overall, the implementation of AI in HR management can provide numerous benefits to companies, including more accurate and faster decision making, increased efficiency and productivity, reduced costs, and increased employee satisfaction.

The use of artificial intelligence (AI) in human resources management (HRM) practices also brings several risks that companies must consider. One of the risks is the potential for biased decision-making [12]. AI systems can be programmed with certain biases that may impact HR decisions. For example, if an AI system is trained on biased data sets, it may learn to discriminate against certain groups of employees, such as those of a certain race, gender, or age [11].

Another risk is the potential for privacy violations [6]. HR data is highly sensitive, and companies must ensure that employee data is handled ethically and securely [1]. However, the use of AI in HRM practices may increase the risk of data breaches or data misuse. Moreover, the reliance on AI may reduce the human element in HR decision-making, which can lead to employee dissatisfaction and mistrust. Employees may feel that they are being judged solely on algorithms, rather than being seen as individuals with unique skills, experiences, and needs [9].

Finally, there is a risk that the use of AI in HRM practices may lead to job loss or displacement of HR professionals. As AI systems become more sophisticated, they may be able to perform tasks that are currently done by HR professionals, such as candidate screening or performance evaluation [9]. Overall, companies must be aware of the risks

associated with using AI in HRM practices and take steps to mitigate these risks [2]. This includes ensuring that AI systems are trained on unbiased data, implementing robust data privacy and security measures, and maintaining the human element in HR decision-making.

To overcome the risks of AI in HR management, companies can take several steps including develop ethical AI practices, ensure data security, foster employee, human oversight and continual evaluation and improvements. To prevent AI from perpetuating bias or discrimination, companies must develop ethical AI practices. HR departments can work with AI developers to ensure that AI is designed and implemented to be fair and unbiased. Companies must ensure that employee data used for AI is accessed and used securely. This can be achieved through data encryption, access controls, and regular data audits. To prevent employee distrust or resistance to AI, companies must foster trust and transparency in the use of AI. This can be achieved through effective communication and training programs that educate employees on the use and benefits of AI in HR management. To prevent AI from making decisions that could adversely affect employees, companies should ensure that there is always human oversight of AI decision-making processes. This can help prevent errors or biases in AI-generated decisions. Companies should continuously evaluate and improve AI strategies to ensure that they align with company goals and improve company performance. This can involve regular assessments of the impact of AI on HR management practices and performance metrics. By taking these steps, companies can mitigate the risks of AI in HR management and realize the benefits of AI while ensuring that employees are treated fairly and ethically.

According to the research results, several recommendations are proposed for companies to develop AI capabilities in HR management and improve overall company performance [2]. Firstly, building strong awareness and understanding of the potential advantages of using AI in HR management among company management and employees is crucial [10]. Secondly, implementing the AI Capability Framework (ACF) throughout the organization can help measure the company's ability to implement AI in HR management [1]. Thirdly, investing in relevant AI technologies can strengthen the company's ability to manage employee data and make better decisions in HR management [4]. Fourthly, cooperation between the HR department and IT department needs to be strengthened to ensure successful implementation of AI in HR management [8]. Fifthly, HR skills and capacity in using and managing AI technology need to be built to increase HR

management efficiency and effectiveness. Sixthly, establishing partnerships with AI service providers can help develop AI solutions that fit the company's needs and goals in HR management [10]. Lastly, companies should evaluate the results of implementing AI in HR management regularly and continuously improve their AI strategies to achieve better company performance [12]. By following these recommendations, companies can improve their AI capabilities in HR management and enhance overall company performance.

## 5. Conclusions

Based on this research, it can be concluded that AI can provide significant added value in human resource management. The AI Capability Framework (ACF) has also proven effective in measuring a company's ability to implement AI in HR management. The use of AI in HR management can provide significant benefits for companies, such as cost savings, increased efficiency, increased employee satisfaction, and better and faster decision making. However, companies need to consider factors such as human capital, organizational culture, and technology infrastructure in preparing for a successful AI implementation. In order to improve AI capabilities in HR management, companies need to take several actions, such as increasing HR capacity, strengthening the culture of innovation, and developing adequate technology infrastructure. By developing better AI capabilities in HR management, companies can improve their overall performance and maintain a competitive advantage in the market.

## 6. Future Research Recommendation

Based on the results of a study on this research, there are several suggestions and recommendations for future research. First, further research can broaden the scope of research by considering cultural, ethical, and legal aspects of the implementation of AI in HR management in various countries and industrial sectors. Second, research can further deepen understanding of the factors that influence the adoption and acceptance of AI by employees and company management. Third, research can explore the use of more sophisticated AI technologies such as computer vision, natural language processing, and machine learning to optimize HR management processes. Fourth, research can focus on measuring the impact of using AI in HR management on company performance

and employee satisfaction. By conducting further and detailed research on the use of AI in HR management, it is hoped that it will provide a clearer view for practitioners and researchers to develop AI capabilities in companies and improve overall company performance.

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