

Key Directions for Developing the HR Management Ecosystem in Ukraine's Public Service Amidst the Advancement of Digital Technologies

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ABSTRACT

The study is dedicated to analysing the modern ecosystem of human resource management in Ukraine's public service amid global digitalisation. The article elucidates the essence of contemporary trends in digital technologies within the human capital management system (human resources – HR), which include the automation of HR processes, HR analytics and Big Data, the use of chatbots and mobile applications, digital integration with cloud systems, and the application of artificial intelligence and VR technologies. The dynamics of the implementation level of digital technologies in the national practice of human resource management in public service have been analysed. The specifics of transitioning HR processes to a digital format have been examined, particularly in actualising the digital platform Career.gov.ua and its integration with popular resources Work.ua and Robota.ua, as well as creating a HELP DESK for candidates. The necessity of updating the paradigm of human resource management in public service towards distancing, automation, the use of chatbots, cloud technologies, real-time data, the application of B2B programmes, the involvement of artificial intelligence tools, data integration, and the formation of a new type of corporate culture towards creativity and critical thinking has been substantiated. Attention is drawn to the need for the development of digital competence among both civil servants and HR specialists. It has been substantiated that the digital optimisation of human capital management allows for the automation of routine data collection, accumulation, processing, and transmission processes, which enhances the accuracy and speed of communication operations and improves corporate interaction processes. It has been determined that for further digital optimisation of HR processes in the public service, it is advisable to integrate international HR development practices in the context of HR automation vectors, HR marketing, HR analytics, e-learning, and SMART recruitment. It has been proven that implementing global digital trends in the development of the human resource management ecosystem of Ukraine's public service is an effective tool for increasing the performance of public service in Ukraine, its efficiency, and its alignment with the country's European integration progress.

Keywords: public administration, public service, civil service, service in local self-government, human resources, civil servants, local self-government officials, human resource management, human resource management ecosystem, digital development, digital technologies, digitalisation.

INTRODUCTION

Digital optimisation of human resource management represents a digital transformation of the personnel management paradigm aimed at improving labour productivity through effective recruitment and adaptation processes, continuous development and training, and the management and organisation of activities. Innovative development of HR processes is directed towards the digital modernisation of communication processes, including artificial intelligence and digital tools such as chatbots, service programmes, mobile applications, digital archives, and behaviour analysis. The active implementation of neural networks influences the dynamics of the human resource management system to minimise the time resources spent on personnel selection and the use of chatbots and video content for interviews.

Intelligent technologies, digital document protection, digital identification, and the digital office acquire specific features in the context of public service, forming a platform for the effective and competitive development of digital governance. In this regard, to improve the efficiency and quality of public service, it is advisable to maximise the potential of HR digitalisation, considering the international trend vectors, which highlights the relevance of this study.

LITERATURE REVIEW

The issue of developing the human resource management ecosystem in public service is relevant and attracts scientific interest from many contemporary researchers. In particular, aspects of modernising public service and human resource management in Ukraine are studied in the publications of Timoshenko et al. [1], Kuibida et al. [2], and Goncharuk et al. [3–5]. The potential for implementing digital technologies in public administration and the formation of digital competencies are explored in the works of Sochynska-Sybirtseva et al. [6], Baluieva and Snopenko [7], Tymoshenko et al. [8], Bei and Sereda [9].

The digitalisation of HR management processes is addressed explicitly by researchers Danylevych et al. [10], Meister and Brown [11], Dluhopolska and Huk [12], Zbritskaya and Soroka [13]. Among the numerous research results, the works of Garg et al. [14], Leonardi [15], Usai et al. [16], Goncharuk and Prudyus [17], Prudyus [18] are noteworthy for fundamentally substantiating the potential of artificial intelligence and cloud services in the context of human capital management. Despite these researchers' significant scientific and practical achievements, there remains a need to expand scientific research into the potential of digitalising human resource management within the context of Ukraine's public service, considering contemporary trends.

The study aims to investigate modern approaches to human resource management in the civil service of Ukraine in global digitalisation and to identify the main ways of introducing digital technologies in civil service HR.

RESEARCH METHODS

General scientific methods were used in the course of the study, including the structural-logical method – for developing the concept of improving the paradigm of human resource management in the public service; analysis and synthesis – to clarify the terminological framework, distinguish theoretical approaches to managing the digital transformation of organisational and personnel policies in public institutions under digitalisation conditions, determine the structural-functional specifics of impact, and form the general optimisation of the studied field; and concretisation – to systematise conceptual approaches to the transformation of HR in the public service, and to identify associated risks and obstacles.

RESEARCH RESULTS

The public service personnel management system currently operates with key performance indicators (KPIs), which are formed annually based on civil servants' performance results to assess their productivity. KPI is positioned as a pilot project for modernising public service personnel management by implementing new, progressive methodologies [19, 20]. The next stage should be the intensive introduction of digital HR technologies. In light of digital transformation, human resource management should be implemented by digitalising operations and control based on the partial virtualisation of processes.

The European community considers digital competence an essential skill for life and activity. It includes information literacy, communication and interaction skills, working with digital content, cybersecurity, and independent problem-solving [21].

Among the general trends that can be tracked in the digitalisation of HR in the public service of developed countries, the following should be highlighted as most practically relevant for Ukrainian practice:

1. Automation of Personnel Selection: Using digital systems like Applicant Tracking System (ATS) and automatically filling candidate profiles based on their pages in professional networks (LinkedIn).

2. Automation of Recruitment Processes: This includes onboarding, adaptation, training, internal document flow, and development using tools like ZohoPeople, Bamboo HR, and Hurma System, as well as anonymity in the preliminary selection and assimilation of recruitment and HR processes.
3. Using Social Networks: For candidate selection.
4. Digitalisation of Recruitment: Through online interviews and video conferences on Skype, Google Hangouts, or Zoom.
5. Forecasting and HR Analytics: Using artificial intelligence.
6. Employee Mood Monitoring and Engagement Measurement: Through mood polls available via products like eNPS and Gallup Q12, BambooHR, and Hurma.
7. Corporate Training: Using platforms for skill verification (Codility, TestDome, Tests4Geeks, Prometheus) [22].

Traditional HR digital transformation tools include unique systems for automatically filtering potential candidates, digitalising hiring processes, planning career growth, and rewarding employees based on Big Data.

In the context of Ukrainian realities, the process of transforming the public service personnel management system into public service HR using digital technologies should consider global trends – digital workforce, digital workplace, and digital HR (see Table 1), which involve the automation of HR processes, the use of integrated mobile applications, HR analytics, and Big Data, VR technologies, and artificial intelligence.

The promising advantages include personalising the user experience, increasing the speed of information processing through interaction with chatbots, analysing large volumes of data and their statistical processing, transforming organisational culture towards creativity, critical thinking, and mobility, and implementing Agile/Scrum principles, which involve a flexible approach and a teamwork system. Using the B2B programme potentially creates opportunities to increase the efficiency of information interaction within the internal communication process.

Table 1. Transforming Human Resource Management Functionality into HR Based on Digital Optimisation

HR functions	Digital tools
Recruitment and casting, marketing and adaptation	- E-Staff Recruiter (automation of staff recruitment); - ATS (candidate management system); - online assessment, social marketing; - blockchain and artificial intelligence; - candidate selection platforms; - chatbots; video interview (VCV).
Strategic and HR planning, HR branding	- HR brand platform; - HR analytics; - HR BigData (big data).
Personnel management	- HRM (human resource management); - SAP ERP HCM; - HR analytics, HR BigData; - CHIP (cognitive personality interface).
Individual performance management and staff engagement, labourorganisation, motivation and incentives, staff loyalty management	- DW (virtual workplace); - PM (performance management); - platforms for working with remote employees and freelancers.
Career and training management, development of creative and intellectual activity, corporate culture	- TMS (talent management systems); - LMS (learning management systems); - Machine Learning; - gamification, virtual classes, mobile learning.

Source: compiled by the author based on [13]

According to the Concept for implementing the human resource management information system (HRMIS) in public authorities and the approval of the action plan for its implementation, the development of the European-standard HRMIS functionality, aimed at meeting the needs of civil servants and society as a whole, enables the digitalisation and distancing of most processes within the public service human resource management ecosystem. The key advantages of HRMIS are presented in Figure1.

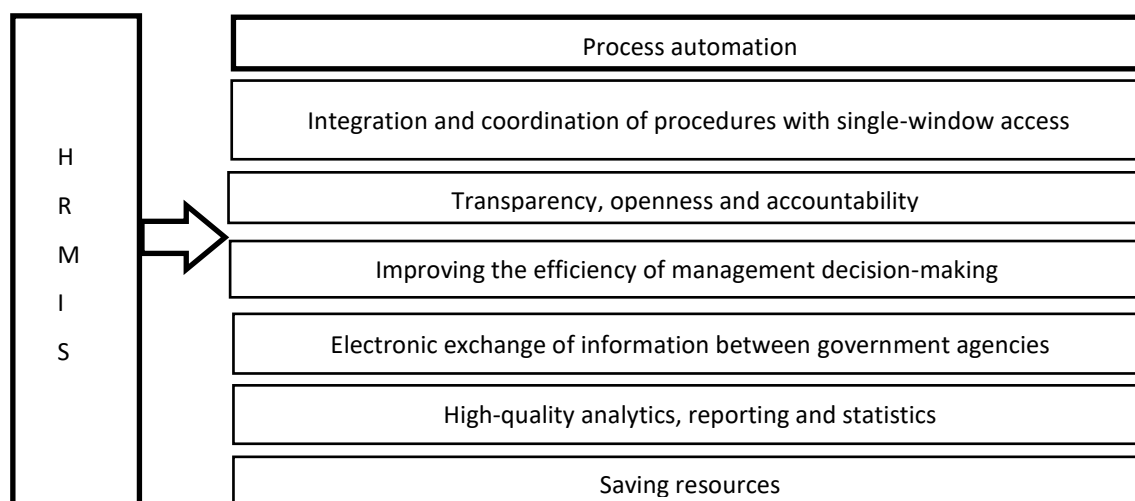


Figure 1. Key Benefits of an Integrated Human Resources Management Information System in the Civil Service

Source: compiled by the authors based on [23, 24]

As of 30 November 2023, 761 public authorities have been connected to HRMIS, and information on 39,653 civil servants (25% of the total number) has been entered. Figure 2 presents the dynamics of HRMIS integration for 2020–2023.

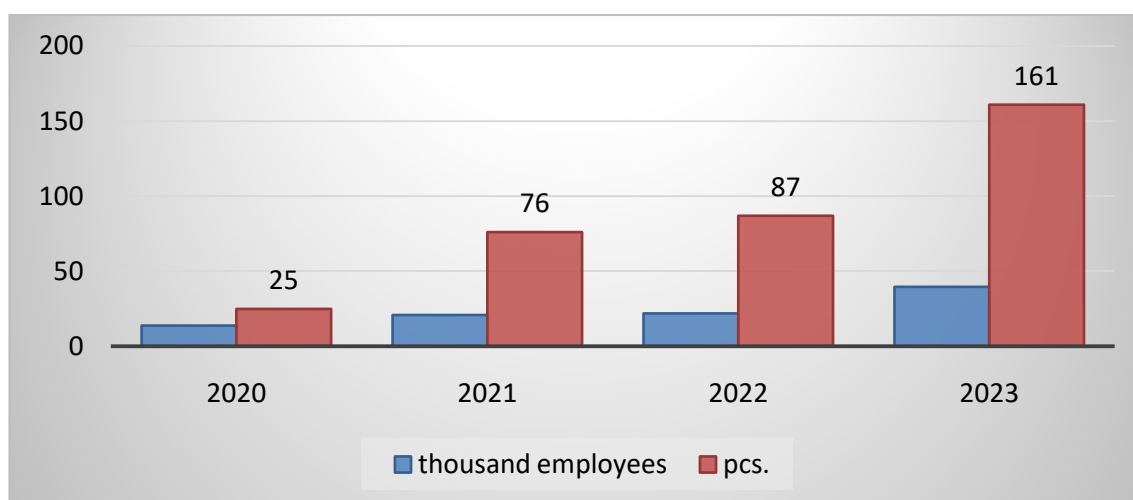


Figure 2. Dynamics of HRMIS Integration Level in 2020–2023

Source: compiled by the authors based on [24]

For further digitalisation of human resource management in the public service, it is necessary to consider international trends and practices, including:

1. Implementing digital technologies in HR should focus on HR automation, HR analytics, HR marketing, SMART recruitment, and e-learning.
2. Employer branding plays a significant role in creating a social communication base, measuring the effectiveness of initiatives and campaigns, storytelling, and an effective employee motivation system.
3. Establish quick responses to labour market dynamics, develop cross-cultural competencies, and ensure cross-cultural management.
4. Prioritising cloud-based HR platforms with mobile applications (Human Resource Information System (HRIS)).
5. Emphasising innovative professions that will be integrated into public service in the future: corporate career consultant, HR for freelancers, facilitator for remote employees, future job roles leader, reskilling coach, director of well-being, HR data collection agent.

In synergy, such measures will reduce resource costs and realise innovative opportunities in the public service's human resource management ecosystem, enhancing effective corporate interaction and omnichannel efficiency.

DISCUSSION

The issue of optimising the human resource management ecosystem is actively studied by several researchers Martínez-Caro et al. [25], Semenets-Orlova et al. [26], Kozhyna et al. [27], Donnelly and Johns [28], who investigate the impact of digitalisation on the efficiency of HR processes. The primary positive outcomes of digitalisation are considered to be resource savings, minimisation of data loss risk or unauthorised use, and increased human capital efficiency. Some researchers Milman and Kuchmiiova [29], Goncharuk and Prudyus [30], Rahman et al. [31] argue that the transformation of the labour market requires the digitalisation of traditional HR processes and recruitment components.

Lanzolla et al. [32] identify two paths of digital transformation: the offensive path is aggressive and involves the rapid acquisition of digital resources through portfolio investments and merger and acquisition tactics, while the defensive path is relatively slow and depends on the organic growth of existing companies' digital capabilities over time. Furthermore, researchers Baptista et al. [33] identify factors that ensure the effectiveness of HR processes in public service: data synergy, financial capabilities, and the level of intellectual resources.

Some researchers Urbinati et al. [34], Bratton et al. [35], Malik et al. [36] position digital applications and strategic tools as priority factors influencing HR in the concept of creativity, individualisation of performance management, and employee engagement. According to scientists, optimal work organisation, motivation and stimulation, and career and training management through digital tools contribute to developing creative and intellectual activities, optimising corporate culture, and employee loyalty.

Significant attention is paid by researchers to strategic and personnel planning [37], as well as HR branding [38]. Meanwhile, the practical implementation of digital transformation in public service personnel policy in the realities of Ukrainian society remains partially studied.

CONCLUSIONS

The digitalisation of the human resource management system in Ukraine's public service is a necessary prerequisite for the effective development of digital public administration and social processes, enhancing their quality and efficiency. The digital transformation of HR processes involves the maximum automation of routine procedures, digital integration with cloud systems, the use of HR analytics and Big Data tools, the implementation of modern integrated mobile applications, and the introduction of VR technology and artificial intelligence tools. The outlined strategy will allow for a prompt response to international labour market trends, implementing an individualised approach to civil servants and their motivation, developing cross-cultural competencies, and forming professional HR branding.

Currently, there is a process of systematic and consistent digital optimisation of human resource management in Ukraine's public service. Global changes are being implemented towards a digital workforce, digital workplace, digital HR, and HR development trends (HR automation, HR analytics, HR marketing, SMART recruitment, and e-learning).

The prospect for the further development of the HRMIS system in Ukraine currently includes significant functional expansion through implementing modules for high-quality analytics and reporting, performance evaluation, and continuous professional competency improvement. Additionally, priority is given to integrating the HRMIS system with national registers and implementing a contact centre platform for communication support.

REFERENCES

- [1] Timoshenko, N. M., Hnydiuk, I. V., & Marshuk, L. M. (2024). Financial inclusion as a strategic direction for the development of the financial sector of Ukraine. *Inclusive Economy*, 1(03), 82–87. https://doi.org/10.32782/inclusive_economics.3-13
- [2] Kuibida, V. S., Petroie, O. M., Fedulova, L. I., & Androshchuk, H. O. (2019). Digital competencies as a condition for forming human capital quality. National Academy of State Administration, Kyiv, Ukraine. <http://surl.li/ksxae>
- [3] Goncharuk, N., Orhiets, O., & Prokopenko, L. (2021a). Formation and development of the professional training system of public servants in Ukraine: Organisational, legal, and economic aspects. *Baltic Journal of Economic Studies*, 7(1), 39–46. <https://doi.org/10.30525/2256-0742/2021-7-1-39-46>
- [4] Goncharuk, N., Prudyus, L., Prokopenko, L., Vasylevska, T., Borysenko, O., & Pyrohova, Yu. (2021b). Human resource management in the field of public service in Ukraine in the context of its reform and modernisation under European standards. *AD ALTA: Journal of interdisciplinary research*, 11(1 Special Issue XVII), 11–16. <http://www.magnanimitas.cz/ADALTA/110117/PDF/110117.pdf>

- [5] Goncharuk, N., Pyrohova, Y., Suray, I., Prokopenko, L., & Prudius, L. (2023). Reformation Public Administration in Ukraine in the Context of European Integration: Current State. Problems and Priorities. *Economic Affairs*, 68(03), 1611–1625. <http://dx.doi.org/10.46852/0424-2513.3.2023.27>
- [6] Sochynska-Sybirtseva, I. M., Dorenska, A. O., & Tushevskaya, T. V. (2022). HR-management: A study guide. Central Ukrainian National Technical University, Kropyvnytskyi, Ukraine.
- [7] Baluieva, O. V., & Snopenko, H. V. (2020). Transformation of the HR management function: Modern trends. *Effective Economy*, 12. <https://doi.org/10.32702/2307-2105-2020.12.10>
- [8] Tymoshenko, Y., Kyslenko, D., Kuzmichova-Kyslenko, E., Leonenko, I., Servetsky, I. (2022). Features of the pre-trial investigation of air pollution. *Environment and Ecology Research*, 10(2), 133–145. <https://doi.org/10.13189/eer.2022.100203>
- [9] Bei, H. V., & Sereda, H. V. (2019). Transformation of HR technologies under the influence of digitalisation of business processes. *Economics and Organization of Management*, 2, 93–101. <https://doi.org/10.31558/2307-2318.2019.2.10>
- [10] Danylevych, N., Rudakova, S., Shchetinina, L., & Kasianenko, Ya. (2020). The digitalisation of HR processes in modern realities. *Galician Economic Herald*, 64(3), 147–156. https://doi.org/10.33108/galicianvisnyk_tntu2020.03.147
- [11] Meister, J. C., & Brown, R. H. (2020). 21 HR jobs of the future. *Harvard Business Review Home*. <https://hbr.org/2020/08/21-hr-jobs-of-the-future>
- [12] Dluhopolska, T. I., Huk, Yu. V. (2021). Digital transformation in HR: Directions, challenges and opportunities. *World Economy and International Economic Relations*, 62, 13–18. <https://doi.org/10.32843/bses.62-2>
- [13] Zbritskaya, T. P., & Soroka, O. V. (2021). Human resource management in the digital economy. *Economy and Society*, 31. <https://doi.org/10.32782/2524-0072/2021-31-20>
- [14] Garg, S., Sinha, S., Kar, A. K., & Mani, M. (2022). A review of machine learning applications in human resource management. *International Journal of Productivity and Performance Management*, 71(5), 1590–1610. <https://doi.org/10.1108/IJPPM-08-2020-0427>
- [15] Leonardi, P. M. (2021). COVID-19 and the new technologies of organising: Digital exhaust, digital footprints, and artificial intelligence in the wake of remote work. *Journal of Management Studies*, 58(1), 249–253. <https://doi.org/10.1111/joms.12648>
- [16] Usai, A., Fiano, F., Petruzzelli, A. M., Paoloni, P., Briamonte, M. F., & Orlando, B. (2021). Unveiling the impact of adopting digital technologies on firms' innovation performance. *Journal of Business Research*, 133, 327–336. <https://doi.org/10.1016/j.jbusres.2021.04.035>
- [17] Goncharuk, N., & Prudyus, O. (2022). Human resource management of the civil service of Ukraine in the context of digitalisation. *Aspects of public administration*, 10(5), 19–28. <https://doi.org/10.15421/152231>
- [18] Prudyus, O. (2023). Strategic directions of digital development of the human resource management ecosystem of the civil service of Ukraine in the context of globalisation. *Aspects of Public Administration*, 11(1), 5–11. <https://doi.org/10.15421/152301>
- [19] Pyrohova, Yu. V., & Goncharuk, N. T. (2021). Motivation and incentives in the public service of Ukraine as a tool for effective human resource management. *Scientific Discussion*, 2(52), 47–51. <http://scientific-discussion.com/wp-content/uploads/2021/03/VOL-2-No-52-2021.pdf>
- [20] Prudyus, L. V., & Prudyus, O. O. (2021). Digital development of the human resource management ecosystem of the civil service of Ukraine in the context of globalisation. *Economy and State. Series: Public Administration*, 4(20), 30–39.
- [21] Ukrainian Chamber of Commerce and Industry (2016). Project “Digital Agenda of Ukraine – 2020”. <https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf>
- [22] 30+ Apps for Recruiters and HRs (2019). HURMA. <https://hurma.work/blog/30-dodatkov-dlya-rekruteriv-ta-hr-iv>
- [23] OCMU (2017). Order of the Cabinet of Ministers of Ukraine “On Approval of the Concept of Implementation of the Human Resources Management Information System in State Bodies and Approval of the Action Plan for its Implementation” of 01.12.2017 No. 844-p. <https://zakon.rada.gov.ua/laws/show/844-2017-%D1%80#Text>
- [24] NAUCS (2023). The HRMIS system has proved its effectiveness in public authorities. National Agency of Ukraine on Civil Service. <https://nads.gov.ua/news/nataliia-aliushyna-cystema-hrmis-pidtvverdyla-svoiu-efektyvnist-u-derzhavnykh-orhanakh-hotuemos-do-startu-ii-fazy-proiektu>
- [25] Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, 154, 119962. <https://doi.org/10.1016/j.techfore.2020.119962>

- [26] Semenets-Orlova, I., Shevchuk, R., Plish, B., Moshnin, A., Chmyr, Y., & Poliuliakh, R. (2022). Human-centred approach in new development tendencies of value-oriented public administration: Potential of education. *Economic Affairs*, 67(5), 899–906. <https://doi.org/10.46852/0424-2513.5.2022.25>
- [27] Kozhyna, A., Razina, T., Kravchenko, A., Kuprii, T., & Melnyk, T. (2022). Human capital development in the context of globalisation processes: Regulatory aspect. *Economic Affairs*, 67(4), 887–895. <https://doi.org/10.46852/0424-2513.4s.2022.22>
- [28] Donnelly, R., & Johns, J. (2021). Recontextualising remote working and its HRM in the digital economy: An integrated framework for theory and practice. *The International Journal of Human Resource Management*, 32(1), 84–105. <https://doi.org/10.1080/09585192.2020.1737834>
- [29] Milman, L. M., & Kuchmiiova, T. S. (2023). Financial policy of the state in the conditions of digitalisation of the economy. *Digital Economy and Economic Security*, 8(08), 173–177. <https://doi.org/10.32782/dees.8-29>
- [30] Goncharuk, N. T., & Prudyus, L. V. (2018). Modernisation of the civil service and human resource management in Ukraine. *Aspects of Public Administration*, 6(1–2), 42–51. <http://doi.org/10.15421/1520186>
- [31] Rahman, M., Chowdhury, S., Zayed, N. M., Imran, M. A., Hanzhurenko, I., & Nitsenko, V. (2022). Does globalisation trigger an ecological footprint? A time series analysis of Bangladesh. *RocznikOchronaSrodowiska*, 24, 141–162. <https://doi.org/10.54740/ros.2022.011>
- [32] Lanzolla, G., Lorenz, A., Miron-Spektor, E., Schilling, M., Solinas, G., & Tucci, C. L. (2020). Digital transformation: What is new if anything? Emerging patterns and management research. *Academy of Management Discoveries*, 6(3), 341–350. <https://journals.aom.org/doi/abs/10.5465/amd.2020.0144>
- [33] Baptista, J., Stein, M. K., Klein, S., Watson-Manheim, M. B., & Lee, J. (2020). Digital work and organisational transformation: Emergent Digital/Human work configurations in modern organisations. *The Journal of Strategic Information Systems*, 29(2), 101618. <https://doi.org/10.1016/j.jsis.2020.101618>
- [34] Urbinati, A., Chiaroni, D., Chiesa, V., & Frattini, F. (2020). The role of digital technologies in open innovation processes: An exploratory multiple case study analysis. *R&D Management*, 50(1), 136–160. <https://doi.org/10.1111/radm.12313>
- [35] Bratton, J., Gold, J., Bratton, A., & Steele, L. (2021). *Human resource management*. Bloomsbury Publishing.
- [36] Malik, A., Budhwar, P., Patel, C., & Srikanth, N. R. (2022). May the bots be with you! Delivering HR cost-effectiveness and individualised employee experiences in an MNE. *The International Journal of Human Resource Management*, 33(6), 1148–1178. <https://doi.org/10.1080/09585192.2020.1859582>
- [37] Núñez-Merino, M., Maqueira-Marín, J. M., Moyano-Fuentes, J., & Martínez-Jurado, P. J. (2020). Information and digital technologies of Industry 4.0 and Lean supply chain management: A systematic literature review. *International Journal of Production Research*, 58(16), 5034–5061. <https://doi.org/10.1080/00207543.2020.1743896>
- [38] Ciarli, T., Kenney, M., Massini, S., & Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. *Research Policy*, 50(7), 104289. <https://doi.org/10.1016/j.respol.2021.104289>