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The Role of AI in Enhancing HRM Practices A Comparative Study Across Industries

Peran AI dalam Meningkatkan Praktik HRM Sebuah Studi Komparatif di Berbagai Industri

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ABSTRACT
Application of artificial intelligence (AI) in *Human Resource Management* (HRM) is increasingly important in various industries to increase employee engagement and productivity. However, the impact of AI in HRM varies based on the specific characteristics of each industry, such as technology, manufacturing, services, and healthcare, demanding a targeted approach. This research aims to provide a comprehensive analysis of the role of AI in increasing employee engagement and productivity through a systematic literature review that examines research methods, industry distribution, and contextual factors that influence the effectiveness of AI in HRM. Using PRISMA methodology, a number of studies that met the inclusion and exclusion criteria were selected for analysis. The research results show that AI has a positive impact on employee engagement and productivity, but the impact varies across industries, influenced by organizational culture, skills requirements, and ethical and legal regulations. These findings provide guidance for HRM practitioners in effectively adopting AI according to the unique needs of each sector.
Keywords: Artificial Intelligence, Human Resource Management, Employee Engagement, Productivity, Industrial, Systematic

ABSTRAK
Penerapan kecerdasan buatan (AI) dalam Human Resource Management (HRM) semakin penting di berbagai industri untuk meningkatkan keterlibatan dan produktivitas karyawan. Namun, dampak AI dalam HRM bervariasi berdasarkan karakteristik spesifik setiap industri, seperti teknologi, manufaktur, layanan, dan kesehatan, sehingga menuntut pendekatan yang terarah. Penelitian ini bertujuan untuk memberikan analisis komprehensif mengenai peran AI dalam meningkatkan keterlibatan dan produktivitas karyawan melalui tinjauan literatur sistematis yang mengkaji metode penelitian, distribusi industri, dan faktor-faktor kontekstual yang mempengaruhi efektivitas AI dalam HRM. Dengan menggunakan metodologi PRISMA, sejumlah studi yang memenuhi kriteria inklusi dan eksklusi dipilih untuk dianalisis. Hasil penelitian menunjukkan bahwa AI berdampak positif pada keterlibatan dan produktivitas karyawan, tetapi dampaknya berbeda-beda antar industri, dipengaruhi oleh budaya organisasi, kebutuhan keterampilan, serta peraturan etika dan hukum. Temuan ini memberikan panduan bagi praktisi HRM dalam mengadopsi AI secara efektif sesuai dengan kebutuhan unik setiap sektor.
Kata Kunci: Kecerdasan Buatan, Manajemen Sumber Daya Manusia, Keterlibatan Karyawan, Produktivitas, Industri, Sistematis

1. Introduction

The integration of artificial intelligence (AI) in human resource management (HRM) is increasingly changing organizational practices, especially in recruitment, performance appraisal, training and employee retention. AI technology improves the efficiency and accuracy of HR processes, enabling HR professionals to focus more on strategic initiatives rather than repetitive administrative tasks. For example, AI algorithms can speed up the recruitment process by screening candidates based on predetermined criteria, which not only reduces the time required for the recruitment process, but also maintains the quality of selection (Alsaif & Aksoy, 2023; Sabil, 2023). This capability becomes especially crucial in the digital era, where organizations face intense competition and the need to quickly adapt to changing market conditions.

Additionally, AI's role goes beyond just recruitment, providing deep insights into employee engagement through sophisticated data analysis. By analyzing employee behavior patterns, AI can identify factors related to engagement levels and potential turnover risk (Alsaif & Aksoy, 2023; Sabil, 2023). This predictive capability is important for organizations looking to increase employee retention and satisfaction, as it allows HR departments to proactively address issues before they become more serious. Furthermore, AI helps in conducting more objective performance assessments by analyzing performance metrics, thereby reducing biases that may arise due to human judgment (Tambe et al., 2019). This shift towards data-based decision making in HRM not only increases the fairness of evaluations, but also aligns employee performance with organizational goals.

Although AI offers promising benefits in HRM, there are challenges that organizations need to address. One of the main concerns is the need for transparency in AI processes, as employee trust in AI systems is critical to ensuring their acceptance and effectiveness in use (Yu et al., 2023). Additionally, although many organizations have adopted AI technologies, many still do not have a comprehensive understanding of the impact these tools have on employee productivity and engagement (Tambe et al., 2019). This gap highlights the need for ongoing research and evaluation of the effectiveness of AI in the context of HRM, to ensure that organizations can leverage this technology to improve overall performance. In conclusion, the integration of AI in HRM offers both opportunities and challenges. While AI can significantly improve efficiency and decision-making processes, organizations must prioritize transparency and continuous assessment of AI's impact on employee engagement and productivity. As AI technology develops, the strategies implemented by HR professionals must also continue to evolve to optimally utilize its potential in cultivating a motivated and productive workforce.

Although the adoption of AI in HRM continues to increase across industries, its impact on employee engagement and productivity remains a topic that requires further research. So far, most research on AI in HRM has focused on the direct impact of AI in specific aspects, such as the efficiency of the recruitment process or increasing the speed of employee performance analysis. However, comparative research examining the differences in the impact of AI on employee engagement and productivity across industrial sectors is still very limited. Each industrial sector has different characteristics related to organizational structure, work environment, and patterns of relationships between employees. For example, the information technology sector tends to have a dynamic and flexible work environment, while the manufacturing sector has a more hierarchical structure and more routine work processes. These differences indicate that the impact of AI on employee engagement and productivity can vary widely across industries. Additionally, little research highlights how industry-specific factors, such as organizational culture, job type, and specific skill requirements, influence the effectiveness of AI adoption in HRM. This creates a lack of comparative research across industries that gap significant knowledge, especially for companies looking to maximize their investments in AI. Thus, the question of the effectiveness of AI in increasing employee engagement and productivity, especially in a cross-industry context, becomes very important to answer.

This research aims to fill the gap in the literature by conducting a systematic review of the impact of AI in HRM practices on employee engagement and productivity in various industrial sectors. The main objective of this research is to analyze the role of AI-based HRM tools in increasing employee engagement and productivity in various sectors, as well as to identify industry-specific factors that influence the effectiveness of such AI adoption. Through this study, this research hopes to provide a comprehensive picture of the benefits and challenges of implementing AI in HRM, especially in a cross-industry context.

This research contributes significantly to enriching the literature on the use of AI in HRM by presenting a unique cross-sector perspective. By exploring the differences in AI's impact on employee engagement and productivity across industries, this research provides valuable insights that companies can use to identify AI adoption strategies that best suit their industry's needs. It is hoped that the findings from this research can help HRM practitioners to make more informed decisions regarding the application of AI technology, so that AI is not only seen as a tool for automating processes, but also as an appropriate strategy for increasing employee engagement and productivity.

From an academic perspective, this research contributes to expanding understanding of the role of AI technologies in cross-industry HRM contexts, as well as offering empirical evidence regarding the specific factors influencing AI adoption in each industry. In addition, this research provides direction for further research that can deepen understanding of the dynamics of AI in increasing employee productivity and engagement in the digital era.

2. Method

2.1. Study Design

This research uses the Systematic Literature Review (SLR) method with the PRISMA approach (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) to ensure the quality and accuracy of results in analyzing existing literature related to the adoption of AI technology in Human Resource Management (HRM) practices. The PRISMA approach was chosen because of its systematic and transparent structure in managing, filtering and presenting literature search results, making it easier to identify relevant studies while reducing the potential for bias. PRISMA measures will ensure that each study included and analyzed has gone through a rigorous selection process according to pre-established inclusion and exclusion criteria. With this approach, the research will provide a comprehensive view of how AI affects employee engagement and productivity in various industrial contexts.

2.2. Inclusion and Exclusion Criteria

To maintain focus on relevant and high-quality studies, this study established several inclusion and exclusion criteria. *Inclusion criteria* includes articles discussing the implementation of AI in HRM with a particular focus on employee engagement and productivity across various industry sectors. The selected articles must contain relevant empirical results or analyzes related to the impact of AI technology on various aspects of HRM, such as recruitment, performance appraisal, training and development. Only studies published in reputable scientific journals between 2010 and 2024 will be included, to ensure the discussion includes the latest developments in this field.

Meanwhile, exclusion criteria will include articles that are not relevant to the research focus, such as articles that only discuss AI technology in a general context without a specific connection to HRM, as well as studies that do not contain direct analysis of employee engagement or productivity. Articles with unverifiable data or non-empirical articles, such as simple opinions or reviews, will also be excluded. Thus, only studies that are truly relevant to the focus of this research will be analyzed further.

2.3. Search Strategy

The literature search process was carried out in various reputable scientific databases, including Scopus, IEEE Xplore, Web of Science, and Google Scholar. This database was selected to accommodate a wide range of literature and ensure the accuracy and validity of search results. Literature searches use keywords specific to the research topic, such as "AI in HRM," “employee engagement,” “productivity,” And “cross-industry comparison.” In addition, keyword combinations such as “adoption of AI in recruitment” or “AI-driven performance evaluation” also used to narrow and target search results to suit research objectives. Each search result is then checked for suitability based on the title and abstract, before further filtering is carried out by reading the entire contents of the article.

The search process was carried out repeatedly and verified to ensure that no relevant literature was missed. Apart from that, technique backward And forward citation tracking also applied to find additional relevant literature. This method involves checking the references of selected articles and searching the literature citing those articles, with the aim of increasing the scope of the search and finding related studies that may not have been captured in the initial search.

2.4. Data Analysis Procedures

After relevant articles have been collected, the next step is to carry out data analysis procedures with a structured approach. Each article that meets the inclusion criteria will be coded and organized based on several categories, such as industry type, applied HRM aspects (recruitment, training, performance appraisal), as well as the specific impact of AI on employee engagement and productivity. The coding process aimed to identify common patterns and themes that emerged from the different studies.

The data obtained was then analyzed using a thematic approach to identify cross-industry differences regarding the use of AI in HRM. Through this analysis, we will gain a deeper understanding of how AI adoption can have varying impacts on employee engagement and productivity in various sectors. The results of this analysis will be interpreted in the context of industry-specific factors, such as organizational culture and job characteristics, to explore factors that support or hinder the effectiveness of AI in increasing employee engagement and productivity. With a comprehensive analytical approach, this research is expected to produce informative and applicable findings for HRM practitioners as well as contribute to wider literature regarding the role of AI in increasing the effectiveness of HRM across industrial sectors.

3. Results

In this section, the results of the analysis will begin by providing an overview of the studies included in the systematic literature review. From the total search results, a number of studies were selected that met the inclusion and exclusion criteria. The number of included studies will be broken down according to diverse industry distributions, for example technology, manufacturing, service, education, and health industries. Each study was also classified based on the research methods used, such as quantitative, qualitative, or mixed research, to indicate the dominant methodological tendencies in AI research in the field of HRM. Additional information regarding the year of publication and geographic region where the research was conducted would help identify time trends and regional differences in the adoption of AI technologies in HRM. These details are important to provide clear context for readers and ensure that the analysis conducted takes into account the industry variations and methodologies used in the studies.

3.1. The Impact of AI-Based HRM Tools on Employee Engagement

This section discusses key findings regarding the impact of AI technology in increasing employee engagement across sectors. From the analyzed literature, it was found that the integration of artificial intelligence (AI) in human resource management (HRM) has been shown to have a positive impact on employee engagement, although the degree of influence varies significantly across different industry sectors. In the technology sector, AI tools such as sentiment analysis platforms are becoming important resources for understanding employee needs and preferences. The platform facilitates real-time analysis of employee engagement data, allowing organizations to identify areas that need improvement and improve the overall work experience. For example, sentiment analysis can reveal the underlying feelings of employees, allowing organizations to address issues proactively and create a more supportive work environment (Sekar, 2023; Gaye et al., 2021; Fitri, 2023).

In contrast, in the manufacturing sector, AI applications are more focused on automating HRM processes, such as shift scheduling and performance appraisal. While these automation efforts increase efficiency, their direct impact on employee engagement may not be as great as in industries that place a greater emphasis on human interaction. Research shows that the manufacturing sector often prioritizes operational efficiency through AI, but tends to neglect the deeper aspects of employee engagement, which are easier to fulfill in sectors such as health and services (NAGI et al., 2023; Tucker, 2020). In these sectors, AI is used to personalize training and development initiatives, significantly increasing employee engagement through customized learning experiences (Harlianto & Rudi, 2023; Joshi et al., 2023).

Additionally, the healthcare industry is an effective example of using AI to increase employee engagement through adaptive and personalized learning experiences. AI tools can analyze employee feedback and performance data to create training programs tailored to individual needs, thereby increasing overall employee engagement (NAGI et al., 2023; Rahmadani et al., 2019). This personalized approach not only increases employee satisfaction but also contributes to organizational performance by ensuring that employees feel valued and supported in their professional development (Cahyani & Siswanto, 2019). In conclusion, although AI has the potential to improve employee engagement across a wide range of industry sectors, the specific applications and outcomes differ greatly. In the technology sector, AI facilitates deep understanding of employee sentiment, whereas in manufacturing, AI is more focused on HR process efficiency with less emphasis on engagement. In contrast, the healthcare sector is leveraging AI to create personalized experiences that meaningfully increase employee engagement. These differences in impact emphasize the importance of contextualizing AI applications within a specific industry framework to maximize their effectiveness in building employee engagement.

This comparison provides insight into how the specific characteristics of each industry can influence the effectiveness of AI in increasing employee engagement. These insights are important to help HRM practitioners tailor AI-based approaches to the unique needs and characteristics of each industry.

3.2. The Impact of AI-Based HRM Tools on Employee Productivity

In this subsection, findings from the literature regarding the influence of AI technology in increasing employee productivity are presented comprehensively. Studies show that the integration of artificial intelligence (AI) in human resource management (HRM) has been proven to significantly increase employee productivity in various industrial sectors, although there are differences in its implementation and impact. In the technology sector, AI is playing a role in automating HR administrative tasks, so managers can shift their focus to more strategic employee development initiatives. This transition not only simplifies operations, but also creates an environment that supports employee growth, which ultimately increases productivity (Nurlia, 2023; Alsaif & Aksoy, 2023; Pandey, 2023). AI's ability to handle routine

tasks effectively frees up valuable time for management, enabling the creation of a more engaged and productive workforce (Rožman et al., 2023; STILL, 2023).

In the manufacturing sector, AI contributes to increased productivity primarily through automated scheduling and performance monitoring systems. This technology facilitates more efficient resource allocation and operational monitoring, which is especially important in high-volume production environments (Rožman et al., 2023; Szajna & Kostrzewski, 2022). The application of AI-based tools enables real-time data analysis and performance monitoring, which can improve production capacity and quality (Rožman et al., 2023; Hui, 2023). AI can also optimize logistics and reduce operational costs, further supporting increased productivity in the manufacturing sector (Rožman et al., 2023; Chen, 2022).

In contrast, the service sector is experiencing a greater impact from AI on the quality of interactions between employees and customers. AI technology improves service by providing faster and more accurate feedback, which is essential in maintaining high levels of customer satisfaction (Wijayati et al., 2022; Wirtz et al., 2018). By reducing the administrative burden on employees, AI allows them to concentrate more on providing superior service quality, thereby driving productivity through better customer experiences (Malik et al., 2022; Zafar, 2023). The strategic application of AI in HRM in this sector emphasizes the importance of customizing AI solutions according to specific industry needs so that their effectiveness can be maximized (Paesano, 2021; Sithambaram & Tajudeen, 2022).

Overall, these findings suggest that while AI improves operational efficiency across sectors, its impact on employee productivity is multifaceted and depends on the unique structural and operational demands of each industry. Organizations need to adopt AI technologies with a deep understanding of their specific context so that the benefits of AI in HRM can be maximized (Malik et al., 2021; Mantello et al., 2021; Arslan et al., 2021).

3.3. Factors Influencing the Effectiveness of AI Tools in HRM

The effectiveness of artificial intelligence (AI) tools in Human Resources Management (HRM) is influenced by several important factors, including organizational culture, skill requirements, and regulations and work ethics. Each of these factors plays an important role in determining the extent to which AI can be integrated into HRM practices across various industry sectors.

1. **Organizational culture**

An adaptive and innovative organizational culture is essential for the successful implementation of AI in HRM. Research shows that organizations with a culture that supports technological advancements tend to experience faster and more effective AI integration, which in turn increases employee engagement and productivity (Maryati et al., 2022; Shah, 2023; Song et al., 2019). For example, in the technology sector, a supportive culture creates a conducive environment for the adoption of AI, leading to better organizational outcomes (Naldi et al., 2021). In contrast, in traditional sectors such as manufacturing, rigid organizational cultures can hinder the acceptance of AI technology, thereby limiting its effectiveness in HRM practices (Maryati et al., 2022; Shah, 2023). Alignment of organizational culture with HRM practices is very important, because it can significantly influence performance and innovation in organizations (Song et al., 2019; Zhang et al., 2022).

2. **Skills Requirements**

Employee skills are another important factor influencing the effectiveness of AI in HRM. Industries that require high technical skills, such as technology and manufacturing, are generally better equipped to utilize AI tools effectively thanks to existing competencies within their workforce (Kryscynski et al., 2017; Alsaif & Aksoy, 2023). In contrast, sectors such as education and services, which place greater emphasis on interpersonal skills, may face challenges in effectively integrating AI technologies (Alsaif & Aksoy, 2023). Employees' ability to interact with AI systems directly correlates with the overall success of AI implementation in

HRM, highlighting the need for targeted training and development initiatives to improve analytical and technical skills among HR professionals (Kryscynski et al., 2017; Li-jun et al., 2017; Li-jun et al., 2017; Li-jun et al. al., 2022).

3. Regulations and Work Ethics

The regulatory environment governing HR practices also plays an important role in the effectiveness of AI integration. In highly regulated industries, such as healthcare, strict policies regarding the use of employee data can limit the scope of AI applications (Belhadi et al., 2021). Organizations must navigate these regulations carefully to ensure that AI adoption is in line with ethical standards and legal requirements (Belhadi et al., 2021; Zhou, 2023). In contrast, industries with more flexible regulatory frameworks, such as technology and services, could adopt AI more widely, potentially resulting in greater increases in employee engagement and productivity (Belhadi et al., 2021). The interplay between regulatory compliance and AI utilization highlights the importance of ethical considerations in the implementation of AI tools in HRM (Zhou, 2023).

Overall, the effectiveness of AI tools in HRM is greatly influenced by organizational culture, employee skill levels, and the regulatory environment. Organizations that build a culture of innovation, invest in employee skill development, and effectively navigate regulatory challenges are more likely to realize the full potential of AI in improving HRM practices. By exploring these factors, this research provides an in-depth understanding of the elements that support or hinder the implementation of AI in HRM across various industries. These findings can serve as a guide for companies and HRM practitioners in developing AI adoption strategies that are effective and responsive to the unique characteristics of each industrial sector.

4. Discussion

In this discussion section, the results of the analysis will be interpreted to answer the main research questions: "How do AI-based HRM tools impact employee engagement and productivity in various industries, and what factors influence their effectiveness?" This discussion focuses on interpretation of the findings, practical implications for HRM practitioners, limitations of the study, and recommendations for further research.

4.1. Interpretation of Findings

The impact of using artificial intelligence (AI) tools in human resources management (HRM) on employee engagement and productivity varies widely across industries. This variation is caused by several factors, including organizational culture, operational needs, and the level of adaptability of each industry to technological advances. In the technology sector, for example, AI is often used for sentiment analysis and real-time monitoring that can improve employee experience while speeding response to their needs. Research shows that organizations with a culture that is more supportive of AI integration, generally large-scale companies, are better positioned to leverage AI to increase employee engagement and productivity (Rožman, 2023; Sabil, 2023).

In contrast, in the manufacturing sector, the use of AI is more directed at automating administrative tasks. While this improves efficiency, its impact on employee engagement is not very significant. These differences highlight the importance of organizational culture in AI adoption, as traditional sectors often face cultural barriers that hinder effective AI integration (Kar et al., 2021; Agarwal, 2022). Research shows that industries that have dynamic and adaptive cultures, such as the technology and services sectors, are more likely to experience the direct positive impact of AI on employee engagement and productivity (Alasmri & Basahel, 2022; Wang, 2023). In contrast, manufacturing industries that have a more rigid structure tend to only experience the benefits of AI in terms of operational efficiency without increasing employee engagement (Braganza et al., 2021).

The unique characteristics of each sector, such as skills requirements and operational requirements, also contribute to these differences. For example, organizations that prioritize innovation and experimentation with AI tend to have cultures that support employee engagement (Rožman, 2023; Brock & Wangenheim, 2019). In contrast, more traditional sectors may have difficulty making the cultural changes required for effective AI adoption. This causes the impact of AI to be felt more in the form of increased efficiency than increased morale or employee engagement (Chen et al., 2020). Thus, understanding these variations provides valuable insight into how the specific characteristics of each industry shape the influence of AI on HRM practices.

Overall, AI integration in HRM is not occurring uniformly across industries; rather, it is influenced by complex interactions between organizational culture, ability to adapt to technology, and the specific operational context of each sector. This understanding is important for organizations looking to maximize AI's potential to increase employee engagement and productivity.

4.2. Practical Implications

The findings of this research have important implications for HRM practitioners in various industrial sectors. To achieve optimal results, AI adoption strategies in HRM should be tailored to the specific characteristics of each industry. For example, in service industries that place a premium on human interaction, AI strategies in HRM should focus on personalizing employee training and development to improve engagement and service quality. AI can be used to manage employee feedback and provide individual needs-based learning, relevant to the nature of the industry.

In contrast, in the manufacturing sector, AI can be focused on automating shift scheduling and performance monitoring which increases operational efficiency. By understanding the role of AI in increasing productivity according to the demands of each sector, HRM practitioners can design a more effective approach to the adoption of AI technology. This helps companies ensure that investments in AI technology have maximum impact on employee engagement and productivity.

4.3. Research Limitations

This study has several limitations that need to be considered. One limitation is the potential for bias in literature selection, where only certain studies meet the inclusion and exclusion criteria. This may result in underrepresentation from some industry sectors or geographic regions. Another limitation is limited data availability in some industries, especially in sectors that have only recently adopted AI in HRM and may not yet have sufficient empirical evidence regarding its impact. Additionally, in some industries, AI adoption in HRM is still in its infancy, so AI applications are not yet mature enough to demonstrate a significant impact on employee engagement or productivity. The research is also limited in terms of time coverage, only covering studies in recent years, so it cannot capture the long-term changes that may occur as AI develops.

4.4. Recommendations for Further Research

Further research is needed to deepen understanding of the factors influencing the effectiveness of AI in HRM. One recommendation is to conduct a study on the role of organizational culture in supporting or hindering AI adoption in various industrial sectors. Further study of these cultural factors will help explain how cultural differences may influence the acceptance of AI technology in HRM. Additionally, longitudinal research looking at the impact of AI in HRM over the long term is also recommended, especially to assess how changes in technology and organizational needs may impact employee engagement and productivity over time. Further research could also explore the relationship between work regulations and

ethics in the application of AI, especially in highly regulated sectors such as health, where strict policies on data privacy may limit the implementation of AI.

5. Conclusion

In this section, the conclusion will summarize the main findings resulting from the analysis of literature related to the use of AI technology in HRM and provide an overview of the research contribution to HRM practices in various industries. This conclusion aims to provide readers with a clear summary of the impact of AI on HRM and how contextual factors may influence the successful implementation of the technology.

5.1. Summary of Key Findings

This research has identified that AI tools in HRM have a significant impact on employee engagement and productivity, although this impact varies depending on industry and organizational characteristics. In some industries, such as technology and services, AI has been proven to increase employee engagement through personalization mechanisms, such as feedback analysis and skill development based on individual needs. AI technology here is more effective in increasing engagement because the work environment tends to be flexible and adaptive to new technology. AI enables HRM professionals in this sector to understand and respond to employee needs more precisely and quickly, which in turn increases their engagement with the company.

However, in more traditional industries, such as manufacturing, the impact of AI is more visible in terms of productivity. AI in HRM helps optimize operational processes such as work scheduling and performance management, which has a direct impact on production efficiency. These variations in impact are caused by industry-specific factors, including the level of digital maturity, organizational culture, and company policies towards innovation. In industries that prioritize efficiency, AI is more focused on optimizing processes, while in industries that prioritize human interaction, AI plays a role in supporting employee work experience. Thus, AI can be adjusted to achieve optimal results according to the context of each industry.

5.2. Research Contribution

This research makes an important contribution to the HRM literature and to practitioners in the field considering AI adoption. First, this research provides evidence-based guidance on the benefits of AI in increasing employee engagement and productivity across various industry sectors. By understanding how the impact of AI may vary from one industry to another, HRM practitioners can make more informed decisions and tailor AI implementation to suit the specific needs of their sector. This supports more focused strategic decision making in order to optimize human resources through technology.

Second, this research provides practical guidance for HRM managers in understanding the factors that need to be considered to achieve effective AI implementation. By discussing contextual factors such as organizational culture, level of digital maturity, as well as structural differences between industries, this research helps HRM identify important elements that contribute to successful AI adoption. This guide will be especially useful for practitioners who want to develop targeted, data-driven strategies to increase employee engagement in the digital era.

Finally, this research adds insight for academic researchers regarding the limitations of applying AI in the HRM sector, especially in industries that face cultural and regulatory challenges. This research opens up space for further research to dig deeper into additional factors that have not been explored, such as ethical aspects and the long-term impact of AI on

HRM, so as to provide more comprehensive insights for the academic community and HRM practitioners in the future.

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