

DIGITAL TRANSFORMATION OF HUMAN CAPITAL MANAGEMENT IN THE GULF COOPERATION COUNCIL

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Abstract

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Digital human capital management (HCM) has emerged as a pivotal strategy in the Gulf Cooperation Council (GCC) region's pursuit of modernizing and optimizing workforce management practices. This article examines the growing dynamics of digital transformation within the GCC's human resources landscape. This transformation transcends conventional human resource (HR) practices, ushering in the rapid evolution of digital HCM. The thematic analysis results reveal two main strategies for HR/HC managers to employ digital transformation, categorized into primary themes and sub-themes. Critical areas impacted include human capital (HC), recruitment and selection (R&S), learning and development (L&D), compensation and benefits (C&B), organizational development (OD), performance management (PM), and employee relations (ER). Specific results include the use of technology for workforce prediction, acceleration of planning procedures through human capital management systems (HCMS), and advanced tools such as psychographic assessments and online simulations for candidate screening. This study underlines the transformative impact of digital HCM in the GCC, while highlighting challenges such as resistance to change, digital skills gaps, and data security concerns, providing a comprehensive assessment of digital transformation efforts in the GCC, and offering insights into strategies and outcomes of digital HCM implementation in the region.

Keywords: Digital Transformation, HR Management, Human Capital Management, Artificial Intelligence, Gulf Cooperation Council

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1. INTRODUCTION

In today's fast-paced and technology-driven world, digital transformation plays a critical role in various industries, including human resources (HR). Digital human capital management (HCM) is a concept that encompasses the use of innovative technologies to attract, select and effectively manage HR within organizations. The region that is actively witnessing this transformation is the Gulf Cooperation Council

(GCC), comprising six Middle Eastern countries: Saudi Arabia, the United Arab Emirates, Bahrain, Kuwait, Oman, and Qatar. Real-world examples clarify the challenges and benefits of digital HCM implementation. Organizations in the GCC are using digital platforms to streamline recruitment processes, automate routine tasks and increase employee engagement through personalized digital experiences. Adopting artificial intelligence (AI)-powered chatbots and predictive analytics

illustrates the potential of digital transformation to reshape human capital (HC) practices. Although the GCC supports digital transformation, further research is needed to assess its implementation and impact in the workplace (Ahmad, 2023). Therefore, the swift adoption of digital HCM underscores its critical role in modernizing workforce management practices in the GCC. This shift integrates digital technologies into HC practices, enhancing data-driven decision-making and facilitating HC return on investment. As organizations address challenges and seize opportunities, empirical research remains essential for a holistic understanding of digital transformation's implications for organizational success in the GCC (Madi Odeh et al., 2023, p. 444).

RQ1: How has the adoption of digital HCM technologies impacted employee engagement and productivity in organizations within the GCC?

RQ2: What are the key challenges and barriers faced by organizations in the GCC during the implementation of digital HCM solutions?

RQ3: To what extent do AI-powered chatbots and predictive analytics contribute to the efficiency and effectiveness of recruitment processes in the GCC region?

This paper is structured as follows. Section 2 presents the literature review, Section 3 details the research methodology, Section 4 discusses the research results, Section 5 proposes the results, and Section 6 concludes the paper.

2. LITERATURE REVIEW

2.1. Importance of digital transformation in GCC's human capital management

The adoption of digital transformation by HR leaders in the GCC region is crucial for several reasons. First, it allows organizations to streamline their recruitment processes using digital applications such as applicant tracking systems and AI-powered talent analytics tools (Bella et al., 2023). These technologies help identify qualified candidates efficiently while reducing bias associated with manual selection methods. Secondly, digitization facilitates seamless employee onboarding through e-learning platforms, and virtual training sessions guarantee that new employees are quickly integrated and provided with relevant knowledge to perform their roles effectively (Prokopenko et al., 2023).

Furthermore, digital HCM enhances HR management by providing real-time performance monitoring through cloud-based performance management systems, enabling managers to provide timely feedback and support employees' professional growth (Pavlovski, 2021).

Digital HCM has emerged as a crucial aspect of the GCC region's efforts to modernize and optimize workforce management practices. According to research based on analysis reports from several companies, such as software establishments and consulting firms, the GCC region's digital HC transformation is gaining momentum (Al-Alawi et al., 2023). HR and HC leaders in the GCC region recognize the need to rethink and develop innovative digital applications to cover all traditional HR functions. Currently, the digital transformation of HCM in the GCC region has moved beyond

traditional HR practices and is driving the rapid development of digital HCM. This transformation is based on the integration of management models, multi-dimensionality, data fusion, real-time analytics and technological flexibility. However, in the Gulf region, HCM technology is still at an early stage of development (Hrynko, 2019). Therefore, HCM digital transformation in the GCC region should include studying real-life cases and understanding the challenges and solutions that organizations may face during implementation, as this is critical for the region as it seeks to modernize and optimize HR management. The growing importance of digital transformation in HCM in the GCC region is evident as it is recognized by government leaders and considered necessary to elevate the human resources competencies and prepare them for the future. Companies that have adopted digital technologies in HCM have moved beyond traditional HR practices, enabling them to improve their ability to attract, select, and retain the best digital talent (Okoronkwo, 2021).

Nevertheless, integrating digital technologies into HCM requires overcoming barriers such as resistance to change, lack of digital skills among the workforce, and data security concerns. These challenges can be mitigated through a clear digital transformation roadmap, comprehensive change management strategies, upskilling and reskilling initiatives, and robust cybersecurity measures (Vogelsang et al., 2019). The complexities and benefits of digital HCM implementation are numerous, and the importance of social and digital technologies impacts nearly everyone, regardless of their institution, profession, functional area or career stage. HCM operates across all organizations, and experts are integral in ensuring the efficient and effective transition and transformation from industrial-era models and processes to their digital-era counterparts (Hunt, 2014). Currently, organizations in the GCC region have reached a phase where they are enhancing employee engagement through personalized digital experiences. For instance, a company that uses AI-powered chatbots for candidate interaction leverages predictive analytics to identify top-performing candidates (Gusain et al., 2023). Furthermore, research validates the growing momentum of digital transformation in the HC landscape. Numerous other initiatives underscore the transformative potential of digital approaches in enhancing HC practices, aiming for heightened efficiency and effectiveness. While the GCC region is actively embracing digital transformation in HCM, there remains a need for further research and empirical studies to comprehensively understand the impact of these initiatives on organizational performance, employee satisfaction, and overall strategic outcomes (Mehta, 2022). Future research should investigate the challenges faced during implementation, the effectiveness of digital tools in enhancing talent acquisition and management, and the long-term sustainability of digital HR strategies.

2.2. Integrated management models

As part of the digital transformation process, organizations in the GCC are embracing integrated management models that enhance workforce

management practices. For example, a holistic approach to HCM integrates various aspects such as recruitment, onboarding, performance management, and learning and development into a single digital platform. By integrating these functions, organizations can achieve greater efficiency in managing HC. This approach also enables data-driven decision-making by providing HC leaders with comprehensive insights into employee performance trends and training needs. Integrating digital technologies into traditional HR practices is at the heart of the GCC's digital HCM transformation (Suandi, 2023). This integration embodies principles such as data analysis in real-time, innovative digital applications, and flexibility to accommodate technological advancements. Experts identify two main areas influenced by digital technologies on HCM: 1) digital workplace, and 2) digital HC technology. The former refers to modern communication platforms like Facebook and Microsoft Teams, while the latter encompasses digital tools that shape HR management and HC solutions. Digital HC technology empowers companies to utilize fewer resources while achieving faster and more accessible information sharing amongst team members. A single platform can meet most of the sharing and collaboration needs by simplifying data analysis for better decision making. This not only benefits the company's core business but, upon completion of HC's digital transformation, also eliminates the need for time-consuming individual data collection and the use of traditional methods like paper or Excel for intricate calculations. Digital platforms are now capable of auto-generating comprehensive statistical reports for HC, significantly simplifying tasks such as statistical analysis. This aids in more precise recruitment, enhances mobility, and enables advanced features such as AI-driven resume screenings and recommendations. These advantages represent just a fraction of the broader potential that digitized recruitment offers, aiming to refine and accelerate the hiring process (Rismayadi, 2024).

Moreover, employees now have the tools to enhance their own work experience. Digital platforms grant them real-time connectivity with management, offering an improved overall work experience. For instance, tasks like seeking approvals for leave or logging overtime can be swiftly managed on a mobile device. Employees can easily access check-in records, team vacation schedules, document repositories, and even their salary details, with the added ability to update select information. It's crucial to recognize the evolving needs and expectations of the newer generation of employees. Raised in an era dominated by the Internet and mobile devices, their demands for seamless work experience are continuously growing. Given its user-friendly, streamlined, and adaptable features, Digital HCM is becoming increasingly popular and is resonating strongly with this new generation (Deshpande, 2023).

3. RESEARCH METHODOLOGY

For this study, a qualitative methodology was chosen, following Acciarini et al. (2022), as one of the objectives of this article is to gain an in-depth understanding of HC managers' perceptions of their

changing role in the era of digitalization. This methodology allows for the exploration of complex, context-specific phenomena, which is essential in capturing the nuanced perspectives of HC managers as they navigate digital transformation. The authors decided that such in-depth understanding could best be achieved through semi-structured interviews. This method was chosen because it provides the flexibility to explore respondents' views in depth while maintaining enough structure to ensure consistency across interviews (Osborne & Grant-Smith, 2021).

The face-to-face, in-depth, semi-structured interviews were meticulously designed to address the critical areas of HC (organizational development (OD), compensation and benefits (C&B), learning and development (L&D), performance management (PM), and recruitment and selection (R&S) managers or professionals), and the impact of digital transformation in the relevant GCC countries. This approach enabled the researchers to probe deeply into specific topics and adapt questions based on interviewees' responses, ensuring rich and detailed data collection.

The semi-structured nature ensured that the key issues and areas of HR/HC were addressed consistently in all seven interviews. This consistency is crucial for comparative analysis while allowing for individual insights and response variations. Seven HC/HR managers and professionals from organizations in the GCC, belonging to both the private and public sectors, received an email in which they were asked whether they were willing to be interviewed after the purpose of the interview was explained to them. Anonymity was not just a promise but a guarantee, as no reference was made to the names of the HC/HR managers interviewed or the companies where they work, ensuring candid responses.

Interviewees consented by return mail. The face-to-face interview lasted 30 minutes and was transcribed from audio to text using Otter.ai and analysed using the thematic approach. This method was chosen because it permits recognizing and analysing patterns or themes within qualitative data, providing insights into the main themes and sub-themes of the interviews, and addressing the links between such themes. By employing this methodology, the authors aimed to capture a comprehensive and detailed understanding of how digital transformation impacts HR practices in the GCC, reflecting the complexity and dynamism of this process.

4. RESEARCH RESULTS

The thematic analysis results show two main strategies HR/HC managers and professionals use for digital transformation within their organizations: enhancing employee experience through digital tools and optimizing workforce management through data analytics. These are subdivided into primary themes and sub-themes. The managers were asked how digital transformation has impacted HC's daily procedures. All seven HR managers in the seven organizations addressed how digital transformation has transformed HC routines. The sub-themes are HC, HR, OD, C&B, L&D, PM, and R&S.

Regarding HC, one of the seven HR managers addressed the use of technology in the prediction of future workforce and the expected costs related to that, and another three HR managers mentioned the use of human capital management system (HCMS) to accelerate the planning procedure. However, in R&S, all HR managers mentioned the need to upgrade the existing HCMS, and two HR managers addressed the use of technology in selection such as simulation and psychographics, and AI: “We use psychographic assessment tools to know the personalities of our candidates is an AI-powered assessment. We also use online simulation exercises for technical skills. This is all realized thanks to new technology” (Participant F, personal communication, March 2024). While one contributor also spoke about how digitization has facilitated talent management and succession planning, particularly identifying talented employees and successors in the organization: “Our new unified platform system assists us not only identify the right candidates for the right jobs, but it also detects high potentials from our existing employees that might be suitable for promotions” (Participant A, personal communication, February 2024). However, in L&D, three managers addressed technology, specifically the digitalization of certificates: “We are working on digitalizing most of the certificates using the LMS [learning management system] features. The employee will get a digital certificate and any training related materials” (Participant D, personal communication, February 2024). Additionally, all seven participants spoke about the use of e-learning as a common digital training approach within their

organization: “We have introduced e-learning as part of the internal digital learning tool. Employees can attend training synchronously and asynchronously thanks to technology” (Participant D, personal communication, January 2024). The four specialists saw that the digitalization of HC helped automate payroll processes and facilitate data analysis for market trends: “We are not having any delay or salary issues after the automation of the payroll” (Participant C, personal communication, February 2024). As per two of the HR/HC managers digital transformation also affects the OD: “I did not experience this in my organization, but I know for a fact that digitalization brings about significant changes in enhancing organizational structure and decision-making processes” (Participant B, personal communication, March 2024). Addressing the central theme of employee relations (ER), all participants agree that in the era of digitalization, communication has improved: “As a company, we are adopting a lot of social media either in announcing new products, new services and in communicating internally and externally” (Participant G, personal communication, December 2023). Linked to this aspect, a participant also addressed the increased collaboration as a value within the company culture: “I believe that with the use of digital means of communication collaboration has been at its best in the company” (Participant E, personal communication, November 2023). Table 1 below shows the main themes and sub-themes as revealed by the seven HR/HC managers and professionals in seven different organizations in the GCC.

Table 1. Main themes and sub-themes revealed during the interviews

Theme	Sub-theme	Part A	Part B	Part C	Part D	Part E	Part F	Part G
Digital transformation	Human resource (HR)/ Human capital (HC)			1				
		• Prediction of future workforce			1			
		• HCMS can accelerate planning procedure	1		1			1
	Organizational development (OD)		1			1		
	Compensation and benefits (C&B)		1	1	1			
		• Automation of payroll processes		1	1	1		
	Learning and development (L&D)			1	1	1	1	
		• Digitalization of certificates		1	1	1	1	
	• E-learning	1	1	1	1	1	1	
Performance management (PM)		1						1
	• Facilitate talent management and succession planning	1						1
Recruitment and selection (R&S)		1	1	1	1	1	1	1
	• Need to upgrade the existing HCMS	1	1	1	1	1	1	1
	• Use of technology in selection				1		1	
Employee relations (ER)		1	1	1	1	1	1	1
	• Improved communication	1	1	1	1	1	1	1

Note: “Part” is an abbreviation of “participant”.

Despite these positive outcomes, several disputable issues remain that warrant further research to fully understand the implications of digital transformation in HCM within the GCC. One critical area is the impact of digital transformation on job security and employee morale. As organizations adopt more AI-driven tools and automation processes, employees may fear job displacement or feel undervalued, which can affect morale and productivity. Future research should explore strategies for mitigating these fears and fostering a positive organizational culture that embraces change while ensuring employees feel secure and valued.

Another disputable issue is the digital divide within organizations, particularly regarding digital literacy. While some employees and managers may

quickly adapt to new technologies, others may struggle, leading to disparities in productivity and engagement. Research should focus on identifying effective training programs and support systems that can help bridge this gap. Additionally, understanding how different demographics within the workforce adapt to digital transformation can provide insights into tailoring strategies to meet diverse needs (Jones et al., 2021).

Furthermore, data security and privacy concerns remain a significant barrier to the widespread adoption of digital HCM systems (Sigurdsson et al., 2023). As organizations increasingly rely on digital platforms to manage sensitive employee information, the risk of data breaches and non-compliance with data protection regulations grows. Future research should

investigate robust cybersecurity measures and data governance frameworks that can protect against these risks. Additionally, exploring the regulatory landscape and its adequacy in handling the challenges posed by digital transformation will be essential. Understanding how GCC countries can harmonize their data protection laws with global standards while fostering an environment conducive to digital innovation is a crucial aspect that requires comprehensive exploration.

In conclusion, while the GCC region stands to benefit immensely from the digital transformation of HCM, addressing these disputable issues through targeted research and strategic initiatives is imperative. By doing so, organizations can navigate the complexities of digital transformation more effectively and harness its full potential to drive metamorphosis and success in the dynamic business landscape of the GCC (Dimingu & Mogaji, 2024).

5. DISCUSSION

The United Nations' e-government survey (UN, 2020) which measures the improvement in embracing digital services worldwide, indicates the necessity of developing digital capabilities while underscoring its challenges, including cybersecurity and data privacy. The countries of the GCC lead e-government in the Middle East and North Africa (MENA) region. The United Arab Emirates (UAE) led and ranked 21st, followed by Bahrain (38), Saudi Arabia (43), Kuwait (46), Oman (50) and Qatar (66). Another critical area for GCC nationals is acquiring and developing digital competencies. To implement digital competencies, GCC countries should address the formation of digital competence for nationals: "The ability to apply modern methods and tools of artificial intelligence to solve applied problems" (Udvaros & Forman, 2023, p. 6310).

For effective knowledge transfer, GCC governments should facilitate the rapid development of these digital competencies. This can be achieved through initiatives like upskilling, reskilling, organizing digital events, hackathons, launching projects, supporting startup solutions, and hosting annual competitions. Collaboration with the business sector is essential, and specific tasks and objectives should be co-developed with industry leaders.

For HCM in the GCC, adopting multi-faceted strategies is crucial for a fruitful digital transformation. Such strategies should address challenges stemming from both the business landscape and the ever-evolving technological realm. This includes substantial investments in cybersecurity to safeguard sensitive employee information from potential cyber threats. Moreover, the adoption of agile methodologies is essential, ensuring organizations remain flexible and adaptable as they embark on their digital HRM journeys.

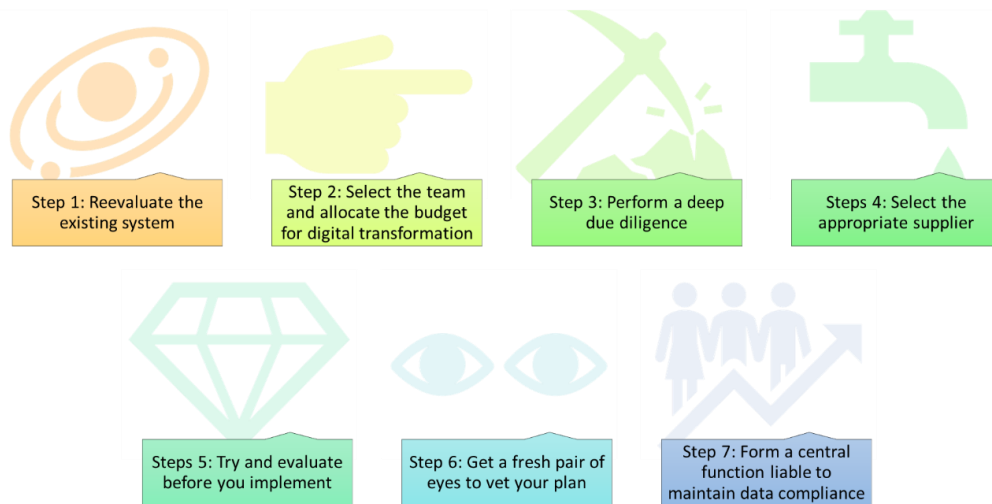
HR and HC leaders face several challenges when implementing digital transformation initiatives in GCC countries. One major challenge involves resistance from employees unfamiliar or uncomfortable with new technologies. Moreover, significant costs may be associated with acquiring and implementing digital solutions. To address these challenges, organizations need to invest in

change management strategies that foster employee acceptance and provide necessary training programs. Embracing innovative technologies for managing HC addresses these challenges and presents numerous opportunities for organizations within the GCC region. For instance, Ghi et al. (2022) stated, that digital transformation positively impacts firm performance, implying that investment in digital HCM can lead to improved productivity and profitability. Embarking on a digital transformation journey introduces a range of challenges. Potential obstacles include resistance to change, a need for more digital skills, and data security concerns. Comprehensive change management strategies that foster a culture of innovation and adaptability play a pivotal role in overcoming resistance. Upskilling and reskilling initiatives ensure employees possess the necessary digital competencies, enhancing their engagement and readiness for digital transformation. Additionally, organizations must adopt robust cybersecurity measures to safeguard sensitive HR data in the digital realm.

Organizations are leveraging digital platforms to automate HC processes using different solutions such as AI-powered chatbots revolutionize candidate interactions, providing personalized experiences and expediting the hiring process. Predictive analytics empower organizations to identify high-performing candidates, aligning recruitment efforts with strategic objectives. These applications demonstrate the potential of digital HCM to enhance efficiency, reduce administrative burdens, and improve overall HC strategies.

The future of digital HCM in the GCC will likely witness emerging trends that reshape workforce management practices. One such trend is the increasing use of AI-powered chatbots for employee self-service, enabling employees to access relevant information and perform routine tasks efficiently. Additionally, integrating virtual reality (VR) and augmented reality (AR) technologies into training programs can enhance employee learning experiences. These trends can significantly enhance workforce management as they facilitate personalized employee experiences, improve productivity, and promote a culture of ongoing learning. While the GCC region is progressively embracing digital HCM, empirical research is imperative to evaluate these initiatives' outcomes comprehensively. Research should focus on understanding the impact of digital transformation on organizational performance, employee satisfaction, and strategic outcomes. Delving into the challenges encountered during implementation provides valuable insights for refining digital strategies, enabling organizations to anticipate potential obstacles, adapt more effectively to changing environments, and achieve more successful outcomes in their digital transformation efforts. Moreover, evaluating the long-term sustainability of digital HCM practices is crucial for organizations aiming to derive lasting benefits from their investments.

Finally, the authors propose a roadmap (depicted in Figure 1) outlining seven pivotal steps to navigate digital transformation effectively, reflecting the unique GCC culture, governance, and demographic landscape.

Figure 1. A roadmap outlining seven pivotal steps to navigate digital transformation

Source: Authors' elaboration.

Figure 1 outlines a seven-step process for implementing a digital transformation in HCM, ensuring a thorough, thoughtful approach to transitioning to digital systems. Step 1 involves reevaluating the existing system to identify inefficiencies and establish a baseline. In Step 2, a dedicated team is formed, and a budget is allocated to oversee the project. Step 3 requires deep due diligence to evaluate potential technologies and vendors, leading to selecting an appropriate supplier in Step 4. Step 5 involves pilot testing the digital tools to refine them based on feedback, while Step 6 calls for an independent assessment to validate the plan. Finally, Step 7 establishes a central function responsible for maintaining data compliance. By following these steps, organizations can expect a smoother and more effective digital transformation, mitigating risks, optimizing resources, and ultimately improving efficiency, decision-making, and employee engagement.

6. CONCLUSION

In conclusion, the GCC region is experiencing a surge in HCM digital transformation. Adopting innovative technologies enables HR and HC leaders to attract, select, and manage HC by streamlining recruitment processes, facilitating seamless onboarding experiences, and enhancing performance management practices. Despite challenges associated with implementing digital transformation initiatives, there are significant rewards from embracing innovative technologies for managing HC

effectively. As challenges are addressed through comprehensive strategies, GCC organizations have many opportunities to modernize their processes and enhance the strategic impact of their HC initiatives. While the road to digital transformation may be complex, the potential for improved efficiency, effectiveness, and overall success makes pursuing the digital transformation of HCM a strategic imperative for organizations in the GCC region.

However, it is important to underline the need for further research. This study, while informative, has several limitations that should be acknowledged. The qualitative methodology, while providing in-depth insights, does limit the generalizability of the findings. The sample size of seven HR/HC managers, while sufficient for qualitative analysis, may not fully encompass the diversity of experiences and perspectives across different organizations and industries within the GCC. Moreover, the reliance on self-reported data from interviews may introduce bias, as participants might present socially desirable responses. Future research could greatly benefit from a mixed-methods approach, incorporating quantitative data to enhance the robustness and generalizability of the findings. Additionally, longitudinal studies could offer a more comprehensive understanding of the long-term impacts of digital transformation on HCM practices in the GCC region, furthering the knowledge and application of these innovative technologies.

REFERENCES

- Acciarini, C., Borelli, F., Capo, F., Cappa, F., & Sarrocco, C. (2022). Can digitalization favour the emergence of innovative and sustainable business models? A qualitative exploration in the automotive sector. *Journal of Strategy and Management*, 15(3), 335–352. <https://doi.org/10.1108/JSMA-02-2021-0033>
- Ahmad, N. (2023, June 5–7). *The framework of innovation in curricula for 21st century: Building nations* [Conference presentation]. Convention of the Chinese American Scholars Association (CASA), Prague, Czech Republic. https://www.g-casa.com/conferences/prague23/ppt_pdf/Ahmad.pdf
- Al-Alawi, A. I., Messaadia, M., Mehrotra, A., Sanosi, S. K., Elias, H., & Althawadi, A. H. (2023). Digital transformation adoption in human resources management during COVID-19. *Arab Gulf Journal of Scientific Research*, 41(4), 446–461. <https://doi.org/10.1108/AGJSR-05-2022-0069>

- Bella, K. M. J., Ramyasri, M. D., & Vijayashree, P. (2023). Revolutionizing HR management: embracing technology for enhanced efficiency and employee engagement. *International Journal of Scientific Research in Modern Science and Technology*, 2(3), 28–34. <https://ijsrmst.com/index.php/ijsrmst/article/view/116/112>
- Deshpande, S. (2023). *To understand the digital transformation in human resources and managers perception in Pune based MNC's* [Doctoral dissertation, Tilak Maharashtra Vidyapeeth]. DSpace Manakin Repository. <http://localhost:8080/xmlui/handle/123456789/15308>
- Dimingu, H., & Mogaji, I. M. (2024). The role of board dynamics in organizational transformation: A corporate governance perspective. *Open Journal of Business and Management*, 12(2), 1209–1227. <https://doi.org/10.4236/ojbm.2024.122063>
- Ghi, T. N., Thu, N. Q., Huan, N. Q., & Trung, N. T. (2022). Human capital, digital transformation, and firm performance of startups in Vietnam. *Management*, 26(1), 1–18. <https://doi.org/10.2478/manment-2019-0081>
- Gusain, A., Singh, T., Pandey, S., Pachourui, V., Singh, R., & Kumar, A. (2023, March 23–25). E-recruitment using artificial intelligence as preventive measures. In *Proceedings of the 2023 International Conference on Sustainable Computing and Data Communication Systems* (pp. 516–522). IEEE. <https://doi.org/10.1109/ICSCDS56580.2023.10105102>
- Hrynko, P. (2019). Improvement of the digital transformation strategy of business on the basis of digital technologies. *EUREKA: Social and Humanities*, 6, 10–18. <https://doi.org/10.21303/2504-5571.2019.001083>
- Hunt, C. S. (2014). Managing human capital in the digital era. *People and Strategy*, 37(2), 36–41. <https://www.proquest.com/docview/1753212882?pq-origsite=primo&sourcetype=Trade%20Journals>
- Jones, M. D., Hutcheson, S., & Camba, J. D. (2021). Past, present, and future barriers to digital transformation in manufacturing: A review. *Journal of Manufacturing Systems*, 60, 936–948. <https://doi.org/10.1016/j.jmsy.2021.03.006>
- Madi Odeh, R. B., Obeidat, B. Y., Jaradat, M. O., Masa'deh, R. E., & Alshurideh, M. T. (2023). The transformational leadership role in achieving organizational resilience through adaptive cultures: The case of Dubai service sector. *International Journal of Productivity and Performance Management*, 72(2), 440–468. <https://doi.org/10.1108/IJPPM-02-2021-0093>
- Mehta, A. (2022). *Power of capital: An adventure capitalist's journey to a sustainable future*. John Wiley & Sons.
- Okoronkwo, G. I. (2021). Digitization of human resource practices: The realities in the new normal. *International Journal of Business Systems and Economics*, 13(4), 243–261. <https://www.arcnjournals.org/images/ARCN-IJBSE-13-4-16.pdf>
- Osborne, N., & Grant-Smith, D. (2021). In-depth interviewing. In S. Baum (Ed.), *Methods in urban analysis* (pp. 105–125). Springer. https://doi.org/10.1007/978-981-16-1677-8_7
- Pavlovski, N. (2021). Improving human resources management processes through the implementation of a cloud-based software solution: A case study in a Portuguese pharmaceutical subsidiary [Master's thesis, Universidade do Porto]. Open Repository of the University of Porto. <https://repositorio-aberto.up.pt/bitstream/10216/135897/2/491402.pdf>
- Prokopenko, O., Garafonova, O., & Zhosan, H. (2023). Tsyfrovi instrumenty v upravlinni liudskymy resursamy: Yak tsyfrova transformatsiia vplyvaie na upravlinnia personalom [Digital tools in human resource management: How digitization affects personnel management]. *Socio-Economic Relations in the Digital Society*, 4(50), 84–94. <https://doi.org/10.55643/ser.4.50.2023.540>
- Rismayadi, B. (2024). Innovative human resource management strategy in the digital era. *Management Studies and Entrepreneurship Journal*, 5(2), 4889–4895. <https://journal.yrpiiku.com/index.php/msej/article/view/4810>
- Sigurðsson, K., Eypörsson, G. Þ., & Kristjansdóttir, H. (2023). Digital currencies, SWOT analysis. *Baltic Journal of Economic Studies*, 9(3), 1–9. <https://doi.org/10.30525/2256-0742/2023-9-3-1-9>
- Suandi, E. (2023). *Strategi keunggulan bersaing untuk menciptakan kinerja Bank Syariah yang kompetitif* [Competitive advantage strategy to create competitive Sharia Bank performance]. Eureka Media Aksara. <https://repository.penerbiteurka.com/media/publications/559701-strategy-keunggulan-bersaing-untuk-menci-bb003067.pdf>
- Udvaros, J., & Forman, N. (2023). Artificial Intelligence and Education 4.0. In *Proceedings of the 17th International Technology, Education and Development Conference* (pp. 6309–6317). IATED Digital Library. <https://doi.org/10.21125/inted.2023.1670>
- United Nations (UN). (2020). *United Nations e-government survey 2020: Digital government in the decade of action for sustainable development* (Report). [https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20\(Full%20Report\).pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf)
- Vogelsang, K., Liere-Netheler, K., Packmohr, S., & Hoppe, U. (2019). A taxonomy of barriers to digital transformation. In *Proceedings of the 14th International Conference on Wirtschaftsinformatik*, (pp. 736–750). Universität Siegen. <https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1231&context=wi2019>