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Constraints of Artificial Intelligence Integration in the 21st Century Human Resource Management in Higher Institutions in Nigeria

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Abstract

The integration of artificial intelligence (AI) in human resource management (HRM) has transformed the way organizations operate, but its adoption in higher institutions in Nigeria is faced with numerous constraints. The integration of AI in 21st HRM is germane in areas such as talent management, employee engagement, performance management, training and development and so on. This study identified and examined the constraints hindering the effective integration of Artificial Intelligence in the 21st century human resource management in Nigerian higher institutions. They include limited technical expertise, inadequate infrastructure, high cost of implementation, data privacy and security concerns, resistance to change from staff, limited access to funding, inadequate policy and regulatory framework, limited awareness and understanding of Artificial Intelligence benefits, dependence on manual processes, and limited availability of AI-powered human resource tools. These constraints pose significant challenges to the successful adoption of Artificial Intelligence in the 21st century Human Resource Management in Nigerian higher institutions, leading to inefficiencies, ineffectiveness, and lack of competitiveness. The study suggested strategies to address these constraints, including training and development programmes, infrastructure upgrades, cost-benefit analysis, data protection policies, change management, funding exploration, policy development, awareness creation, process automation, and collaboration with vendors. Addressing these constraints will enable Nigerian higher institutions to leverage Artificial Intelligence in Human Resource Management, enhancing their operational efficiency, effectiveness, and global competitiveness.

Keywords: Constraints, Artificial Intelligence Integration, Human Resource Management, Higher Institutions.

Introduction

The 21st century has witnessed a rapid evolution in technology, with artificial intelligence (AI) emerging as a transformative force across the sectors, including human resource management (HRM). In Nigeria, higher education institutions are increasingly recognizing the potential of AI to streamline human resource (HR) processes, enhance decision-making, and improve overall organizational efficiency. Artificial intelligence (AI) refers to the development of computer systems that can perform tasks that would typically require human intelligence, such as learning, problem-solving, decision-making, and natural language processing (NLP). UNICEF (2021) defined Artificial intelligence (AI) as machine - based system that can give a set of human-defined objectives, make predictions, recommendations, or virtual environment either directly or indirectly. UNICEF further stated that AI is crucial in

HRM for various reasons: enhanced efficiency, data-driven decision making, personalized employee experience, improved talent management, streamlined recruitment, compliance, risk management, and competitive etcetera. AI has transformed various industries, and its effects on human resource management are significant.

According to Elenwo & Ebom-Jebose (2024) human resource management is the process of managing the organizational staff in a structured and systematic manner which ensures the success of organization or company. Human resource management is a vital function in organizations, responsible for managing the workforce and optimizing performance. Despite the potential benefits of AI in transforming human resource management practices, higher institutions in Nigeria face significant constraints in integrating AI into their human resource management systems, including limited technical expertise, inadequate infrastructure, high cost of implementation, data privacy and security concerns and so on (Ojo, 2018). These constraints hinder the effective adoption and utilization of AI in human resource management, resulting in missed opportunities for improved efficiency, enhanced decision-making, and personalized learning experiences. Therefore, the study seeks to investigate the constraints of artificial intelligence integration in the 21st human resource management in higher institutions in Nigeria and provide suggestions for addressing these constraints to ensure effective artificial intelligence integration and utilization in human resource management practices.

Brief Overview of AI and Human Resource Management

Human resource management is a strategic and coherent approach to the management of an organizational most valued assets that is; the people working there who individually and collectively contribute to the achievement of its objectives. Elenwo and Nte (2024) referred to human resource management as the people who cuts across the rank and file in the organizations whose services aid in the achievement of organizational goals. Human resource management is any organization's critical function, managing the workforce and ensuring optimal performance.

Artificial Intelligence (AI) has emerged as a powerful tool in various industries, fundamentally transforming how organizations operate. In the realm of human resource management, AI applications are reshaping traditional practices, enhancing efficiency, and enabling data-driven decision-making (Jarrahi, 2018).

In HRM, AI encompasses a range of technologies, including machine learning, natural language processing, and data analytics, that automate and optimize HR processes. With the advent and

integration of artificial intelligent technology in organizations, HRM has witnessed significant transformation that have enhanced efficiency and effectiveness. In the context of human resource management in higher institutions, AI can be integrated in various areas, including but not limited to recruitment and selection, talent management, employee engagement, performance management, and training and development.

AI Integration in Recruitment and Selection

AI integration in recruitment and selection refers to the use of artificial intelligence technologies to streamline and enhance the hiring process. Cath (2020) stated that the recruitment and selection process has undergone a significant transformation with the advent of artificial intelligence (AI). This technological revolution has brought about a paradigm shift in the way organizations identify, attract, and hire top talent. According to Goodfellow (2016) AI-powered tools have streamlined the hiring process, reducing the time and effort required to find the best candidates and automated candidate sourcing has become a norm, with AI algorithms scouring social media, job boards to identify potential candidates. Also, predictive analytics has also emerged as a game-changer, enabling organizations to forecast the success of future candidates based on data from past hiring processes and chatbots and virtual assistants have taken over the initial stages of candidate engagement, providing personalized communication and timely updates.

Natural Language Processing (NLP) has enabled the analysis of resumes, cover letters, and other text-based data to identify top candidates as video interviewing has also become a popular tool, assessing candidate responses, body language, and tone to evaluate fit (Ford, 2019). The integration of AI has also helped reduce unconscious bias in hiring, focusing on skills and qualifications rather than personal characteristics, enhanced candidate experience has become a priority, with AI-powered tools providing personalized communication and timely updates throughout the hiring process and efficient screening has reduced the workload for recruiters and hiring managers, enabling them to focus on high-value tasks. Data-driven decision-making on the other hand has become the norm, with AI providing insights and analytics to inform hiring decisions.

AI Integration in Talent Management

The integration of artificial intelligent in talent management has revolutionized the way organizations approach human resources. This fusion has transformed talent acquisition, performance management, learning and development, succession planning, diversity and

inclusion, employee engagement, and workforce planning. Talent acquisition has become more efficient with AI- powered tools that identify top candidates, predict success, and enhance candidate experience (Goyal & Kumar, 2020). Dastjerdi and Gao (2017) opined that AI has achieved the following: performance management has evolved with AI-driven systems that analyze data, provide personalized feedback, and pinpoint areas for growth, learning and development have become tailored experiences, courtesy of AI-based platforms that offer customized learning recommendations and track progress, succession planning has transformed with AI algorithms that identify potential successors, predict talent gaps, and strategize for future talents, diversity, equity, and inclusion have been amplified with AI's ability to reduce bias in talent decisions, improve diversity metrics, and foster inclusivity, and employee engagement has been redefined with AI-powered tools that analyze sentiment, identify engagement drivers, and provide personalized recommendations. Bhattacharya and Chakraborty (2020) averred that workforce planning has become a predictive science, with AI forecasting talent needs, identifying skills gaps, and strategizing for future workforce requirements. The harmonious union of AI and talent management has yielded numerous benefits, including enhanced efficiency, improved accuracy, personalized experiences, data-driven decisions, increased diversity and inclusion, better employee engagement, and a future-ready workforce (Kaplan & Haenlein, 2019).

AI Integration in Employee Engagement

The integration of artificial intelligence in employee engagement has revolutionized the modern workplace. AI-powered tools have personalized communication, conducted sentiment analysis, predicted employee turnover, facilitated feedback, and offered wellness and support (Kaplan & Haenlein, 2019). Predictive analytics has also, forecasted employee retention, enabling proactive measures to retain top talent as recognition and rewards programs have been optimizing using AI-driven systems and striking the right chord. According to Srivastava and Singh (2020) AI-driven learning and development platforms have orchestrated personalized growth opportunities and benefits which includes enhanced employee experienced, improved productivity, increased retention, personalized support, data-driven insights, and competitive advantage.

AI Integration in Performance Management

AI integration in performance management refers to the use of artificial intelligence technologies to enhance and automate performance management processes, providing data-

driven insights and recommendations to improve employee performance and organizational success. Rasmussen & Ulrich, (2019) opined that the integration of artificial intelligence in performance management is transforming the way organizations evaluate and enhance employee performance. AI-powered tools are streamlining the performance management process, providing data-driven insights, and fostering a culture of continuous improvement. Also, AI-powered tools have automated performance tracking, predicted employee potential, and facilitated 360-degree feedback (Kumar & Goyal, 2020). Ojo (2018) stated that the benefits of AI integration in performance management include data-driven decision-making, improved accuracy and efficiency, enhanced employee experience, increased transparency and fairness, better talent management and competitive advantage. By integrating AI in performance management, organizations can create a more agile, data-driven, and effective performance management process, driving business success and employee growth.

AI Integration in Training and Development

In the 21st century, the field of training and development according to Ford, (2019) has undergone a significant transformation with the integration of AI. The traditional training methods, which were once static and one-size-fits-all, have now been revolutionized by AI-powered tools and technologies. The use of AI in training and development has become increasingly prevalent, with many organizations leveraging its capabilities to analyze employee skills and knowledge gaps, provide personalized learning recommendations, deliver interactive and immersive learning experiences, and track and measure employee progress and performance (Adeyinka & Oyelade, 2019). AI-powered tools such as machine learning, natural language processing, and predictive analytics are being used to create intelligent tutoring systems, virtual reality simulations, and gamified learning platforms. The integration of AI in training and development has also raised important questions about the future of work, the role of human instructors, and the potential biases in AI decision-making.

Current State of Human Resource Management in Higher Institutions in Nigeria

The current state of human resource management in higher institutions in Nigeria is characterized by:

1. Inadequate Funding: Many higher institutions in Nigeria suffer from chronic underfunding. This financial constraint affects their ability to recruit and retain qualified staff, invest in staff development programmes, and maintain competitive salaries and

benefits (Okebukola, 2019). Limited funding also hampers the adoption of advanced human resource management technologies, including AI.

2. Bureaucratic Processes: HRM practices in higher institutions are often characterized by bureaucratic red tape and inefficiencies. Mbah (2016) opined that lengthy administrative procedures for recruitment, promotions, and other HR functions can lead to delays and dissatisfaction among staff.
3. Staff Shortages and Brain Drain: There is a significant shortage or qualified academic staff in many Nigerian institutions. This is exacerbated by brain drain, where talented professionals migrate to other countries or sectors in search of better opportunities. This shortage impacts the quality of education and increases the workload for existing staff.
4. Inconsistent Training and Development: Professional development and training opportunities for staff are inconsistent and often inadequate. Many institutions lack structured programmes for continuous learning and development, which affects staff performance and career progression Onah (2018).
5. Resistance to Change: Resistance to adopting new HRM practices and technologies is a notable issue. Many staff members are accustomed to traditional methods and may be reluctant to embrace changes, including the integration of AI and digital tools in HRM processes.
6. Data Management Issues: Effective HRM relies on accurate and comprehensive data management. However, many Nigerian institutions struggle with outdated and fragmented data systems, leading to challenges in tracking employee information, performance metrics, and other critical HR data.

Constraints of Artificial Intelligence Integration in the 21st Century Human Resource Management in Higher Institutions in Nigeria

1. Limited technical expertise: Higher institutions in Nigeria lack the necessary technical skills and knowledge to effectively implement and manage AI-powered human resource systems. Oladimeji (2020) opined that the lack of technical expertise is a significant barrier to AI solutions.
2. Inadequate infrastructure: The poor state of digital infrastructure in Nigerian higher institutions hinders the adoption of AI-driven human resource management solutions. Bakare (2018) asserted that inadequate infrastructure including hardware and software hinders AI adoption in human resource management.

3. High cost of implementation: The high cost of purchasing and maintaining AI-powered human resource systems is a significant barrier to their adoption in Nigeria higher institutions. In the view of Adeoye (2019) higher institutions are not paying attention to cost-benefit analysis which is essential for justifying AI investments in human resource management.
4. Data privacy and security concerns: Higher institutions in Nigeria are concerned about the potential risks to data privacy and security posed by AI-powered human resource systems due to fear of job loss or change. Ogbuke, Nwankwo, and Ibhawoh (2020) averred that institutions are not compliant with data protection regulations.
5. Resistance to change from staff: Many staff members in Nigerian higher institutions are resistant to the adoption of AI-powered human resource management systems due to fear of job loss or change. Ibrahim (2019) stated that most human resource managers lack effective communication and training to address resistance to change amongst the staff.
6. Limited access to funding: Higher institutions in Nigeria often lack the necessary funding to invest in AI-powered human resource systems.
7. Inadequate policy and regulatory framework: Nigeria lack a clear policy and regulatory framework to guide the adoption of AI-driven human resource management solutions in higher institutions.
8. Limited awareness and understanding of AI benefits: Many stakeholders lack a clear understanding of the benefits and potential applications of AI-driven human resource management solutions.
9. Dependence on manual processes: Higher institutions in Nigeria still rely heavily on manual processes, making it difficult to integrate AI-powered human resource systems.
10. Limited availability of AI-powered human resource tools: There is a limited range of AI-powered human resource tools available that are tailored to the specific needs of higher institutions in Nigeria.

Conclusion

By leveraging AI, higher institutions can create a more agile, responsive, and student-centered human resource function, ultimately contributing to the success of the institution. As AI continues to evolve and improve, it is essential to consider the ethical implications of its integration in human resource management and ensure that it is used responsibly to benefit both organizations and employees. However, concerns around data privacy and security,

transparency and explainability, potential biases in AI algorithms, and human oversight, and accountability must be addressed. As organizations navigate this new landscape, they must balance the benefits and limitations of AI integration in recruitment and selection.

Suggestions

1. Higher institutions in Nigeria should provide training and development programmes for human resource staff on AI and its applications in human resource management and collaborate with other institutions to share knowledge and expertise.
2. Nigerian higher institutions should invest in upgrading digital infrastructure, including hardware and software and develop a comprehensive industrial training strategy that include AI-driven human resource management solutions.
3. Higher institutions in Nigeria should conduct a thorough cost-benefit analysis to justify AI investments and also, explore funding opportunities, such as grants or partnerships. Also, institutions of higher learning in Nigeria should develop a business case for AI investments to secure funding and consider cost-saving measures such as streamlining processes.
4. Nigerian higher institutions should develop and implement robust data protection policies and procedures and ensure compliance with relevant data protection regulations using artificial intelligence.
5. Higher institutions administrators should communicate the benefits and rationale for AI adoption clearly and transparently and also involve staff in the implementation process through training and feedback mechanisms.
6. Higher institutions administrators should advocate for policy and regulatory changes to support AI adoption and also collaborate with other institutions to share best practices.
7. Education and training programmes on AI and its application should be provided in human resource management across all the higher institutions in Nigeria.
8. Automation of manual processes where possible to free up resources for AI implementation and streamlining of processes to reduce complexity and increase efficacy should be encouraged in Nigerian higher institutions.
9. Nigerian higher institutions should collaborate with other institutions to develop tailored AI-powered human resource tools and also, work with vendors to develop customized solutions.

References

Adeoye, S. (2019). Artificial intelligence in human resource management: A literature review. *Journal of Business and Management, 17(*1), 13-25.

Adeyinka, A. A., & Oyelade, O. O. (2019). Artificial intelligence in human resource management: A systematic review. *Journal of Management and Organization, 25*(6), 835-854.

Bakare, O. (2018). AI intelligence and human management practices. A study of Nigerian tertiary institutions. *Journal of Management and Organization, 24*(2), 734-747.

Bhattacharya, S. & Chakraborty, S. (2020). Artificial intelligence in human resource management: A systematic review. *International Journal of Human Resource Management, 31*(1), 1-24).

Cath, C. (2020). The ethics of artificial intelligence in human resource management. *Journal of Business Ethics, 211*(2), 349-361.

Dastjerdi, M. V., & Gao, F. (2017). Reducing bias in AI-based hiring. *Journal of Management Inquiry, 26*(2), 143-146.

Elenwo, P. M., & Ebom-Jebose, A. (2024). Human resource management practices and effective tertiary education delivery: A review of Rivers State owned tertiary institutions. *Direct Research Journal of Education and Vocational Studies, 6*(1), 32-37.

Elenwo, P. M., & Nte, H. O. (2024). Repositioning human resource management in entrepreneurship education in tertiary institutions for youth empowerment in Rivers State. *Multidisciplinary Research and Development Journal Int'l, 5*(1), 1-15.

Ford, M. (2019). *Architects of intelligence: The truth about AI from the people building it*. Packt Publishing.

Goodfellow, I. (2016). Explaining and harnessing adversarial examples. In advances in neural information processing systems. *International Journal of Management Reviews, 22*(3b), 221-235.

Goyal, P., & Kumar, P. (2020). AI-powered chatbots in HR: A study of employee perceptions. *Journal of Workplace Learning, 32*(3), 247-262.

Kaplan, A, & Haenlein, M. (2019). How AI-powered virtual assistants are transforming HR. *Journal of Management Inquiry, 28*(2), 147-155.

Kumar, P., & Goyal, P. (2020). Ethical considerations in AI-powered HRM: A systematic review. *International Journal of Human Resource Management, 31*(1), 1-24.

Ibrahim, A., Yusuf, D., & Shehu, A. (2019). Effective communication and training: A strategy for addressing resistance to change in AI-driven HRM. *International Journal of Human Resource Management, 30*(12) 2535-2556.

Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI collaboration and workforce augmentation. *Business Horizons, 61*(4), 557-566

Mbah, P. O. (2016), The brain drain phenomenon and human resource development in Nigeria universities. *European Journal of Business and management, 8*(12), 45-52.

Ojo, B. (2018). Harnessing artificial intelligence to drive edupreneurial innovation education. *Journal of Educational Technology Development and Exchange*, 11(2), 1-20.

Onah, F. O. (2016). Human resource management in Nigerian universities: Challenges and way forward. *International Journal of Business Administration, 9*(1), 45-53.

Ogboke, O., Nwankwo, E., & Ibhawoh, S. (2020). Ensuring data privacy and security in AI-powered HRM systems. *Journal of Information Technology Research, 13*(2), 1-12.

Okebukola, P. (2019). *Quality assurance in Nigeria higher education: The role of HRM*. Lagos: STAN.

Oladimeji, S. (2020). The role of artificial intelligence in human resource. A study of selected Nigerian Universities. *Journal of Educational and Social Research, 7*(1), 20-35.

Rasmussen, T., & Uirich, D. (2019). Learning design for the workplace: A framework for the future of work. *Journal of Workplace Learning, 31*(5), 373-386.

Srivastava, S. & Singh, A. (2020). AI-driven recruitment: A study of its impact on talent acquisition. *Journal of Business Research, 110*, 1-10.

UNICEF (2021). Policy guidance on AI for children. Ministry of foreign affairs Finland. https://www.unicef.org/globalinsight/media/2356/file/UNICEF-insight-policy