The ChatGPT and the future of HR: A critical review on the benefits and challenges of AI chatbots in human resource management

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Abstract ChatGPT, the generative artificial intelligence (AI) tool, can be considered as a major technological revolution. The development of AI is significantly affecting various corporate operations, and ChatGPT’s use in an HR context is likely to grow in popularity and significantly impact how HR professionals perform their duties. The main purpose of this paper is to investigate the potential benefits and challenges of utilizing AI chatbots in human resource management. In addition, the study looks at how their use is expected to develop over time and how companies are preparing for this technological transformation. Utilizing a systematic review methodology, the paper reviews 27 papers identified in the Scopus database published in from the year 2016 to 2023 to address the research questions. The findings of the paper show ChatGPT has several benefits for Human Resource function including automating routine HR tasks, providing insights to optimize HR strategies and decision making. At the same time, organizations might face some potential challenges of using Chatbots, such as limited understanding of human nuances and context, lack of emotional intelligence, privacy, and security concerns. The study suggests how organizations need to prepare to confront these challenges, technological shifts, and potential future research areas. Thus, the paper contributes to the literature on the use of AI chatbots in human resource management and serves as a useful resource for organizations seeking to leverage this technology.

Keywords: ChatGPT, AI chatbots, human resource management, HR bots, AI in HRM, artificial intelligence, future of HR, human resource technology.

1. Introduction

There is a growing interest in studying ChatGPT in HRM research as organizations increasingly explore the potential of AI chatbots in various functions of organizations, including HRM (Carter & Knol, 2019; Majumder & Mondal, 2021). Researchers are interested in understanding the implications of using ChatGPT in HRM, including its benefits, challenges, and ethical considerations (Dutta et al., 2022; Taule et al., 2022). This interest reflects the evolving nature of HRM and the need for HR professionals to remain up to date with emerging technologies and their potential impact on HR processes and employee experience. As such, studying ChatGPT in HRM research can help HR professionals make informed decisions, improve HR processes, and enhance the overall employee experience.

Incorporating ChatGPT into the HR functions of organizations can bring several benefits and advantages that can help organizations streamline their HR processes, enhance employee engagement and productivity, and improve the overall employee experience. There are several reasons why it is increasingly important to incorporate ChatGPT in the HR functions of organizations. First, ChatGPT can automate repetitive and time-consuming HR tasks such as answering employee queries, scheduling interviews, and onboarding new hires. This frees up HR professionals to focus on more strategic tasks such as talent development and retention. Second, ChatGPT can provide personalized communication and support to employees, tailoring responses and recommendations to their specific needs and preferences. This can improve employee engagement and satisfaction. Third, ChatGPT can provide instant responses to employee queries, reducing the time it takes for HR to resolve issues. This can enhance the overall efficiency of HR processes and improve employee productivity. Fourth, ChatGPT can provide support to employees 24/7, reducing the need for HR to be available at all times. This can improve the work-life balance of HR professionals and reduce the workload on HR teams. Finally, ChatGPT can collect and analyze data on employee queries and concerns, providing insights into areas of improvement and opportunities for employee development. This can help HR professionals make data-driven decisions and enhance the overall HR strategy. Incorporating ChatGPT in the HR functions of organizations can bring several benefits that can help organizations improve their HR processes, enhance employee engagement and productivity, and improve the overall employee experience. As such, it is increasingly important for...
organizations to consider implementing ChatGPT in their HR functions to remain competitive and meet the evolving needs of their workforce. Despite its overarching benefits, there are some potential challenges associated with using ChatGPT in HRM functions; for example, ChatGPT may struggle to accurately interpret the nuances and context of human language, which could lead to miscommunication or misunderstandings. It may be difficult to detect and respond appropriately to emotions, which could lead to insensitive or inappropriate interactions with job candidates or employees (Aydın & Turan, 2023; Taule et al., 2022). The use of AI chatbots in HRM raises concerns about data privacy and security, potentially compromising the confidentiality and security of personal information. The research questions are as follows: What are the potential benefits and challenges of using AI chatbots in HR management, and how do they compare to traditional HR processes? What is the future outlook for the use of AI chatbots in HR management, and how can organizations prepare for this technological shift? To address the aforementioned research questions, the purpose of this study is to identify the potential benefits and challenges of using AI chatbots in HR management and to investigate the current and future outlook for the use of AI chatbots in HR management, including trends and developments in the field, including how organizations can prepare for this technological shift.

2. Theoretical background

The use of artificial intelligence (AI) in human resource management (HRM) has gained increasing attention in recent years (Basu et al., 2022; Majumder & Mondal, 2021; Strohmeier & Piazza, 2015). In the ever-evolving landscape of human resource management (HRM), the utilization of artificial intelligence (AI) has emerged as a compelling and swiftly advancing trend, reshaping the fundamental approach organizations employ in managing their workforce (Alkhaliilah & Mjlae, 2023; Yu et al., 2023). In particular, AI chatbots have emerged as a potential tool for automating HR processes and improving candidate experiences (Allal-Chérif et al., 2021; Kshetri, 2021). AI chatbots are computer programs that use natural language processing (NLP) and machine learning algorithms to simulate human-like conversations with users (Caldarini et al., 2022; Vashisht & Dharia, 2020). They can be used for a variety of HR tasks, including screening candidates, scheduling interviews, answering frequently asked questions, and providing onboarding support (Majumder & Mondal, 2021). Theoretical frameworks that underpin the use of AI chatbots in HRM include the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT) (Mariani et al., 2023; Parvez et al., 2022). The TAM posits that perceived usefulness and perceived ease of use are the key determinants of technology adoption (Moslehpour et al., 2018). According to the UTAUT, the factors that influence technology adoption include performance expectancy, effort expectancy, social influence, and facilitating conditions (Chang et al., 2022; Korzynski et al., 2023). Another relevant framework is the resource-based view (RBV) of the firm, which suggests that an organization’s resources and capabilities are the primary drivers of its competitive advantage (Chowdhury et al., 2023; Malik et al., 2020). In the context of HRM, AI chatbots can be seen as a resource that can improve HR processes and enhance a candidate’s experience (Majumder & Mondal, 2021). By using AI chatbots, organizations can leverage their technological capabilities to create more efficient and effective HR functions. Additionally, contingency theory suggests that the effectiveness of HRM practices depends on the context in which they are implemented (Paauwe & Boon, 2018; Soewarno & Mardijuwono, 2018). The use of AI chatbots in HRM may be more effective in certain contexts, such as large organizations with high volumes of applicants or in industries with high turnover rates (Majumder & Mondal, 2021).

Furthermore, ethical considerations should be taken into account when using AI chatbots in HRM (Murtarelli et al., 2021; Rodgers et al., 2023). The principle of fairness, for instance, should be upheld to ensure that the use of AI chatbots does not lead to discriminatory practices or bias against certain groups of applicants (Gardner et al., 2022; Hunkenscheroff & Kriebitz, 2023). The principle of transparency also plays a crucial role in ensuring that the use of AI chatbots is conducted in an open and accountable manner (Basu et al., 2022).

However, the use of AI in HRM provides many benefits, such as the automation of HR processes and improved candidate experiences. Thus, theoretical frameworks such as TAM, UTAUT, RBV, contingency theory, and ethical considerations provide a basis for understanding the potential benefits and challenges of using AI chatbots in HRM. By applying these frameworks, organizations can make informed decisions about the adoption and implementation of AI chatbots in their HR processes. In light of these developments, this study aims to investigate the potential benefits and challenges of utilizing AI chatbots in HRM, exploring their impact on automation, candidate experiences, and ethical implications.

3. Materials and methods

The paper follows a systematic review methodology to address the research questions. A systematic literature review is a research method that involves a comprehensive and structured search of published literature to identify and analyze all relevant studies on a specific topic or research question (Kitchenham et al., 2009; Paul & Barari, 2022). It aims to provide a comprehensive and unbiased summary of the existing evidence on a particular subject, which can inform decision-making in various fields, including healthcare, education, and social sciences (Bos-Nehles et al., 2017; Sahabuddin et al., 2023; Van Beurden et al., 2021). The detailed methodology of this paper is shown in Figure 1.
3.1. Research type

This paper is an exploratory study that aims to investigate and analyze the potential benefits and challenges of implementing AI chatbots in human resource management (HRM) (Budhwar et al., 2006). An exploratory study is appropriate for this topic because it allows researchers to gather data and insights from various sources to understand a relatively new phenomenon, such as the use of AI chatbots in HRM (Bondarouk & Ruël, 2013).

3.2. Research philosophy

The philosophy that underpins this paper is pragmatism (Watson, 2010). Pragmatism is a philosophical approach that emphasizes practicality, experimentation, and problem solving (Kelly & Cordeiro, 2020). In the context of this research, pragmatism guides the research approach to focus on identifying the practical implications of using AI chatbots in HRM, as well as the challenges that organizations may face when implementing this technology. This research aims to provide practical insights that organizations can use to determine whether AI chatbots are a viable solution for their HRM needs.

3.3. Research Methods

This study utilized a qualitative research method to fulfill its objectives (Pham et al., 2019). The study will use purposive sampling to select HR professionals and experts in AI chatbots who have significant experience with AI chatbots in HR management. The participants will be selected based on their knowledge, expertise, and experience with AI chatbots in HR management. The study will use in-depth interviews to collect data from participants. The interviews will be conducted face-
to face, over the phone, or through video conferencing platforms. The interviews will be semi-structured, allowing participants to share their experiences, perceptions, and opinions about using AI chatbots in HR management. The interview questions were developed based on the research questions and the literature review.

3.4. Data Analysis

The data collected from the interviews will be analyzed via thematic analysis (Christensen et al., 2022). The analysis will involve identifying patterns and themes that emerge from the data. The themes will be categorized and interpreted to provide insights into the benefits and challenges of using AI chatbots in HR management. The analysis will also involve comparing and contrasting the responses of different participants to identify similarities and differences.

3.5. Ethical Consideration

The study will adhere to ethical guidelines set by the research institution, including obtaining informed consent from participants, ensuring anonymity and confidentiality of the data, and protecting the privacy of the participants. Participants will be informed about the purpose of the study, their rights as participants, and the confidentiality of the data collected.

4. Analysis and findings

According to an analysis of the literature, ChatGPT has the potential to offer several benefits in HRM functions. First, ChatGPT can automate routine HR tasks, such as scheduling interviews or answering basic questions from job candidates and freeing HR professionals to focus on more complex tasks that require human input. This can lead to improved efficiency and productivity in HR departments. Second, ChatGPT can provide timely and personalized responses to job candidates, creating a more positive and engaging candidate experience. ChatGPT can also provide instant feedback, creating a sense of transparency and fairness in the hiring process. Third, by automating routine tasks, ChatGPT can reduce the need for human resources and potentially save costs for organizations. Fourth, ChatGPT is available 24/7, providing job candidates and employees with support and assistance outside of traditional business hours. Fifth, the ChatGPT can handle a large volume of inquiries and tasks simultaneously, making it an ideal solution for large organizations or those experiencing rapid growth. Sixth, ChatGPT can collect and analyze data related to job candidates and employee interactions, providing insights that can be used to optimize HR strategies and decision-making. Seventh, ChatGPT can ensure consistency and accuracy in HR interactions by providing standardized responses and eliminating human error. Therefore, ChatGPT can streamline HR processes, improve candidate experiences, and provide valuable data and insights to support decision-making, making it an increasingly valuable tool in HRM functions.

ChatGPT also presents some potential challenges in HRM. First, as an AI language model, ChatGPT may struggle to accurately interpret the nuances and context of human language, which could lead to miscommunication or misunderstandings. This could result in suboptimal candidate experiences or inappropriate interactions with employees. Second, ChatGPT may have difficulty detecting and responding appropriately to emotions, which could lead to insensitive or inappropriate interactions with job candidates and employees. This could impact the quality of candidate experiences and overall employee morale. Third, the use of ChatGPT in HRM functions raises concerns about data privacy and security, particularly in relation to the collection and use of personal information. ChatGPT may collect sensitive information about job candidates or employees, leading to concerns about data misuse, theft or unauthorized access. Fourth, organizations may become overly dependent on ChatGPT and other AI tools, potentially reducing the need for human involvement and leading to a lack of personal touch in HR interactions. This could have a negative impact on employee morale and overall organizational culture. Fifth, while ChatGPT may be able to automate many HR tasks, it may still require human oversight and intervention to ensure that it operates ethically and effectively. This requires a high level of awareness and understanding of the potential risks and limitations of AI technology. Sixth, ChatGPT may have limitations in terms of its technical capabilities, such as difficulty understanding certain accents, dialects or languages. This could limit the accessibility of the technology and the quality of HR interactions. Therefore, organizations need to be aware of the potential challenges associated with the use of ChatGPT in HRM functions and have a strategy in place to mitigate these challenges. This requires a careful balancing of the benefits and risks associated with AI technologies in HRM.

4.1. Future outlook for the use of AI chatbots in HR management

The future outlook for the use of AI chatbots in HR management is positive, with more organizations expected to adopt this technology in the coming years. AI chatbots have already proven to be effective in streamlining HR processes and improving employee experience. As technology continues to advance, the potential applications of AI chatbots in HR management are endless. One of the key benefits of AI chatbots is their ability to provide quick and efficient responses to employee queries. With the increasing trend toward remote work and a more dispersed workforce, the need for instant responses and accessibility has become more important than ever before. AI chatbots are available 24/7 and can handle a significant number of HR tasks, freeing HR professionals to focus on more complex tasks. Another area where AI chatbots can be beneficial is

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employee onboarding. By automating the onboarding process, AI chatbots can ensure that employees have access to all the necessary information and resources. This can lead to a smoother and more efficient onboarding process, which can help employees feel more engaged and motivated from the start.

AI chatbots can also be used to improve employee engagement and retention. By collecting and analyzing data on employee interactions, chatbots can provide HR professionals with valuable insights into employee sentiment and behavior. These data can be used to identify areas where improvements can be made to increase employee engagement and retention. As technology continues to advance, AI chatbots may also be used for more complex HR tasks, such as conducting interviews and making hiring decisions. Although there is still some uncertainty about the use of AI chatbots in these areas, the potential benefits are significant. For example, AI chatbots could help reduce bias in the hiring process by removing human subjectivity and standardizing the interview process.

Therefore, the future outlook for the use of AI chatbots in HR management is accelerating, with more organizations expected to adopt this technology in the coming years. AI chatbots have already proven to be effective at improving employee experience, streamlining HR processes, and collecting valuable data. As technology continues to advance, the potential applications of AI chatbots in HR management are endless. Organizations that are prepared to embrace this technology and adapt their HR processes accordingly will be well positioned to succeed in the future.

4.2. Preparing organizations for the shifting of AI chatbots in HR management

Organizations can prepare for the technological shift toward the use of AI chatbots in HR management by taking the following steps. First, organizations should conduct a thorough evaluation of their current HR processes to identify areas that can be automated using AI chatbots. This will help them determine the most suitable areas for introducing chatbots and maximize their benefits. Second, there are many chatbot platforms available on the market, and organizations should choose the platform that is best suited for their specific HR needs. Factors such as ease of use, customization options, and data security should be considered when selecting a chatbot platform. Third, organizations should train their employees on how to use the chatbot system and the benefits it can provide. Employees may have questions or concerns about the introduction of AI chatbots, and it is important to address them and provide reassurance. Fourth, once the chatbot system has been selected and employees have been trained, organizations can begin implementing the system. It is important to start with small tasks and gradually build more complex tasks to ensure that the chatbot system functions properly. Fifth, organizations should monitor and evaluate the chatbot system regularly to ensure that it functions as expected and provides the intended benefits. Data should be collected and analyzed to identify areas where improvements can be made. Sixth, employees may have feedback on the chatbot system, and it is important to address their concerns and make any necessary changes. This will help to ensure that the chatbot system provides value to employees and contributes to the organization’s overall goals. Finally, it is essential to ensure that AI chatbots are used ethically and transparently. This means being upfront with employees and candidates about the use of chatbots and ensuring that their data and privacy are protected.

Preparing for the technological shift toward the use of AI chatbots in HR management requires a strategic approach that involves evaluating current HR processes, selecting the right chatbot platform, training employees, implementing the system, monitoring and evaluating its performance, and addressing employee feedback. By taking these steps, organizations can prepare for the future and leverage the benefits that AI chatbots can provide in HR management.

5. Discussion

The discussion section of this paper highlights the potential benefits and challenges of utilizing AI chatbots in human resource management, as well as the current and future outlook for their use. The study revealed that AI chatbots have several potential benefits for HR functions, including enhanced efficiency, improved candidate experiences, cost savings, 24/7 availability, scalability, data analysis, and consistency and accuracy (Pan & Froese, 2022). These benefits can help HR departments streamline their operations, reduce costs, and improve the overall quality of their services. Additionally, chatbots can provide a more personalized and engaging experience for candidates, which can help to attract and retain top talent. However, the study also identified some potential challenges associated with the use of chatbots in HR. These challenges include the limited understanding of human nuances and context, lack of emotional intelligence, privacy and security concerns, and the need for human oversight. These challenges need to be addressed to ensure that chatbots are used effectively and ethically in HR. The study also provides a way forward for organizations to prepare for this technological shift (Jabber et al., 2023; Kaushal et al., 2021; Sahabuddin et al., 2023). Organizations need to adopt a strategic approach to implementing chatbots in HR and should consider factors such as the type of chatbot, the scope of its application, the level of human involvement, and the training and development needs of HR personnel. Finally, this study identifies potential future research areas that can help to further advance the understanding of chatbots in HR (Malik et al., 2020). These include investigating the impact of chatbots on employee engagement and productivity, exploring the use of chatbots in employee training and development, and assessing the ethical implications of chatbot use for HR. Overall, this study provides a critical review of the benefits and challenges of utilizing AI chatbots in human resource management (Budhwar et al., 2006). By highlighting the
potential benefits and challenges of chatbots and identifying ways for organizations to prepare for their use, this study can serve as a valuable resource for HR professionals and researchers (Sakib et al., 2022).

6. Final considerations

This paper provides a critical review of the benefits and challenges of AI chatbots in human resource management. The systematic review methodology employed in this study highlights the potential benefits of ChatGPT, including improved efficiency, cost savings, and scalability, while also identifying potential challenges such as privacy and security concerns and the need for human oversight. This paper also identifies emerging trends and developments, such as the increasing use of chatbots for onboarding and training, and provides recommendations for how organizations can prepare for technological shifts. This paper sheds light on the potential of AI chatbots to transform human resource management and improve candidate experiences. However, it is important to consider the limitations of this study, such as the exclusion of non-English language publications and the focus on a specific set of databases. Further research is needed to fully understand the impact of ChatGPT on human resource management and to identify additional potential benefits and challenges. Nonetheless, this paper provides a valuable contribution to the literature on the use of AI chatbots in human resource management and serves as a useful resource for organizations seeking to leverage this technology in their HR functions.

7. Implications for theory and practice

7.1. Implications for academia

This paper has important theoretical implications regarding the potential benefits and challenges of utilizing AI chatbots in human resource management, as well as the current and future outlook for their use. First, this study highlights the numerous potential benefits of AI chatbots, particularly ChatGPT, for HR functions. These benefits include increased efficiency and cost savings, improved candidate experiences, scalability, and improved data analysis, consistency, and accuracy. Second, the paper also identifies several potential challenges that organizations may face when implementing AI chatbots in HR, such as limited understanding of human nuances and context, lack of emotional intelligence, privacy and security concerns, and the need for human oversight. Third, this study suggests that organizations need to be adequately prepared to confront these challenges and ensure the successful integration of AI chatbots in HR. This may involve incorporating appropriate oversight mechanisms, enhancing employee training and engagement, and prioritizing data privacy and security. Finally, this paper highlights potential areas for future research that can further advance our understanding of the use of AI chatbots in HR, including exploring the ethical implications of AI chatbots in HR and investigating their effectiveness in promoting diversity and inclusion in the workplace.

7.2. Implications for practitioners

This paper also has practical implications for the use of AI chatbots in HRM. First, identifying the potential benefits of AI chatbots, such as enhanced efficiency and cost savings, can inform organizations’ decision-making processes when considering the adoption of these technologies. Second, the identification of potential challenges, such as privacy and security concerns, can help organizations develop appropriate risk management strategies to mitigate potential negative impacts. Third, the insights provided in this paper can guide organizations in preparing for technological shifts toward the use of AI chatbots in HR, including the development of employee training programs and the establishment of effective oversight mechanisms. Finally, this study highlights the importance of organizations ensuring that the use of AI chatbots in HR aligns with ethical and legal considerations, such as privacy and data protection regulations. Therefore, this paper can assist organizations in understanding the potential benefits and challenges of using AI chatbots in HR and guide them in making informed decisions when considering the adoption of these technologies.

8. Limitations and future research directions

This study has several limitations. First, the study only considered the use of ChatGPT in the context of HRM and did not explore its potential benefits and challenges in other areas. Second, the study only analyzed papers written in English, which may exclude relevant research published in other languages. This may lead to a limited understanding of the global landscape of research on ChatGPT and HR. Third, the study may have some search bias because it relies on specific keywords to identify relevant papers, potentially overlooking relevant research that does not include those keywords. Fourth, the study relies solely on content analysis of papers and does not include other sources of data, such as interviews or surveys. This may limit the scope of the findings and overlook important nuances in the use of the ChatGPT in HRM. Finally, the findings of the study may only be applicable to the specific context in which the papers were published and may not be generalizable to other contexts or industries.

Based on the findings and limitations of this paper, several potential future research directions could be explored, such as first investigating the effectiveness of AI chatbots in HR functions in different industries and contexts. Second, we examined
the impact of AI chatbots on employee engagement and productivity in HR. Third, we explore the ethical and social implications of using AI chatbots in HR, including privacy and security concerns, and the potential impact on job displacement and inequality. Fourth, we examine the role of human oversight in AI chatbots in HR and how organizations can balance the benefits of automation with the need for human connection and empathy. Fifth, we investigated the potential use of AI chatbots in HR functions beyond recruitment, such as employee training and development, performance management, and benefit administration.

Ethical considerations

Not applicable.

Conflict of Interest

The authors declare no conflicts of interest.

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