Artificial Intelligence in Human Resource Management - Challenges and Future Research Recommendations

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Abstract

Digital innovation continues to fuel business transformation. Organizations have realigned their strategic direction on enhanced adoption of digital technologies to leverage the opportunities provided by the new age technologies, especially Artificial Intelligence. Enterprises can leverage strategic advantage in talent - a key differentiator- by adopting Artificial Intelligence in Human Resource Management. More than ever now, Human Resources function now regarded as a trusted advisor, helping the organizations get through the transformational phase created by disruptive technologies. This research provides insights on how Human Resources function has evolved as a strategic partner by deployment of AI related technological advancements related, as it contributes to building organizational capabilities and making organization competitive, thus creating organizations that win in the market. It also looks at the challenges faced in Human Resource Management by deployment of Artificial Intelligence. Insights are shared on future directions of potential research that can be conducted in this field.

Keywords: *Digital Transformation, Artificial Intelligence, Artificial Intelligence in HRM, Strategic HRM*

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1. Introduction

The advent of innovative and emerging technologies has shifted the boundaries of work performed by humans, machines, and algorithms. The new age technologies have disrupted the core business model in every industry. Digital transformation has resulted in enterprises relooking at the very bedrock of who and what they are (Saarikko et al., 2020). All facets of business and life have been affected by Artificial Intelligence (AI) and its associated technologies (Heric, 2018). Artificial Intelligence may be defined, in its most basic forms, as a machine's capability to learn from past experiences and adapt to fresh inputs and carry out tasks much like humans. Since its inception, artificial intelligence (AI) has gone through ups and downs (Kaur et al., 2022). AI improves problem-solving by translating data-related inputs into electronic formats, including text, graphics, and numbers (Newell

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& Simon, 1972). Its computational powers, genetic algorithms, power, and data have been lauded as being noteworthy for AI. (Yang, 2018). Artificial Intelligence plays a key role by being a linking pivot to the cognitive technologies of mobile, robotics, and the Internet of Things (IoT) (Park, 2018). With AI, organizations can leverage competitive advantage by enhanced utilization of their current human capital (Baker, 2020). AI has gained eminence in recent decades, the technology advanced to the extent that there are AI-based systems that host AI decision-making applications similar to human intelligence and are programmed with the ability to make decisions (Galbusera et al., 2019). In the current context, Artificial intelligence (AI) can be attributed to providing solutions to numerous challenges organizations face (Bharodiya & Gonsai, 2018). Artificial intelligence is positioned as a cornerstone of work across industries, as the past few years have witnessed an acceleration in its adoption. (Leopold et al., 2018). AI now represents a field of research wherein research publications have grown exponentially. AI-related conferences have multiplied, particularly in the previous ten years. (Kaur et al., 2021). It is forecasted that by 2025, there will be an enhancement of proficiencies deployed of algorithms and machines compared to the previous years (Leopold et al., 2018).

The transformation of HR from a support function to business partner in strategy has been greatly aided by technology. in a way, redesigning people management (Rogers, 2018). The adoption of AI is a necessity for organizations targeting an equitable workforce and is an essential approach to address inconsistent conditions for HR function (Abdeldayem & Aldulaimi, 2020).

2. Artificial Intelligence in Human Resource Management

Human Resource Management (HRM) has undergone a considerable transformation impacted by technological changes (Bondarouk et al., 2017; Connelly et al., 2020). There has been a repositioning of Human Resource Management as being more data-driven because of the adoption of algorithmic technologies (Cheng & Hackett, 2021). Due to increased globalization and technical advancements, the economic environment has witnessed significant changes. Businesses today recognize that innovative and creative employees with organisational skills provide an eternal competitive edge since, unlike other assets, their intellectual capital is difficult for competitors to emulate. As a result, Human Resource Management now plays an essential significant position. as it has a key role to play to attract, nurture, and engage talent. As a result of the increased adoption of technology, the HRM function has become a crucial partner. HR is at the forefront of technological changes, as digital technologies have impacted workplace disruption. As a function, HR has needed to reimagine how work needs to be done differently with Artificial Intelligence (AI) and the related cognitive technologies (Manuti & Palma, 2018).

Human Resource Management (HRM) has undergone a major transformation impacted by these large technological changes (Bondarouk et al., 2017). As a function, Human Resources (HR) has needed to reimagine how work

needs to be done differently with Artificial Intelligence (AI) and the related cognitive technologies of mobile, robotics, and IoT. (Manuti & Palma, 2018). AIT deployment in HR has contributed to enabling organizations to gain and maintain a competitive advantage in the marketplace with the right talent. AIT has brought about advanced functionalities to each facet of the Human Resources function, resulting in a shift in how talent is managed in an enterprise (Bersin, 2018).

As algorithmic technologies are adopted, HR management is changing and evolving into being more data-driven (Cheng & Hackett, 2021). AI technologies present numerous possibilities to enhance HR functions. Integrating AI into HR functions enhances employee experience by providing more capability, insights, and accurate information for decisive people management. Analytical AI solutions assist with recruiting, selection, learning, growth, and retention in the human resource function. (Kaur et al., 2021). Thus, as a priority, organizations need to focus on value creation and be freed from transactional tasks (Kiron & Spindel, 2019). It has introduced advanced functionalities to Human Resource Management in its entirety (Dhamija & Bag, 2020). In their book section "Artificial intelligence techniques in human resource management—a conceptual exploration", Strohmeier & Piazza (2015) have emphasized on the prospects in relation to AI in the Human Resource Management domain, enabled by the advancement of specific functionalities of HR processes related to the prediction of turnover, the search of potential candidates, scheduling of staff, conducting of sentiment analysis and employee self-service. Walford-Wright & Scott Jackson (2018) highlighted the opportunities created in the field of Talent Acquisition, due to advancement of technology. An industry report

by Ernst & Young (2018) highlights the importance of incorporating conversational AI in HR transactions to perform administrative duties to build efficiency of the HR departments. HR transactions can be automated and integrated by using cutting-edge technology securely. AI can have a beneficial impact on the engagement and effectiveness of employees, as shared by Smith (2019). On how AI improves efficiency in HR, Nicastro (2020), in his article on AI's integration into HR, highlights that AI is helping HR to reinvent AI practices to build organizational efficiency, as AI applications support HR to analyze, predict and diagnose and make better decisions. Yabanci (2019) has highlighted the concept of "Intelligent HR," which emerged because of the application of Artificial Intelligence technologies. It has impacted all facets of Human Resources function. There is an extensive range of AIT applications in HR function today, varying from chatbots for query resolution to predictive attrition analysis for retention. Literature suggests that deploying AI in HR brings both immediate and long-term implications. Insights about four aspects that AI contributes to, enable organizations to reduce transactional work, recruiting, minimizing bias, and enhancing retention & talent mobility (Sivathanu & Pillai, 2018). AI creates compelling employee experience that is a mirror of the customer experience of an organization. (Meister, 2019). AI technology supports advanced Sentiment Analysis which enhances understanding and enables insights into what employees think and feel. Application of Neuro-Linguistic Programming (NLP) and Machine Learning to open ended and text-based surveys, provides detailed insights

to the HR leaders and managers on their employees' thinking and feelings (Strohmeier & Piazza, 2015). This transformation of the Human Resources function has contributed to strengthening it to be recognized as a strategic partner of the business in realizing organizational goals. Thus, Human Resources as a function has evolved to become more digital, strategic, and innovative. Yet, as is true for any transformation, it has been a long journey and has its challenges.

3. Challenges of Artificial Intelligence in Human Resource Management

The deployment of AI in HRM functions brings forth its own challenges. Literature suggests that there was always a fear of automation affecting the adoption of technologies in workplaces (Spencer, 2018). Although there is a growing influx of new technologies in HR, practitioners have voiced caution in adopting it (Mathis, 2018). The field is still nascent and lacks theoretical foundations and a clearly defined paradigm (Zhou et al., 2020). The literature currently available on the adoption of AI with regards to HR is devoid of any solid conceptual foundations (Prikshat et al., 2023).

The ethical debates surrounding AI technologies centre on a number of issues. One aspect of it which contributes a significant portion of the opinions related to Artificial Intelligence revolves around job loss. Each transformative new technology alters the market's need for specific job roles. Organizations need to support employees in this transition to AI technology, by recognising employee angst and reluctance and assisting them in dealing with it. Transparency around jobs which will be impacted by AI, the components of jobs that are getting reduced and those getting enhanced should be ensured by organisations.

Driving digital literacy and learning agility in employees needs to be prioritized to manage the continuous reconstruction of work. (Park, 2018). Highlighting on four aspects of challenges of AI in HR, first being intricacy of HR phenomena, second constraints brought about by limited data sets, third regarding question of accountability linked to being fair and constraints regarding ethics and legality, and fourth of possible negative employee reactions to decision taken by management basis the algorithms based on data. (Tambe et al., 2019).

Deployment of AI initiatives has to put up with strong cultural and organizational barriers. Leaders who are able to at the outset ensure that they break these barriers can effectively leverage AI's opportunities (Fountaine et al., 2019). This calls out another challenge that needs

to be handled and equip business leaders/HR professional which is related to understanding that AI is not in competition but an enabler. Also, the need to build skills that can leverage what is provided by AI as an enabler, is an issue that requires attention. These skills are related to complex problem solving, critical thinking, creativity, and empathy.

While using technology in HR functions, concerns related to data security and privacy are aspects that need to be looked at in organizations (Zafar, 2013). Data protection, security and privacy concerns need to be addressed. These concerns could

impact the flow of essential operations impacting the organization (Yabanci, 2019). HR data privacy is one key aspect in AI deployment in HR. Awareness and sensitivity to protection of data related to employees is critical and organizations need to have governance guidelines to be set up. Such guidelines should encompass the technical, data inputting processes and related legal and ethical issues. (Ernst & Young, 2018). Many ethical concerns relating to the usage of artificial intelligence has been highlighted by incidences of discrimination and bias across a spectrum of intelligent systems. Although most firms strive towards automation with the best of intentions, integrating AI into their hiring process may have some unintended repercussions. Black et al., (2021) shared in their study that the adoption of AI-enabled recruitment tools could lead to a rivalry for these tools and the management consequences of these dynamics. There is need to address challenges about the use of AI in the hiring procedures, such as what information should be available when assessing an applicant for a position. AI systems in HR need to be designed in a way that they address ethical concerns and ensure that the applications are aligned to the broader societal value to be upheld and goals.

The deployment of AI is not sufficiently regulated, hence there is no enforcement mechanism to ensure that it is deployed ethically. The negative consequences an unethical Artificial intelligence system could have on corporations' financial lines are the current reasons for them to adhere to these principles. Thus, resulting in a partnership between ethicists and researchers, to have ethical frameworks developed to address this vacuum and manage the development and societal adoption of AI models. Burton et al., (2017) recommended development of a curriculum to introduce AI in academic institutions, which also included focus on ethics in AI. AI technology when designed carefully and deployed with responsibility has potential to help reduce bias. Building component of being fair into AI systems and complete transparency in deployment of AI, will ensure that we remain on the on the positive side of the technology spectrum separating good from bad (Guenole & Feinzig, 2019). Reimagining business process with AI requires empowering workers with "fusion skills" so they can function well at the human-machine interaction. To leverage this collaboration, organizations have to comprehend how humans can efficiently augment machines and to facilitate this collaboration, re-evaluate business practises (Wilson & Daughtery, 2018). AI must not be perceived as a “cookie-cutter solution” for all HR functions. (HRPA, 2017). AI augments, human decision making, does not replace it. AI tools aim to extend human capabilities rather than automating or just replacing them with machines (Jarrahi, 2018). Artificial intelligence (AI) tools do not replace humans in decision-making. To assess distinctive characteristics, human intervention will always be required to steer clear of pitfall of focusing on metrics rather than individuals. Focus on upskilling of the HR teams, having ethical operating guidelines, and good technical curiosity, the HR function can leverage all these, to effectively promote strategic advantage while providing better experience to the employees, who put the strategy into action (Guenole & Feinzig, 2019). Organizations need transform in case they need to completely leverage the potential of AI (Wilson et al., 2017). In the long

run, there is unlikely to be a substitute for this transition (Hirsch, 2018). In this transformation, focus is by intelligent algorithms and advanced, leveraging data of connected as well as smart products (Lichtenthaler, 2020). As is true for any emerging technology, time and focus is needed to ensure that issues are addressed, and benefits are maximized. Böhmer & Schinnenburg (2023) in their research critically examined AI-driven HRM and organised context-specific capability building potential across four inconsistencies that HRM must strategically solve to support the competitive edge of an organisation, namely design of jobs, performance, transparency, and ambiguity of data. AI's capabilities are established and will continue to increase in HR, with time. The key is to ensure that we not forget the human element of the role. Ensuring an open organizational culture is also required, as implementation challenges need to be addressed, for organizations to integrate the new technologies (Sivathanu & Pillai,2018). HR is going through massive disruption. Employee experience bar has been redefined, due to impact of mobile and social technologies and personalization. AI and automation are accessible to HR professionals and enable them to solve several permeating talent concerns related to skills, retention, addressal of employee concerns, objective job matching for internal and potential hires for career opportunities, enabling managers with guidance on compensation investment, removing administrative tasks through the robotic process automation, and facilitating an appealing platform for all the employees to have flexibility to learn while being mobile (Guenole & Feinzig, 2019).

4. Future Research Recommendations

There has been a steady development of applications related to AI technologies for the HRM function. Though there is limited research in some areas of this field, despite continual progress being made in this field. Many areas merit additional investigation. By enabling digital engagement, HR provides a competitive advantage to the organizations (Jesuthasan, 2017). Cognitive enabled insights facilitate HR function to draw optimal outcomes by organizing work and workforce in organizations. There is a dearth of research and detailed studies on this aspect to validate this enablement of strategic HRM function, which contributes to supporting business in optimal operational and strategic decisions.

There is a repositioning of HR Management, with its enhanced data-driven approach resultant of adoption of applications based on AI and related algorithmic techniques (Cheng & Hackett, 2021). Further, detailed research work is recommended to be conducted on the model of implementation of change for adoption of AI in HRM. Budhwar et al., (2022) recommended a framework drawn from unified research HRM related AI applications and provided insights to set a future research agenda.

Research is required on how AI and its related technologies of the HRM function have impacted vital aspects of Employee Engagement, Retention, Growth, Compensation, Reward, and Recognition. There have been very few studies conducted related to these aspects. Another area which requires further exploration

is on issues with implementing AI in HRM. It includes studies on limitations of data mining due to small-size HR data sets, debates on ethics, fairness, and possible adverse reaction of the employees to decisions based on data-based AI algorithms related to people (Tambe et al., 2019). Aspects regarding the authenticity of employee data – both current and potential, are a cause of concern as its validity is questionable. The authenticity of algorithms designed based on the data could be imperfect, as it could reflect society's ingrained prejudices and biases. Data sets could be structured in advance to be aligned to historical precedents and patterns, which could even be part of an organization's culture and are hardwired into code (Gulliford & Dixon, 2019). Questions regarding talent decisions made basis this data, whether it further strengthens exclusions and existing biases, is imperative to be researched, as these are sensitive topics to be addressed. Also, interlinked to this, there is a requirement for more comprehensive insights and counsel in the form of additional research to help address ethical concerns and acceptance of talent decisions based on AI applications. There have been some of the drawbacks of data science being applied in HR highlighted, including concerns related to infringing on privacy, usage of social media posts as a determinant factor for hiring, which may lead to discriminative impacts on minorities/diversity. Democratizing data, transparency, and providing data and insights to employees is another aspect that needs further exploration (Hirsch, 2019). The skills of present and future HR practitioners will need to be developed to manage today's AI applications and future advancements. HR practitioners need to learn how to use AI-enabled analytical tools. Still, they also need to be able to interpret and take action basis the analysis, thus developing numerical analysis and reasoning skills to advise business (Davenport, 2019). HR professionals need to have the competence to utilize technology to provide insights that support business success, which necessitates the skill development of HR professionals (Wang & Lin, 2018). There are hardly any studies conducted on this key aspect of AI in HRM, which is the new skills and competencies that HR professionals need to be proficient in adopting and applying AI applications in HRM and leveraging all the benefits. Chowdhury et al., (2023) emphasised that to maximise the benefits of adopting AI in HRM, organisations must place a high priority on the development of human competencies, leadership, an innovative work environment, teamwork, and methods for integrating AI into the workforce.

Another avenue for future research is industry-specific and cross-industry comparisons to support further research and insights related to the adoption of AI in HRM. There is a research deficit as well related to the actual impact studies on the adoption of AI, Big Data, and related technologies on the transformation of HR. Jatoba et al. (2019) has discussed AI applied to Human Resources and distributed user behaviour. Research is required to delve into the aspects of this HR transformation, thus providing insights, which can be potentially leveraged for future growth and advancement of the HR function. How this phase of HR transformation and the strategic development of HR has impacted business performance is a key area that has not been much investigated. Future studies could examine how AI application in HRM affects organisational abilities such Organisational Effectiveness, Knowledge Management, and Innovative Performance.

Other predominant areas of research highlighted are Neural Networks, Fuzzy Logic, Decision Trees, Classifiers and Evaluation Models. Research could be based on key aspects to feasibility of leveraging of fuzzy logic in the Human Resource Performance Evaluation and for Talent Acquisition and Selection, with fuzzy scripts being authored for Talent Evaluation for different job roles. Another potential field of study is Sentiment Analysis and related aspect of the leveraging of Text Analysis in the HRM context, wherein Sentiment Analysis is used as a mechanism to decipher aspects that could not be detected by deploying standard objective evaluation. Additionally, use of multiple related Computational Intelligence strategies which are related to Data Mining techniques and Decision Trees is a vast area of potential research which has been relatively untapped as of now. Also, while there has been some research indicated on Individual Computational Intelligence Techniques, there is a lack of research on combining of these techniques to leverage it as a cohesive model with all the techniques being leveraged to their full advantage needs to be researched into. There is also a vast potential of research to understand the impact of adoption of AIT, in all domains of the HR function, be it Compensation/Payroll, Engagement, HR Services, HR support and transaction handing, as adoption of AIT in HR is not consistent across all domains of HR. Future research in this area may provide insight into the effects of implementing AIT in the HR function, on the key organizational aspects related to Employee Engagement, Manager Enablement, and Organizational Performance. Concerns pertaining to privacy and security of employee sensitive information also needs deeper exploration. Challenges that HR professionals face, focuses on security and privacy aspect. Threat posed either on confidentiality, integrity, and accessibility front, in human-computer interaction, which impacts the HR professionals as it raises concerns related to security, privacy, and related technological, legal, or ethical issues for individuals and organisations. Technology plays key role in our lives today with self-driven cars or robotics, but in HR it needs to be ensured that humans are not replaced, while technology grows in the function. Emphasis that what HR professionals bring to the function, with empathy or intuition and will taking decisions good judgment will always be key. Raising an important question, that needs to be researched is that - with all the large technological advancements, how can the HR professionals ensure that the pace of digital transformation, is at the right pace for their business, so that very important human touch is not lost.

5. Concluding Thoughts

In the current environment, where the trends of globalisation and marketization, are continuing to intensify, it is crucial to consider how to take advantage of the opportunity and gain a competitive edge. Due to socioeconomic advancements, key talent has taken centre stage in business development, and as a result, businesses are now vying for top candidates rather than just the more limited pool of labour resources. Cognitive based intelligent systems like Artificial Intelligence and related technologies support HR in achieving this. This integration has opened by a large opportunity for the HR function to leverage computational

intelligence techniques such as Artificial Neural Network, Sentiment Analysis, Decision Tree Algorithms, Fuzzy Logic to base talent decisions on. Notwithstanding all the benefits, AI is not flawless. Nevertheless, there is requirement of human programming, therefore there is a possibility of inaccuracies and biases. AI is indeed very good at analysing data and providing intelligent recommendations for decisions, but it still leaves out important, non-technical components.

Despite the challenges of AI, a significant number of organisations are keen to integrate AI in their Human Resources function because of the numerous advantages AI offers, which outweigh its difficulties. Sakka et al., (2022) called out that AI for improving performance of organisations can be successful when carefully implemented, with the right personnel hired, HR employees retrained, and with a culture of inner transparency to prevent AI from being used as a tool of control. Talent decisions are based on a greater degree of intelligence owing to cognitive intelligence with the use of Artificial Intelligence technology, thus it offers a promising strategy for Human Resource Management. Charlwood & Guenole (2022) in their research called out that despite the emphasis on biases and inequity in popularized portrayals of AI, these issues are easily remedied, emphasising that the to ensure that ethics and equity stay at the forefront of AI for HR, HR professionals need to learn the necessary skills. The challenges related to the adoption of AI due to budget constraints are being addressed by development of enhanced intelligent and user-friendly interfaces, Machine Learning algorithms, Pattern recognition, which support AI be within all businesses' budgetary limits. Also concerted efforts are being made to make the system more secure, to address the challenges and issues related to data privacy and security that HR has to manage with the Artificial Intelligence applications. Key AI applications enable HR professionals to move away from handling transactions/tasks which can be high volume and tedious, to focus on the strategic aspect of Human Resource Management, thus enabling positioning of HR as a profession/role to be strategic in nature. Especially in view of evolving nature of workplace with hybrid model and higher focus on Inclusion and Diversity, the role of strategic aspect of HR becomes more critical, which needs to leverage functionalities of AI in HR. Thus, support organisations to be the "employer of choice of employees"- who have the skills - "that will delight customers of the business".

HR is no longer about people decisions being based on experience, intuitive or gut feeling. Instead of only being process oriented, focus is now on being analytics driven. HR needs to create a connected, transparent, mobile, personalized and 24x7 available universe, through the workplace. Investing in AI and reinventing all the HR processes through technology and looking at it from the lens of the employees, is required. In this digital era, HR must be characterized by speed, personalization, and democratization.

References

1. Abdeldayem, M. M., & Aldulaimi, S. H. (2020). Trends and opportunities of artificial intelligence in human resource management: Aspirations for public sector in Bahrain. *International Journal of Scientific and Technology Research*, *9*(1), 3867-3871.
2. Baker, N. (2020). Employee feedback technologies in the human performance system. *Human Resource Development International, 13*(4), 477-485.
3. Bersin, J. (2018), "Talent trends technology disruptions for 2018", Retrieved from https://www. isaconnection.org/assets/documents/2018BersinHRTechDisruptionsReport.pdf.
4. Bharodiya, A. K., & Gonsai, A. M. (2018). Research Review on Feature Extraction Methods of Human Beings X-Ray Image Analysis. *National Journal of System and Information Technology*, 11(1), 9.
5. Budhwar, P., Malik, A., De Silva, M. T., & Thevisuthan, P. (2022). Artificial intelligence–challenges and opportunities for international HRM: a review and research agenda. *The International Journal of Human Resource Management, 33*(6), 1065-1097.
6. Böhmer, N., & Schinnenburg, H. (2023). Critical exploration of AI-driven HRM to build up organizational capabilities. *Employee Relations: The International Journal*.
7. Bondarouk, T, Parry, E, & Furtmueller, E. (2017). Electronic HRM: four decades of research on adoption and consequences. *International Journal of Human Resource Management*, *28* (1), 98-131.
8. Black, J. Stewart, and Patrick van Esch. (2021) "AI-enabled recruiting in the war for talent." *Business Horizons*,*64* (4), 513-524.
9. Burton, E., Goldsmith, J., and Koenig, S. (2017). Ethical considerations in artificial intelligence courses. *AI Magazine, 38*, 22–34. doi: 10.1609/aimag.v38i2.2731.
10. Charlwood, A., & Guenole, N. (2022). Can HR adapt to the paradoxes of artificial intelligence? *Human Resource Management Journal*, *32*(4), 729-742.
11. Cheng, M. M., & Hackett, R. D. (2021). A critical review of algorithms in HRM: Definition, theory, and practice. *Human Resource Management Review*, *31*(1), 100698.
12. Chowdhury, S., Dey, P., Joel-Edgar, S., Bhattacharya, S., Rodriguez-Espindola, O., Abadie, A., & Truong, L. (2023). Unlocking the value of artificial intelligence in human resource management through AI capability framework. *Human Resource Management Review, 33*(1), 100899.
13. Connelly, C. E., Fieseler, C., Černe, M., Giessner, S. R., & Wong, S. I. (2020). Working in the digitized economy: HRM theory & practice. *Human Resource Management Review*, *31*(1), 100762.
14. Davenport, T. H. (2019). Is HR the most analytics-driven function? Harvard Business Review. Accessed August 10, 2020 from https://hbr.org/2019/04/is-hr-themost-analytics-driven-function.
15. Ernst & Young (2018) - The new age: artificial intelligence for human resource opportunities and functions. Accessed August 5,2020 https://www.ey.com/Publication/ vwLUAssets/EY-the-new-age-artificial-intelligence-for-human-resource-opportunities-and-functions/$FILE/EY-the-new-age-artificial-intelligence-for-human-resource-opportunities-and-functions.pdf.
16. Fountaine, T., McCarthy, B., & Saleh, T. (2019). Building the AI-powered organization. *Harvard Business Review*, 97(4), 62-73.
17. Galbusera, F., Casaroli, G., & Bassani, T. (2019). Artificial intelligence and machine learning in spine research. *JOR spine*, *2*(1), e1044.

18. Guenole, N., & Feinzig, S. (2019). The Business Case for AI in HR with Insights and Tips on Getting Started. *IBM Smarter Workforce Institute*.
19. Gulliford, F., & Dixon, A., (2019). AI: the HR revolution. *Strategic HR Review*, https://doi.org/10.1108/ SHR-12-2018-0104.
20. Hirsch, P.B. (2019), Tinker, Tailor, Soldier, Spy, *Journal of Business Strategy*, 40 (4)53-56.
21. HRPA. (2017). A new age of opportunities: what does artificial intelligence mean for HR professionals? Accessed August 2, 2020, from https://www.hrpa.ca/Documents/Public/Thought-Leadership/HRPA-Report-Artificial-Intelligence-20171031.PDF.
22. Heric, M. (2018). HR's New Digital Mandate. Bain & Company. Accessed: August 5, 2020 from https://www.bain.com/insights/hrs-new-digital-mandate/.
23. Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons, 61*(4), 577-586.
24. Jatobá, M., Santos, J., Gutierriz, I., Moscon, D., Fernandes, P. O., & Teixeira, J. P. (2019).
25. Evolution of artificial intelligence research in human resources. *Procedia Computer Science, 164*, 137-142.
26. Jesuthasan, R. (2017), "HR's new role: rethinking and enabling digital engagement", *Strategic HR Review, 16* (2), 60-65. https://doi.org/10.1108/SHR-01-2017-0009.
27. Kaur, M., AG, R., & Vikas, S. (2021). Adoption of Artificial Intelligence in Human Resource Management: A Conceptual Model. *Indian Journal of Industrial Relations, 57*(2).
28. Kaur, M., Vikas, S. & AG, R., (2022). Tracing the Advancements in Artificial Intelligence: Drawing Lessons for Tomorrow. *Towards Excellence, 14*(2).
29. Kiron, D. & Spindel, B. (2019). Case study: Rebooting work for a digital era. *MIT Sloan Management Review (Winter)*,1-12.
30. Leopold, T. A., Ratcheva, V. S., & Zahidi, S. (WEF 2018, September). The future of jobs report 2018. In *World Economic Forum (Vol. 2)*.
31. Lichtenthaler, U. (2020), Beyond artificial intelligence: why companies need to go the extra step. *Journal of Business Strategy, 41*(1), 19-26.
32. Manuti, A., & De Palma, P. D. (2018). Digital HR. London: Palgrave Macmillan, doi, 10, 978-3. Accessed August 2, 2020, from https://link.springer.com/content/pdf/10.1007%2F978-3-319-60210-3.pdf.
33. Mathis, J. (2018). Innovations are Coming to the Human Resource. *The Journal of Private Equity, 21* (4), 14-17. doi:10.3905/jpe.2018.21.4.014.
34. Meister, Jeene (2019), The Future of Work - Three New roles in the age of Artificial Intelligence. Accessed on August 12,2020, from https://www.forbes.com/sites/jeannemeister/2018/09/24/the-future-of-work-three-new-hr-roles-in-the-age-of-artificial-intelligence/#3a567e4d4cd9.
35. Nicastro, D. (2020). Ways Artificial Intelligence is Reinventing Human Resources. Retrieved from cmswire. com: https://www. cmswire. com/digital-workplace/7-ways-artificial-intelligence-is-reinventing-human-resources.
36. Park, W. (2018). Artificial intelligence and human resource management: new perspectives and challenges Japan Institute for Labour Policy and Training, Tokyo, Accessed August 10, 2020 from https://www.jil.go.jp/profile/documents/w.park.pdf.
37. Prikshat, V., Malik, A., & Budhwar, P. (2023). AI-augmented HRM: Antecedents, assimilation and multilevel consequences. *Human Resource Management Review*, *33*(1), 100860.

38. Pillai, R., & Sivathanu, B. (2020). Adoption of artificial intelligence (AI) for talent acquisition in IT/ITeS organizations. *Benchmarking: An International Journal, 27*(9), 2599-2629.
39. Rogers, A. (2018). How is AI Humanizing People Management, *Workforce Solutions Review, Jul-Sep 2018*, 25-26.
40. Sakka, F., El Maknouzi, M. E. H., & Sadok, H. (2022). Human Resource Management in The Era of Artificial Intelligence: Future HR Work Practices, Anticipated Skill Set, Financial and Legal Implications. *Academy of Strategic Management Journal, 21*, 1-14.
41. Saarikko, T., Westergren, U. H., & Blomquist, T. (2020). Digital transformation: Five recommendations for the digitally conscious firm. *Business Horizons,63,* 825-839.
42. Sivathanu, B., & Pillai, R. (2018). Smart HR 4.0–How Industry 4.0 is disrupting HR. *Human Resource Management International Digest, 26*(4), 7-11.
43. Smith, C. (2019). An employee's best friend? How AI can boost employee engagement and performance. *Strategic HR Review, 18* (1), 17-20.
44. Spencer, D.A. (2018). Fear and hope in an age of mass automation: debating the future of work. *New Technology, Work and Employment, 33* (1), 1-12.
45. Strohmeier, S. & Piazza, F. (2015) Artificial Intelligence Techniques in Human Resource Management—A Conceptual Exploration. In: Kahraman C., Çevik Onar S. (eds) Intelligent Techniques in Engineering Management. Intelligent Systems Reference Library, vol 87. Springer, Cham. https://doi.org/10.1007/978-3-319-17906-3_7.
46. Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. California Management Review, 61(4), 15-42.
47. Walford-Wright, G. & Scott-Jackson, W. (2018), Talent Rising; people analytics and technology driving talent acquisition strategy. *Strategic HR Review, 17* (5), 226-233.
48. Wang, T., & Lin, J. (2018). Research on the Influence of Artificial Intelligence on Human Resource Management Teaching and Work. *In Proceedings of the International Conference on Humanities and Advanced Education Technology (ICHAET)* 4, (2), 512-517).
49. Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence: humans and AI are joining forces. *Harvard Business Review, 96*(4), 114-123.
50. Wilson, H.J., Daugherty, P. & Bianzino, N. (2017). The jobs that artificial intelligence will create. *MIT Sloan Management Review,58* (4), 14-16.
51. Yabanci, O. (2019). From human resource management to intelligent human resource management: a conceptual perspective. *Human-Intelligent Systems Integration, 1*(2), 101-109.
52. Yang, L. (2018, July). Research on Application of Artificial Intelligence Based on Big Data Background in Computer Network Technology. *In Proceedings of the Conference Series: Materials Science and Engineering*, 392 (6), 62185. IOP Publishing.
53. Zafar, H. (2013). Human resource information systems: Information security concerns for organizations. *Human Resource Management Review, 23*(1), 105-113.
54. Zhou, Y., Liu, G., Chang, X., & Wang, L. (2020). The impact of HRM digitalization on firm performance: investigating three-way interactions. *Asia Pacific Journal of Human Resources,59*(1).