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Examining the role and position of the digital human resource management in economic development

Abstract. In recent decades, the world of business and human resource management (HRM) has been involved with new changes that have had a major impact on organizations and economic institutions. With the advancement of technology and the expansion of digitalization, the concept of digital HRM has been introduced as a revolution in this field, which has caused major changes in the methods and processes of HRM. The objective of this study is to evaluate the impact of sustainable human resource practices on the economy, society and environment. Also, the intermediary role of digital HRM is investigated in this regard. The current research is a descriptive survey in terms of practical aim and methodology. The studied population of this research includes 5789 companies operating in industrial cities in Indonesia. The results of statistical analysis show that sustainable HRM has a direct and indirect effect on sustainable performance. Although external electronic supply chain strategy is linked to all three dimensions of sustainable performance, the hypothesis related to the effect of sustainable HRM on society with the mediating impact of internal electronic supply chain strategy has been rejected. Based on the findings, recommendations were presented to managerial sections to enhance sustainability and obtain benefits in the third issues at the same time.

Keywords: Digital Human Resource Management; HRM; Sustainable Management; Economics; Environmental and Social Impact

JEL Classification: E24; E41; E64; I18; J28; J31

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1. Introduction and Brief Literature Review

The purpose of this research is to examine and describe the necessity of using digital human resources management as an undeniable evolution in organizations. The digital transformation of human resources management means the use of artificial intelligence to select and hire people, review data, manage people's performance and evaluate the company's profits and losses, and it also speeds up and facilitates various organizational matters and increases the interaction and cooperation of employees. Therefore, paying attention to the management of digital human resources is essential in future organizations, and it is hoped that with future research in today's organizations and emphasis on it, we will be able to create the necessary dynamics in human resources as the beating heart of the organization and organizational agility. Digital HRM represents the integration of digital technologies and technological tools in HRM processes and strategies. This new approach tries to use the potential of modern technologies such as artificial intelligence, data analysis, automation and interactive platforms to improve the performance of human resources.

HRM is on the verge of a big transformation, driven by digital technologies. Technologies such as artificial intelligence, big data, social networks, cloud computing, blockchain, and such things are transforming human resources (Nicolás-Agustín et al., 2022; Popova et al., 2023). The combination of HRM and digital transformation has formed a new concept called digital HRM, which is called digital HRM. Digital (Alkerdawy, 2016). Digitalization does not affect HRM only by making daily administrative actions easier, but it provides something more to the organization. The use of technology makes the actual performance of the HR department easier. However, in order for an organization to manage its human resources digitally, it is necessary for the existing human capital in the organization to be aligned with the strategic needs of the digital age (Zhang & Chen, 2023).

Today, the concept of organizational agility is considered as another important and key factor in government organizations in order to provide better services to citizens and such cases (Nursalim, 2021). Today's economic and social environment has many characteristics of the sentence is the existence of a chaotic, unpredictable, interconnected and disruptive environment (Islas-Moreno et al., 2023). Now, in order for public sector organizations to strive for their progress in this environment, it is necessary for the managers of these organizations to adopt new management strategies and approaches (Chinoda & Kapingura, 2024). Therefore, in order to reduce administrative costs and increase the speed of service delivery, public sector organizations need better, faster and smarter solutions, especially in HRM (Sirenko et al., 2023).

In a study conducted at the University of Southern Africa, it was concluded that the maximum percentage of employees agree that digital HRM increases their performance. It also studied the impact of digitalization on human resource development, talent management and workplace performance. Research findings have indicated the positive impact of digital transformation on all variables. Nyathi & Kekwaletswe (2023) strongly advise organizations to promote digitalization in HRM practices, as it has become very important these days. A recent study by Nicolás-Agustín et al. (2022) showed that digitalization of HRM systems can eliminate many time-consuming works, re-education of error by human operator, and provide the time and energy for experts to overcome main issues and enable them to improve their efficacy which can result in the better performance of company. Hence, the implementation of digital HRM is important for organizations in order to enhance performance and maintain communication in the digital arena.

The most important points that human resources specialists in public sector organizations should pay attention to is whether human resources can carry out various actions such as changes in culture, programs, processes and policies that were carried out by employees in the past to the new era where most of the work is done in the form of it is carried out jointly by a group of people in different departments of the organization with the aim of finding talent, guiding or not. Unfortunately, due to the existence of special conditions, government organizations are usually less and slower to synchronize with changes in such conditions than other organizations and until today they have given less value to new concepts than other organizations, this issue is considered as one of the challenges facing these organizations.

The purpose of this research is to examine and describe the necessity of using digital human resources management as an undeniable evolution in organizations. The digital transformation of human resources management means the use of artificial intelligence to select and hire people, review data, manage people's performance and evaluate the company's profits and losses, and it also speeds up and facilitates various organizational matters and increases the interaction and cooperation of employees.

Elements of digital enterprise management

By developing the technology, HRM system should be reviewed to be adoptable with the changing world. HRM has changed from conventional system to electronic one which works with data. The main factors as follows are required to make this transformation:

Digital workforce

In the era of millennials, the current generations are considered the digital workforce, they have devices connected to the Internet, and web-based applications and services have always fascinated their daily lives. With this kind of workers, the system requires electronic system and data analysis to overcome the problems. Hence, E-HRM, which is not constrained to location and with fluent intelligence in the system by camera is needed to improve financial performance by the application of embedded data analytics.

Digital work and task

The content of work is digitized by using technology in work activities and management performance. Organizations must integrate digital elements into work processes and change the usual manual tasks to digital tasks. Organizations must also use digital tools and media to communicate with employees. The main connections, duties and performance of the system in E-HRM should be done by digital platform.

Management of digital support

Digital support management includes the planning, implementation and use of digital technologies to support HRM activities, such as payroll processing, compensation, performance management, training and development, etc.

Updating human resources technology

There is a huge shift from traditional HR software to modern, cloud-based systems. Recently, HR applications have moved to mobile devices and may change to mobile platforms in the future. These programs provide the possibility of analyzing, measuring and predicting the performance of employees. Mobile phone applications facilitate work across borders and geographically far away.

2. Method

The current research is descriptive-survey in terms of its practical purpose and data collection method, and considering that it examines the relationship between variables, it is considered to be correlational. The data collection tool is a questionnaire, and since a standard questionnaire has been used (Chinoda & Kapingura, 2024) that has been used in many studies, therefore, the data collection tool has content validity. The statistical community of the current research includes companies active in the industrial cities in Indonesia. The list of these companies is on the website of Indonesia Small Industries and Industrial Towns Company, the number of these companies is 6500. The desired statistical sample was determined using Morgan’s table of 380 companies, but for more certainty, 450 questionnaires were distributed in form of stratified random sampling, and finally 355 questionnaires were collected.

The development of information technology has played a key role in the evolution of HR. In the business world, digital technologies are changing every aspect of HRM from recruitment and hiring, training and development, performance appraisal and compensation. Therefore, a comprehensive transformation from traditional to digital in terms of policies and strategies and how to implement HRM practices is needed. According to Alkerdawy (2016), digital HRM essentially manages all HRM tasks through technologies, applications, and the Internet. Also, there should be innovations in HRM practices for attracting, rewarding and evaluating employees. Digital HRM also affects how employees are trained.

3. Results

PLS software and structural equations are used to analyze the data. The reliability of the questionnaires was also determined using Cronbach’s alpha test and composite reliability coefficient. Both alpha and composite reliability coefficient for all variables were more than 0.7, hence, it can be said with confidence that the research tool has the necessary reliability and its values are given in Table 1.

The validity of the questionnaires should be checked by the convergent validity criterion. Convergent validity is checked through the AVE (Average Variance Extracted) criterion, and if

Table 1:
Reliability and validity of research measurement tools

	Variable	AVE	Composite reliability	Cronbach's alpha
Sustainable HRM	Sustainable employment	0.71	0.91	0.82
	Sustainable education	0.75	0.89	0.84
	Service compensation	0.66	0.92	0.91
Digitalization	Environmental cooperation	0.89	0.93	0.82
	Efficiency	0.91	0.95	0.92
	Security of employees and customers	0.78	0.87	0.93
	Economy	0.61	0.88	0.93
	Environment	0.60	0.82	0.89
	Social	0.53	0.79	0.78

Source: Compiled by the author

this criterion exceeds 0.4, the convergent validity of the measurement tool is confirmed. Table 1 shows all the suitable convergent validity values of the questionnaire.

The results of the current research showed how the digitalization of the organization can lead to the sustainable performance of the organization. This study investigated in detail the management of digital human resources (including recruitment, training and compensation) and its relationship with the components of sustainable performance (social, economic and environmental performance) in Indonesian industrial estates. The statistical analysis of the research indicates a significant and strong relationship between digital HRM and economic performance.

These findings are consistent with the results reported by Nicolás-Agustín et al. (2022) and Sirenko et al. (2023). The results of examining the assumptions of this research are consistent with previous researches such as Zhang & Chen (2023) that the coherence of digital human resources management is a prerequisite for effective environmental management and sustainable performance. The results of this research also support the assumed mediating role. In fact, compatibility between human resource procedures for sustainable performance reduces supply chain management obstacles. The findings of this research show positive relationships between digital HRM and sustainable performance. In the sense that the dimensions of digital HRM and compliance with sustainable HRM standards increase managers' motivation to comply with environmental factors. Although the relationship between digitalization of HRM system and sustainable performance was not confirmed; But there is a strategic fit between digital HRM procedures with economic and environmental performance in the research statistics community. According to Nyathi & Kekwaletswe (2023), the digital HRM leads to the effective use of data and national capital, which in turn leads to cost reduction through the product cycle and takes initiative and prevents waste of resources, improves quality and creates new processes and products. A summary of the results of the hypothesis test are shown in Table 2 and will also be discussed below.

Table 2:
Summary of the results of the hypothesis test

Hypothesis	Variables link	Path coefficient	Significance	Results
1	Sustainable management - Digitalization	0.701	4.98	confirmed
2	Digital HRM - Economic performance	0.603	10.89	confirmed
3	Digital HRM - Environmental performance	0.8558	8.78	confirmed
4	Digital HRM - Social performance	0.334	0.09	rejected

Source: Compiled by the author

Digital workplace culture: The digital workplace culture has a great impact on the morale and behavior of employees. This culture promotes online interactions, promotes collaboration on digital platforms, and encourages information and knowledge sharing among employees. Digital workplace culture is defined as a combination of values, principles and behaviors that are shared across organizations and companies in the digital world. This culture consists of communication patterns, collaborative spirit, attention to work-life balance, and online interactions that accompany changes in technology and society.

Changes in work methods: The digital work environment causes major changes in work methods. Among these changes, we can mention the increase of flexibility in the workplace, the use of online collaboration tools, and attention to remote work.

Challenges in the digital workplace: Although the digital workplace comes with many opportunities, it also brings challenges. Among these challenges, we can mention the increase of stress in the online work environment, the reduction of direct human communication, and the lack of social interactions in the work environment.

Impact of technology on employment: The digital work environment has a great impact on the labor market and employment. Due to the development of online jobs and new business models, creating new job opportunities and increasing employment are among the results of these changes.

Online communication: The digital workplace culture changes communication patterns among employees. Online communication through messengers, emails, and collaboration platforms is done away from the constraints of time and place. This change in communication patterns makes it faster and more effective.

Promote collaboration on digital platforms: The digital workplace promotes a combination of collaboration and knowledge sharing. Through online collaboration platforms, employees can collaborate across multiple teams and projects and share knowledge with others.

Attention to work-life balance: One of the characteristics of the digital workplace is to pay attention to the work-life balance of employees. The possibility of doing remote work and flexibility in working time helps employees to have a better balance between professional duties and personal life.

Online interactions and knowledge sharing: Digital workplace culture encourages online interactions and knowledge sharing among employees. Through discussions, webinars and online learning platforms, employees can increase their knowledge and benefit from the experiences of others.

Encouraging innovation: The digital work environment encourages innovation. Online platforms and opportunities to interact with colleagues through digital communication make it possible to share ideas and promote different ways of working.

Using digital technologies and platforms, a digital workplace culture drives employees to collaborate more effectively, interact online, and promote work-life balance. These changes in the workplace culture lead to improved performance, increased employee motivation, and creation a dynamic and innovative environment.

4. Conclusion

Digital HRM has become the business world today. Organizations must move towards digital transformation to gain competitive advantage and relevance in the industry. This study examines the impact of digital resource management on the performance of industries and the findings of this study are important for organizations in helping them to effectively implement digital human resources and thus improve their performance. Also, these outcomes can serve as a basis for researchers for future investigation in the field of E-HRM and help other researchers identify relevant researches in their researches. Moreover, these results can assist researchers by supplying a basic frame for understanding the effect of digitalization in HRM and as well on the system efficacy. The main outcomes of the current research as the application of digital HRM are as follows:

Increased accuracy and efficiency: Data analysis and artificial intelligence improve accuracy in recruitment and selection of employees, performance evaluation, and management decisions.

Skills Development: Providing online training and digital training materials allows employees to improve their skills and capabilities.

Better interactions: Interactive and communication platforms in digital HRM allow employees and managers to communicate with each other quickly and effectively.

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