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cte@uniri.hr

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The Impact of Artificial Intelligence on Human Resources Management in Organizations: A Review of Literature

University Ovuokeroye Edih, Yerin Ekpedibo Yerin

Nigeria Maritime University Okerenkoko

Department of Maritime Economics and Finance

Gbaramatu, Delta State, Nigeria

oweilade123uni@gmail.com

Abstract

Change is the only constant phenomenon which stands to be inevitable. The evolution of artificial intelligence (AI) is one of the changes revolutionizing the world in several areas. Based on this background the study examines the roles of AI in human resources management in dynamic business environments: a review of literature. Findings suggest that in today's dynamic business environments, artificial intelligence is pivotal to ensuring effective management of human resources in the organization. AI systems have the technical potential to revolutionize the human resources management practice in competitive business environments. AI can improve organizational efficiency, and job satisfaction by automating several managerial functions. These functions are; accounting processes, and employees' responsibilities and engagements, which are not restricted to recruitment and selection processes, workers training schedules, performance management/appraisal, cost minimization and profit maximization objectives, reward system through AI algorithms, feedback measures, and other areas of human resources management practices. AI technologies can automate mundane tasks, streamline management practices, and provide customized solutions for managers and leaders. This study further considers the essentials of AI in managing the human asset in complex and dynamic and turbulent business environments. It dissects the challenges and implications of implementing AI solutions to the management of the human resources in the organization. Thus, the paper concludes that modern business organizations should employ the knowledge of AI and data analytics to manage its human resources since both enhance organizational efficiency, promote the use of digital knowledge, improve employees' development, and performance as well as sustainable profitability.

Key words: AI; human resources; impact; management; organization; literature review

1 Introduction

"Change" is the only constant in a volatile, uncertain, complex and ambiguous world (Nawaz et al., 2024). It's no longer news that the world and its activities are becoming operationally digital. The vogue is the internet of things (IoTs). Almost everyone in the world is holding a smart handset and business and academic meetings or conferences are held through zoom or virtual mechanisms. Artificial intelligence is one of the greatest innovations that is complementing human's efforts in managing multidimensional activities, especially in the business environments. According to Morgenstern et al., (2021), and Nawaz et al., (2024) AI is ubiquitous in every endeavour of life in the past two decades. Artificial intelligence is useful in several fields, such as engineering, agriculture, medicine,

transportation and tourism, and human resources management, financial management, and in other areas (Mintz & Brodie, 2019). It is also relevant in politics and elections (the BVAS - *Biometric Voters Accreditation Systems*). It is trite to conclude that AI technologies are applied by both the public and private sectors (Haenlein & Kaplan, 2019).

Ertel(2011) suggests that AI technologies and applications are not a universal recipe because every AI software is designed and trained to perform specific tasks. AI developers are knowledgeable in the selection of the appropriate software to solve defined problems. By way of definition, "Artificial intelligence is a system's ability to interpret external data correctly to learn from such data and use such experience to achieve predetermined goals and tasks through flexible adaptation" (Haenlein & Kaplan, 2019; Nawaz et al., 2024). Ozili (2021) defines AI as "the simulation of machines to imitate intelligent human behaviour, or intelligence demonstrated by machines or simulation of human intelligence in machines to think and act like humans".

With the fast space at which AI has penetrated every sphere of human existence (Wang et al., 2020), it would assist in transforming people's lives, employees and customers' relationships as well as the decision-making process of the employers or management. In Ravin (2017) and Nawaz et al., (2024), AI systems have transformed the workplace and changed the when, how, where, what and whom to carry out a specific job or task. Artificial intelligence workspace has led to employee's satisfaction, integration of better work-life and organizational productivity (Malik et al., 2021). AI has been softly described as a process of "disruption". Every new or novel model or technology is usually a disruption of the old order. So, AI has caused a digital upheaval, however, it's a progressive digital upheaval leading to growth and success of companies which integrated AI into its decision-making process (Nawaz et al., 2024; Varsha, 2023). With the smart innovations through AI, organizations must upgrade their functioning capabilities and develop the human resources skills to achieve better performance. Human resources are complex organizational assets, which need scientific managerial tools that are found in AI to successfully manage (Wiradendi, 2020; Waheed et al., 2019).

Internet of things (IoTs), machine learning and AI are management tools used to tackle the challenge of high cost of production and save time (Meshram, 2023). It is certain that AI is a useful digital mechanism for managing the human resources in modern organizations. However, AI adoption in the organization is affected by several challenges. Though, these AI related challenges did stop companies from utilizing AI-based technologies in the management of their human resources (George & Thomas, 2019). To

achieve the enormous benefit from AI systems, workers must be trained on how they are to be put into use (Mathipriya et al., 2019). The experience of COVID-19 compelled companies to adopt AI in the management of human resources and rendered efficient services to their customers. Human resources functions were digitized and automated, such functions like, hiring, onboarding, performance appraisal, and others (Nawaz et al.,2024; Minbaeva, 2021).

Garg et al., (2022) and Nawaz et al., (2024) state, application of AI technologies in human resources management have yielded efficient and effective services delivery, improved employee experience and overall organizational performance. AI in human resources management (HRM) offers definite solutions to defined tasks, automation of repetitive tasks to enhanced human resources process with neutralized biases. It is not enough to be familiar with the concepts of AI, Automation or Robotics, big data (data analytics), Machine learning and neural language, but their implementation or application in the management of the organization is prominent. It is shown that such application of AI technologies is deficient in the organizations (Nawaz et al., 2024; Minbaeva, 2021). Apart from the deficiency of applying these AI-based technologies, most organizations do not understand the impact of these intelligent technologies in managing HRs (Vrontis et al., 2021).

In the following sections, we will discuss the essentials of AI in business organization, AI and HRM, the challenges of AI, suggested solutions and finally, the conclusion.

2 The multidimensional essentials of artificial intelligence to the business world

On a general assessment, AI-based technologies have permeated every field that supports the existentialism of man. The influence of AI is felt both in the public and private sectors. The manifest impact of Artificial Intelligence on business organizations seems to be inevitable in modern times. Prominent areas where AI systems are featured are the fields of engineering, financial services firms, and organizational management, etc. Application of AI systems reduce cost of production and improve overall organizational performance (Coombs & Chopra, 2019). In the areas of rendering financial services to customers, AI technologies eliminate biases or omissions common with manual auditing and investigation (Omotseso,2012). With the adoption of AI-based technologies, verification exercises have been

simplified and done within a short period of time (Council, 2019).

AI systems have taken the strenuous work done by excel spreadsheet and manual review of contract papers, thereby, expedite the process of mergers and acquisitions through due diligence (Young et al., 2018). Insurance services have benefited from the use of AI technologies or software's. AI is used at the front office of insurance companies as chatbots that streamline consumer's claims and prevent or detect fraud and fraudulent claims by insurers (Nonninger, 2019). AI and data analytics are veritable instruments of enlightenment and education on financial concepts and raising the level of financial literacy and inclusion in the society.

3 Artificial intelligence and human resources management

AI plays significant and diverse roles in human resources management. Such important roles cut across every human resource management practice. AI has been integrated into human resources management procedures to bolster sustainable business framework (Votto et al., 2021). AI systems facilitate the recruitment process of an organization which help to employ skilled manpower for efficient delivery of services (Meshram,2023). AI technologies offer fresh opportunities for organizational management by recruiting highly skilled personnel (Khaled et al., 2023; Hemalatha, 2021). AI training tools enhance personalized training needs and quality of learning (Chen, 2022), and with the injection of AI based software in our organization, it presents a platform that drives value for the customers, employees and the organization (Chowdhury et al., 2023). AI technologies have produced visible results in the HRM in the area of ensuring accuracy, automation, personalization, time saving and cost reduction, computing power and capacity, real time experience (Nawaz et al., 2024).

Hmoud and Varallyai (2020) state that AI technologies ensure accuracy by neutralizing biases. Such technologies provide solutions for recruitment exercises carried out by organizations. By taking over the screening of applicants to the period of employees' retention, repetitive tasks and time are eliminated or reduced by automation. Also, Parry and Battista (2019) argue that through extrapolative algorithms automated by AI technologies, intricately planned decisions are made. Certainly, by automation of repetitive tasks, human errors and associated risks are reduced. According to Hemalatha et al., (2021), AI systems save time, are cost effective, accuracy, bias-free and reduce workload per worker. The adoption of AI technologies in organizations have helped to automate the following administrative and rhythmic tasks- job posting, sourcing, screening, interview sections, meetings, preparation of schedules, timesheets, recording, verification of account, and many more duties (Baggio & Omana, 2019; Nawaz & Gomes, 2019). With the assignment of routine tasks to AI systems, management has much room for creative and strategic leadership thinking (George & Thomas, 2019).

According to Gopal et al., (2018), real-time interactions lead to effective use of scarce resources and services and reduce cost. More so, internet of things (IoTs) facilitates the transformation of physical properties into digital realm which create vast amount of real-time data (Sivathanu & Pillai, 2018). AI-based systems enable real-time video interview of applicants across the globe with a short period of time (Thomas et al., 2020). Jarah (2018) reveals that AI enables managers to detect aberration by giving real-time comprehension about premature caution signals. In the study of Khatri et al., (2020), AI has the capacity to sense, to investigate, study and operate as a personalised system like humans. Through chatbots, applicants and employees provide personalized data, instructions and support for re recruitment and other purposes in the organization. Nawaz et al (2024) are convinced that AI has the potential to ensure mass personalization of employees training and development programmes.

4 Challenges confronting adoption of ai in the industries

The following challenges inhibit the application of artificial intelligence systems in the organization; lack of large data, lack of explanation and transparency, challenge of exclusion, lack of manpower, lack of regular supply of electricity (Coombs & Chopra, 2019; Edih & Osadume, 2025).

Lack of large data in the organization: AI technologies function very well with large labelled and categorized dataset. AI capabilities are trained to utilize large data. These required large amount of data are not available in the organization.

Lack of explanation and transparency of the AI-algorithm process: AI technologies make decisions through the use of algorithms whose process is unknown to even experts. Based on the EU regulations (the General Data Protection Regulations, GDPRs), citizens have the right to know the process of making decisions. AI has device two ways of enhancing transparency in the decision-making process, such as, Local Interpretable Model Agnostic Explanations (LIME), and the Attention Techniques (AT). In both

processes, inputs used in the decision making are shown to the stakeholders (Coombs & Chopra, 2019).

Challenge of Exclusion of Experience: AI systems are trained to resolve or solve a particular task and it is difficult to transfer the method to solve another problem. This amounts to the exclusion of such experience, unlike human who solves new issues with past experiences. AI software is designed to solve peculiar problems, not necessarily for all issues in the organization. However, through higher creativity, AI through Generalized Structure and Meta Learning can automate a design for neural network for different tasks (Edih & Osadume,2025).

5 Suggested solutions

Edih and Osadume (2025), and Coombs and Chopra (2019), provided cogent solutions to the challenges of adopting AI technologies in human resources management and practices in the organization.

First, organizational leaders should provide large labelled and categorized dataset required for AI manipulations and algorithms. AI technologies deal with big data analytics.

Second, with the advent of generalized structure and Meta Learning methods, AI systems can solve different tasks if the software is trained and configured to do so. In that case, organizational leaders or managers should streamline the essential management practices and issues to be resolved by AI-based technologies. This will help to eliminate the challenge of Exclusivity of experience.

Third, organizational leaders should train its manpower to be proficient with the use of AI-based systems. AI technologies cannot be operated in a vacuum. They are machines which have to be used by human or personnel in the organization.

Fourth, it is wise to adopt AI-based technologies in phases, for example, stage 1 is assisted intelligence, stage 2 is augmentation intelligence, and stage 3 is autonomous intelligence.

Five, delegation of decision-making process is key. Smart and intelligent decisions could be made by workers at the lower level of management who are trained on how to use AI software and are delegated to make decisions on certain areas too. A rigid senior level authorization-based structure hinders the making of smart decisions by intelligent lower-level employees.

Sixth, the government should provide conducive business environment to enhance economic activities. Good laws, and favourable tax regimes and good political leadership are universal recipe for a prosperous business environment.

6 Conclusion

Human resources management and practices (HRMP) are not easy tasks for organizational leaders and managers. Also, humans (employees) are the most complex and dynamic assets to be managed in the organization. More so, the world being a global village arising from the influence of Technological advancement in transformation and communication. Modern workers are grounded with global norms and values, bilateral and multilateral treaties that informed their reactions to policies, programmes, and procedures implemented in the organization. Apart from internal dynamics in the organization, there are external pressures, such as uncertainties of the business environment, competition and global influence, which the organization is contending with. Considering these pressures, it is not advisable to manage the human resources or other aspects of the organization using the traditional manual approach only.

Though AI appears to be ubiquitous in all fields, it's not a universal recipe. However, it's obvious that the importance of AI should in the management of the organizations cannot be overemphasized. From the discourse, AI technologies are useful digital mechanisms that improve organizational management practices, especially in human resources management such as recruitment process, selection and placement, assignment of routine tasks, performance appraisal exercise, payrolls, reward system, and many more.

These objectives can be achieved by employing the services of AI experts in designing the required AI software and training workers that would operate the AI-based systems. Lastly, AI technologies have to come to stay and organizations that must remain competitive in a dynamic business environment must adopt AI to complement the traditional human resources management practices.

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