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Artificial Intelligence Model for Human Capital Management

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Abstract: Artificial Intelligence is a technology that allows machines to learn and adapt quickly from given data without having to be explicitly programmed. AI has found its place in many industries and has great potential to improve the efficiency of human resources within organizations. In this article, we will discuss how the use of artificial intelligence can help improve human resource efficiency. This review is a literature search with an elaborative approach. This approach is a methodological effort by organizing the logic flow of the discussion with various compatible literature sources. Reliable literature sources come from journals, books, articles, and other sources relevant to this discourse. The result of the study is that human resource management needs to adjust to the needs of the organization and adjust the culture or corporate culture to the technological culture. Human interaction with machines is an inevitable necessity. The existence of artificial intelligence is very helpful in human resource management, for example in recruitment systems, training, data analysis, performance analysis, and operational duty efficiency.

Keywords: Artificial Intelligence; Human Capital; Management

Introduction

The implementation of AI takes a number of different forms. One possible form is robotics automation, which helps workers perform routine or repetitive manual tasks (Sakka et al., 2022). Another form of AI implementation is machine learning, which allows computers to function without the need to implement recursive scripts (Raschka et al., 2020; Sarkar et al., 2023). Instead, machine learning allows computers to collect and interpret input directly, analyze work and business processes, detect and translate languages, as well as design and automate production (Sakka et al., 2022). An example of the power of machine learning would be the prototype of a self-driving car that is capable of discharging such tasks as picture acknowledgement, deep learning, and machine vision (B. Zhang et al., 2023).

AI also can see as a instinctual artificial intelligence, which tries to replicate cognitive abilities by basic arithmetical models (Barthelme & Furbach, 2023) that constitute inferential intelligent behaviors with sequences of self-organization simpler structural parts ("behavioral artificial intelligence") to simulate real biological processes (Ramanathan et al., 2021). There aren't many places now where humans and robots don't coexist (Lee, 2021). We believe we are constantly one step ahead of the game. Despite the fact that robotics can be sharper and faster, human characteristics like inventiveness and empathy are only seen in science fiction (Ajeesh & Rukmini, 2023). However, if the human brain evolves via experience and learning, it is theoretically possible for machines to do the same (Bongard & Levin, 2021). We utilize 'robots' in advertising to provide more customization than individuals have indeed been able to provide in recent decades (Sığırcı, 2021).

AI is a brand-new technology that permeates all facets of life and is built on a foundation of big data (Xia et al., 2022; Xie, 2022). There is little re- search on the use of AI in the fields of human resources and economic management. Related scholars have focused a lot of their research on the use of AI in the technical field (Xie, 2022). The term "artificial intelligence" is a Dart organization organized by John McCarth in 1956. The discussion meeting of the Mouss summer research project proposed

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to explore where the machine can be the aspect simulates human intelligence (Hu, 2020).

Artificial Intelligence (AI) techniques are being increasingly deployed in finance, in areas such as asset management, algorithmic trading, credit underwriting or blockchain-based finance, enabled by the abundance of available data and by affordable computing capacity. Machine learning (ML) models use big data to learn and improve predictability and performance automatically through experience and data, without being programmed to do so by humans (OECD, 2021).

In modern industry, the use of AI is increasingly widespread, as is the breadth of human technological needs. Humans with all their needs are moving increasingly complex with extraordinary acceleration. Within an organization, the use of AI has penetrated into complex divisions to an increasing degree. The marketing division, for example, already has its own AI system.

Multiple ecosystem services (ES) delivered from the socio-ecological systems could directly or indirectly benefit human society derives (Wu et al., 2022). Artificial intelligence (AI) is all the rage in business and particularly, in the finance sector. It is pitched to drive economic growth through increased efficiency and productivity (Ashta & Herrmann, 2021) So does the production division, including the human resources division.

In this discussion, a pragmatic approach to the use of AI for human resource management in organisations will be discussed. The description will start with the historical aspects of AI and then continue with its use in the field of human resource management. Human resource is an elementary element that is one of the factors of production in a business unit.

Method

The type of research used in this study is descriptive research with a qualitative approach (O'Connor et al., 2023). The data taken, identified in the following order: data collection; data sorting; data analysis; conclusion making. As for data analysis, there is a predetermined sequence in accordance with the empirical steps taken, namely as follows: Examination of data; suspected data findings; Data confirmation; Diagnosis; and Action.

The description of the data, presentation, analysis and findings that will be obtained from this study will be written in the paragraphs below, in the research discussion segment. Artificial intelligence fulfills its destiny to become a business instrument, which in the discourse of this study is the marketing of various products, both from the government and from the business world, from micro to multinational scale. The financial supervision department further clarifies the supervision responsibility, applies artificial intelligence technology to supervision methods and means, and improves the degree of supervision automation and intelligence.

Result and Discussion

The Beginnings of Artificial Intelligence

The term artificial intelligence was first coined by John McCarthy in 1956 when he organised the first academic conference on the subject. But the journey to understand if machines can really think started long before that. In Vannevar Bush's As We May Think (1945) he proposed a system that amplifies people's knowledge and understanding. Five years later Alan Turing wrote a paper on the idea of machines that could simulate humans and the ability to do intelligent things, such as playing chess (1950). Artificial intelligence is a big umbrella. Under it, we find visual recognition, voice recognition, natural language processing, expert systems, affective computing, and robotics (Siregar et al., 2020).

Figure 1. Artificial intelligence development method (Source: Umi, 2022).

Artificial intelligence has actually started since the summer of 1956. at that time a group of computer experts, experts and researchers from other disciplines from various academies, industry and various groups gathered at Dartmouth College to discuss the potential of computers to mimic or simulate human intelligence. to mimic or simulate human intelligence. Some of the scientists involved were Allen Newel, Herbert Simon, Marvin Miskey, Oliver Selfridge, and John McCarthy. Since then, experts began to work hard to create, discuss, change and develop until it to the point of full progress. Starting from the laboratory to the implementation of real work (Umi, 2022).

In the beginning, artificial intelligence existed only in universities and research laboratories, and very few - if any - practical products had been developed. Towards the end of the 1970s and early 1980s, it began to be fully developed and the results gradually came to market. Today, many research results are being and have been 1 are being converted into real products that bring benefits to the users (Umi, 2022).

The Use of AI in Human Capital

Artificial intelligence (AI) is a term used to describe the ability of computer systems to perform tasks that would normally require human intelligence (Ahmed et al., 2022; Drukker et al., 2020). AI applications are designed to mimic human behaviour. As a result, they can be more efficient than humans in tasks that require speed or a significant level of detail. HR departments can use AI to automate tasks that have been done manually.

Digital Employee Management (DEM) refers to the planning and network, the HR functions such as pay roll processing, attendance management or record keeping, compensation, performance management or development are digitally supported and enabled and thereby often deeply changed. This ongoing digitalization of HRM practice is basically assumed to offer large opportunities for the discipline. It is present throughout any business and in the everyday lives and interactions of employees (Prakash et al., 2019).

The impact of the rapid growth digitally has meant that a lot organization have had to adapt to new market expectations. In case of HR, technology helps in all processes from recruit to retire functions and has drastically changed the way employees and managers get access to the HR data. The HR leaders face challenges in using technology in a HR perspective to connect and to inform employees (Arora et al., 2021; Prakash et al., 2019).

HR-IT has achieved much importance now because of its significant usage in the organizations to increase the productivity through maximizing the value of the organization employees in the digital age, it is imperative to train a HR based on the capability to handle large amounts of information and subsequently transfer the same information, after processing and repackaging the formation, efficiently, faster and effectively (Malik et al., 2020).

The effect of information and communication technology (ICT), the world becomes the proverbial globe. Designing mobile apps and considering the end-to-end user experience are new disciplines for HR, combining design thinking with apps, video, social and mobile technologies (Prakash et al., 2019). Furthermore, the utilisation of AI in HR management includes the following:

Recruitment

The recruitment process is one of the important aspects of HR management in a company (Köchling & Wehner, 2020). The use of artificial intelligence in the recruitment process can help companies to find candidates that suit their needs more quickly and effectively (Laurim et al., 2021). AI algorithms can be used to sort through thousands of CVs to find candidates that best match the criteria desired by the company. In a very short time, companies can call the best candidates for tests and interviews, thus speeding up the recruitment process.

Training

Employee training is one of the most important aspects of HR development in a company. AI can help identify areas that require training and provide specific training recommendations to employees based on performance and company needs (Chen, 2023). Thus, companies can provide the right training to employees and improve their performance effectively.

Performance Management

Performance management is the process of evaluating employees in achieving company goals. AI can help companies evaluate employee performance quickly and accurately based on data collected over a period of time (Tong et al., 2021). This allows companies to make better decisions in HR development, such as providing incentives or promotions to high-performing employees.

Data Analytics

Data is a valuable asset for companies in making business decisions. AI can help companies in analyzing data effectively and quickly to provide better insights in HR development. By collecting data from various sources such as attendance, productivity, and employee performance, companies can use AI algorithms to analyze the data and provide insights into emerging trends or patterns.

Cost Savings

The use of artificial intelligence in HR management can also help companies save costs. AI can help identify inefficient processes in HR management and provide recommendations to improve efficiency. Thus, companies can save costs that would otherwise be used to pay salaries or provide incentives to employees.

AI And Digital Human Capital Management

In the present scenario, business is conducted with the needs and demands for the international business motive, also goods transfer takes place from one country

to another, services, managerial knowledge, and technology transfer also takes place between countries. Globalization made the entire world small in the means of communicating with others. The financial and economical patterns of the world have been integrated with better advancement (Varadaraj & Al Wadi, 2021).

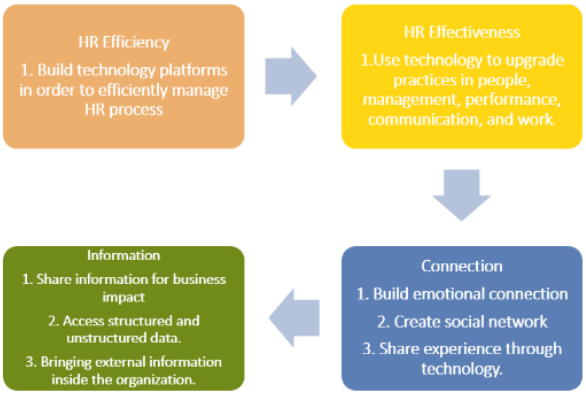

Figure 2. HRM Agenda Design *Source*: (Varadaraj & Al Wadi, 2021)

The efficiency of HRM will be seen through the recruitment process mainly. In an Internet-based Society, it would be very helpful for the human Resource Management Department to try to understand and analyze the relationship between Human Resource and Information Technology. The analysis must be implemented in HR for enhancing the performance of HR along with the integration of Information technology. Adaption of digital technology will create a complete balance between efficiency and innovative aspect of any organization. Due to Human Resource management being a central unit for many organizations it is responsible for designing the organizational structure, the collaboration between the two is highly significant (Varadaraj & Al Wadi, 2021).

The last two decades HRM is getting more digitalized. Artificial Intelligence machines enhance people analytics and extend human cognitive capabilities. Machine learning helps in problem solving and natural language processing (NLP) coupled with good people analytics changes the way employees can be managed (Chytiri, 2019).

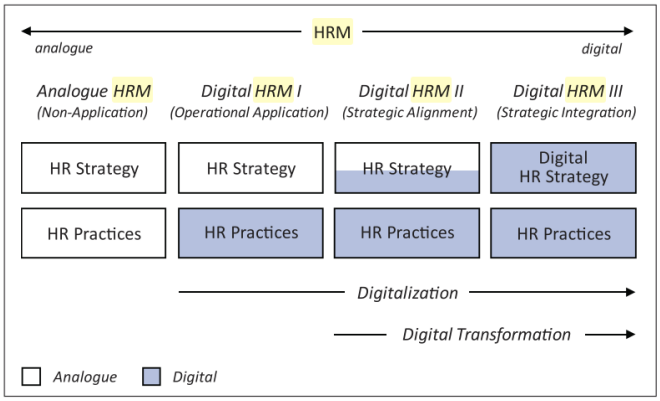

Figure 3. Digital HRM Typology *Source:* (Strohmeier, 2020)

The above typology is thus likewise based on a digitalization continuum with two ideal-types with minimum and maximum digitalization as endpoints. Again, the digitalization of HRM starts with the second ideal-type and gradually intensifies to the fourth ideal-type. The resulting three different sub-categories of "digital HRM" allow for a concretization and categorization of the concept of digital HRM that has remained rather broad in the terminological discussion (Strohmeier, 2020).

Patmore said that it appears that HR professionals need to be digital-ready to strengthen their position in business and revolutionise employee experience by incorporating people, HR technologies and processes in a new digital ecosystem. It means being prepared to embrace digital technologies and having the necessary awareness, skills, and resources to use them to meet current employee expectations, improve business flexibility and increase its efficiency (Mazurchenko & Maršíková, 2019).

Digitization is not only just about using digital tools within an organization, but it is also a tool for implementing these innovative busi- ness models and long-term corporate strategies. Verhoef argue that digitalization describes how digital technology can be made to change existing busi- ness processes. This change requires the intervention of digital technology to shape the new organizational technology structure, which would not have been possible without the timely intervention of digital technology. In the digital domain, informa- tion technology may facilitate business process relationship management and is better suited to the organization, becoming key elements of HRM operations that drive innovation (J. Zhang & Chen, 2023).

Conclusion

The use of artificial intelligence in HR management can help companies improve the efficiency and

productivity of human resources. The use of AI in recruitment can speed up the process of finding the best candidates, while its use in training can help companies provide the right training and improve employee performance. In addition, AI can also help in employee performance management and provide better insights through data analysis. Finally, the use of AI in HR management can also help companies save costs. However, keep in mind that the use of AI in HR management should not be used as a substitute for humans. While AI can help improve efficiency in HR management, the final decision should always be made by competent and experienced humans. Therefore, companies should ensure that the use of AI in HR management is done carefully and judiciously. Overall, the use of artificial intelligence in HR management has great potential to improve the efficiency and productivity of companies. However, companies must ensure that its use is done carefully and wisely, and always pay attention to ethical factors and privacy policies in data collection and processing. Thus, companies can utilize the potential of artificial intelligence to improve the efficiency of their human resources and enhance their overall business performance.

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Conflicts of Interest
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