Sociotechnical Perspectives on Digital Technologies in Human Resource Management systems

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Abstract

This paper investigates how social media and digital technologies influence Human Resource Management (HRM) from a sociotechnical systems (STS) perspective. Beyond social media, particular attention in the paper is given to the use of artificial intelligence (AI), primarily due to the fact that this digital tool becomes increasingly integrated into HRM functions. Through a comprehensive literature review and empirical analysis based on a survey of 167 companies whose operations are located in the territory of the Republic of North Macedonia, this paper explores how the sociotechnical configuration of HRM information systems evolves in the context of social media, the other digital platforms and AI. For these purposes, multiple linear regression model was used with the OLS method of estimation of the coefficients. The findings demonstrate that organizations which align digital technologies with human-centric values and social processes report better HR function performance.

Keywords

Human Resource Management, Social Media, Digital Platforms, Artificial Intelligence, Sociotechnical Systems, Human-Centric Values

1. Introduction

The digital technologies, such as social media, the other digital platforms and artificial intelligence (AI) are rapidly transforming the way organizations manage their people and resources. Human Resource Management (HRM), which traditionally focused on administrative and support roles, is now becoming a central part of digital innovation strategies. These technologies are used in many HRM functions, such as the recruitment process, the creating the image of the company as a potential employer, training and development, performance management, employees' engagement with the company, and employees' satisfaction and retention. They can help reduce time, improve accuracy, and support data-driven decisions [1]. However, their growing use in HRM also raises important questions about fairness, transparency, and human values.

Many researchers have emphasized that it is not enough to focus only on the technical performance of social media, digital platforms and AI. It is equally important to consider the social context in which these systems operate. This is the key idea of the sociotechnical systems (STS) approach [2]. According to Guest, Knox and Warhurst [3], the STS theory highlights the need to design technology and social systems together so that they support each other. In the context of HRM, this means that digital platforms and tools should be aligned with the values, practices, and expectations of employees and organizations.

The sociotechnical perspective also helps in understanding how digital platforms and AI adoption affects job roles, decision-making processes, and employee trust. Kudina and van de Poel [4] stress that fairness and accountability in HRM systems cannot be ensured by technical improvements

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alone; they must be supported by organizational procedures and institutional safeguards. Similarly, Asatiani et al. [5] introduce the concept of " sociotechnical envelopment" to describe how organizations can adapt their structures and processes to responsibly manage complex digital tools such as AI systems.

By focusing on the sociotechnical aspects of digital technologies adoption, this research aims to help organizations make better decisions when using them in HRM systems. It supports the view that technology should serve people, not replace or control them and that responsible innovation is key to the future of work. As organizations continue to invest in technologies such as social media and AI technologies, understanding the balance between automation and human values will be essential for achieving both efficiency and fairness in HRM.

The purpose of this study is to explore how social media, the other digital platforms and digital tools including AI affects HRM from a sociotechnical perspective. It investigates how digital technologies and social systems interact, and how organizations can design HRM systems that are both effective and human-centered. The study uses both theory and survey data to understand how social media, the other digital platforms and AI influence the overall performance of HR functions.

2. Objectives, Research Questions and Hypothesis

The central objective of this study is to explore the impact of social media and other digital technologies and AI, on Human Resource Management systems through a sociotechnical lens. Specifically, the study aims to understand how these digital technologies interact with the human, organizational, and ethical dimensions of HRM, and how these interactions influence overall system performance. The study also seeks to identify the conditions under which social media, other digital platforms and AI contribute positively to HRM outcomes, and the factors that may hinder its effective integration.

To achieve this, the study pursues the following sub-objectives:

1. To map the current landscape of the digital technologies in HRM, with a focus on the recruitment process, the image of the company as a potential employer, training and development, performance management, employees' engagement with the company, and employees' satisfaction and retention.
2. To analyse the sociotechnical configuration of digital HRM systems, identifying key social, technical, and organizational elements.
3. To evaluate the effects of sociotechnical alignment in HRM systems on the total performance of HR function.
4. To evaluate the effects of adoption of social media and the other digital platforms on the total performance of HR functions.
5. To examine the effects of AI adoption on the total performance of HR function.
6. To propose a set of best practices for integrating social media, digital platforms and AI into HRM in a manner that aligns with sociotechnical principles and ethical guidelines.

This objective not only reflects the current state of academic inquiry into social media and the other digital platforms and HRM, but also addresses pressing concerns from industry practitioners who seek to balance digital innovation with responsibility. The findings are intended to guide HR profesionals and managers, system designers, and policymakers in crafting strategies that leverage social media, different digital platforms and AI while preserving the human essence of human resources.

To structure the inquiry, the study is guided by following primary research questions:

- RQ1: What are the social and technical implications of using social media, digital platforms and AI in HR functions?

- RQ2: How does the sociotechnical alignment of Human Resource Management systems influence the company's performance of HR functions?
- RQ3: How does the social media affect the company's performance of HR functions?
- RQ4: How do the digital platforms affect the company's performance of HR functions?
- RQ5: How does the AI affect the company's performance of HR functions?
- RQ6: How does the size of the company in terms of number of employee affect the company's performance of HR functions?

In alignment with these research questions, the following hypothesis are proposed:

- Hypothesis (H1): The sociotechnical alignment of HRM systems positively influences the performance of HR functions.
- Hypothesis (H2): The social media usage positively influences the performance of HR functions.
- Hypothesis (H3): The digital platforms usage positively influences the overall performance of HR functions.
- Hypothesis (H4): The AI usage positively influences the overall performance of HR functions.

These hypotheses rest on the assumption that technological benefits alone are insufficient for sustainable improvement in HR performance. Instead, true performance gains are realized when the implementation of technology is accompanied by parallel adjustments in organizational culture, workflow, communication practices, and stakeholder engagement, which is tested with H1. The hypotheses are tested through empirical data gathered from a cross-sectoral survey of companies from the Republic of North Macedonia.

3. The Impact of digital technologies on Human Resource Management

The integration of digital technologies such as social media, digital platforms and AI into HRM is transforming how organizations attract, develop, evaluate, and retain employees. They are being used across multiple HR functions and offer the promise of increased efficiency, better decision-making, and data-driven insights [6, 1, 7]. However, they also introduce significant risks related to bias, transparency, privacy, and the changing role of human professionals.

In recruitment, AI is automating tasks such as resume screening, chatbot-led pre-screening interviews, and candidate ranking. These tools can help HR departments reduce costs, speed up processes, and ensure standardized selection criteria. Nonetheless, studies have shown that many of these systems, when trained on historical data, replicate biases disadvantaging women, older applicants, or ethnic minorities [8, 9]. As a result, ethical recruitment requires the use of bias mitigation techniques, diverse data training sets, and human-in-the-loop validation [10].

In performance management, digital tools are employed to provide continuous feedback, track performance indicators, and recommend training or promotion paths. While this offers real-time insights and improves documentation, it can also lead to over-monitoring and dehumanized evaluations if not checked by HR practitioners [11]. Algorithms cannot always capture contextual factors such as emotional intelligence, creativity, or team collaboration, which are crucial to holistic performance assessment [12].

AI along with other digital platforms are increasingly central in corporate learning ecosystems. Learning Management Systems (LMS) powered by AI can create adaptive learning paths tailored to employees' career goals, competencies, and performance history [13]. This supports lifelong learning and agile workforce planning. However, implementation challenges remain, such as unequal access

to technology, differences in digital skills, and the need for personalization without violating privacy.

The rise of digital technologies have also redefined the competencies required of HR professionals [14, 15, 16]. Rather than simply managing HR operations, professionals must now understand digital platforms, AI systems, interpret algorithmic outputs, and assess their fairness and compliance. Budhwar et al. [17] emphasize the importance of cultivating new skills in digital ethics, data literacy, and human-AI collaboration. These competencies are increasingly critical for managing the human implications of automation.

From an organizational culture perspective, the introduction of social media and AI with the other digital platforms may affect trust dynamics. Employees may perceive AI-led decisions as opaque or impersonal, leading to resistance, stress, or disengagement [18, 10]. On the positive side, predictive analytics driven by AI can be used to forecast attrition, map future skill needs, and align talent strategies with long-term organizational goals. For instance, AI can identify potential leaders or uncover retention risks before they manifest, giving HR teams a strategic edge [7]. Moreover, the use of AI must be aligned with ethical and legal norms, especially in jurisdictions with evolving regulations such as the EU AI Act. High-risk applications in recruitment or employee monitoring will soon be subject to mandatory transparency and accountability requirements [19, 20].

In conclusion, digital technologies such as social media, digital platforms and AI are having a profound impact on HRM by improving operational efficiency and strategic foresight. Yet, its success depends on how thoughtfully it is implemented, governed, and integrated into human-centric frameworks.

4. The Sociotechnical Perspectives of the Digitalised HRM System - Literature Review

The sociotechnical integration of digital technologies such as social media, digital platforms and AI into HRM has become a key topic in both academic and professional debates. A growing body of research addresses the dual nature of digital platforms and AI, their technical capabilities and their social implications. This review synthesizes relevant literature to provide a foundation for understanding how digital technologies reshape HRM systems when examined through a sociotechnical lens.

The digitalization of HRM has introduced major changes in how HR tasks are performed, managed, and experienced. As social media, digital platforms and AI technologies become more common in HR departments, it is essential to understand not just how these systems function technically, but also how they affect people, work relationships, and organizational structures. This is where the sociotechnical systems (STS) perspective becomes important.

The STS approach focuses on the interaction between people (the social system) and technology (the technical system). It argues that both must be designed together to achieve effective, fair, and sustainable outcomes [21]. In the case of HRM, digitalization should not be seen as only a way to automate tasks or improve speed. It should also aim to improve job quality, support human decision-making, and maintain fairness in the workplace [3, 12].

Additionally, STS thinking draws attention to the evolving nature of systems and the need for flexibility. As noted by Brocke et al. [22], digital systems must adapt over time as workflows, technologies, and stakeholder expectations shift. This requires organizations to develop monitoring and feedback mechanisms that allow them to adjust HR systems based on employee feedback and emerging risks.

Several scholars have emphasized that HRM systems shaped purely by efficiency concerns risk neglecting the broader socio-ethical dimensions of work [18, 11]. Digital technologies such as social media and AI-driven tools may enhance consistency and productivity, but they can also create barriers to communication and lead to feelings of surveillance or disempowerment among employees. Therefore, STS theory suggests that digital HRM must be designed in a participatory and inclusive manner.

When HR functions become digitalized, they often change workflows and employee roles. For example, AI systems used for performance reviews may shift decision-making away from managers to algorithmic systems. While this may improve consistency, it can also reduce the role of human judgment and make employees feel monitored or judged by machines [11, 17]. Without careful planning, digital HR systems may unintentionally weaken employee trust or reduce transparency [4].

One important contribution to the sociotechnical view is the idea of "sociotechnical envelopment," which shows how organizations can manage AI driven digital tools and systems that are difficult to fully understand. Asatiani et al. [5] explain that organizations can set clear boundaries for how AI systems are used, monitor their outputs, and involve human reviewers to ensure ethical outcomes. This is especially important in HRM, where decisions affect people's careers and well-being. In many cases, this also involves ensuring that the legal requirements for fairness and non-discrimination are met [19].

In addition, digital HR tools often reflect the assumptions and goals of their designers. If these tools are based mainly on efficiency and cost reduction, they may overlook important social values like diversity, inclusion, and worker autonomy. According to Sartori and Theodorou [11], AI systems tend to reproduce existing inequalities if they are not carefully managed. The long-term effects of AI on organizational culture, inclusion, and employee development should be monitored continuously.

In summary, the sociotechnical perspective helps us see that digital HRM is not just about using new tools. It is about reshaping how work is done, how decisions are made, and how people are treated. Successful digital transformation in HR requires aligning social media, digital platforms and AI with human needs, ethical values, and organizational culture. When done well, this can lead to systems that are both efficient and fair, supporting long-term trust and performance in the workplace. A sociotechnical approach ensures that technological advancement in HRM is achieved not at the expense of people, but in partnership with them.

Khan et al. [6] and Upadhyay and Khandelwal [1] provide empirical evidence on the increasing adoption of social media, digital platforms and AI in recruitment, noting improvements in efficiency and accuracy. However, these benefits are balanced by concerns raised by Raghavan et al. [9] and Obermeyer et al. [8], who document how digital platforms and AI systems can perpetuate social biases when trained on historical or unbalanced datasets. Similarly, Binns et al. [10] highlight the lack of transparency in AI-driven decision-making, urging organizations to prioritize explainability and human oversight.

From a sociotechnical perspective, Guest et al. [3] revisit the core principles of socio-technical systems (STS), emphasizing the need to humanize digital transitions in the workplace. Their work aligns with Trist and Bamforth's [21] foundational studies on the interplay between technology and social systems. Building on this, Herrmann and Pfeiffer [23] propose the concept of "keeping the organization in the loop," advocating for institutional involvement in digital technologies design and evaluation processes.

Dwivedi et al. [13] explore the application of digital platforms powered by AI in learning and development, showing how personalized AI-driven tools can support skills development but may also contribute to inequality if not properly managed. Budhwar et al. [17] echo this concern, calling for upskilling of HR professionals in AI ethics and digital fluency. Brynjolfsson and McAfee [24] add that the increasing use of intelligent machines will reshape employment structures, urging organizations to prepare for this shift by adopting forward-looking talent strategies.

In addition, the works of Margherita [7] emphasizes the strategic potential of digital platforms and AI in HR, particularly in workforce analytics, talent forecasting, and performance optimization. Nevertheless, their findings also highlight the need for strong governance and regulatory compliance, especially as legal frameworks such as the EU AI Act begin to take effect [19]. Whittlestone et al. [25] support this call for governance by proposing AI ethics frameworks that are practical and institutionally grounded.

Overall, the reviewed literature strongly supports a sociotechnical approach to digital technologies in HRM. It underscores the importance of balancing efficiency with fairness, innovation with ethics,

and automation with human-centered values. These works provide the foundation for the empirical analysis that follows in this paper, highlighting both the promises and perils of social media, digital platforms and AI in shaping the future of HRM.

5. Methodology and Empirical Analysis

This study adopts a quantitative research methods aimed at exploring the influence of social media, digital platforms and AI on HRM performance, with a specific emphasis on sociotechnical alignment. In this study, the influence of social media as a commonly used tool in HRM is distinguished from the influence of other digital platforms. The research design follows a deductive approach, grounded in existing sociotechnical systems theory (Trist and Bamforth [21]; Dignum [18]) and informed by empirical evidence from prior studies [6, 5].

The data were collected through a structured online questionnaire from 167 companies across various Macedonian industries, including finance, manufacturing, telecommunications, retailing, services and technology. The survey targeted HR managers, IT leads in HR departments, and senior executives responsible for digital transformation initiatives. Participants were selected through stratified sampling to ensure representation across company sizes and digital maturity levels.

The multiple linear regression model with which we investigate the relationships between the variables, takes the following form:

$$IndexOPHR_i = \beta_0 + \beta_1 SocMediaUsFreq_i + \beta_2 DigPlatUsFreq_i + \beta_3 EmplRea_i + \beta_4 AI_i + \beta_5 Sex_i + \beta_6 LnParAge_i +$$

The dependent variable is index of overall performance of HR functions (IndexOPHR), which is the average of the answers of six questions in the questionnaire. The six questions relate to the performances of the company with regard to its the recruitment process, the image of the company as a potential employer, training and development, performance management, employees' engagement with the company, and employees' satisfaction and retention. The participants answered each of the questions using the five-point Likert scale, where a higher score indicates a better performance. An answer with a value of 1 means unsatisfactory or poor, 2 means satisfactory, 3 means good, 4 means very good, and 5 means excellent.

The main independent variable is Employee reaction (EmplRea) which measure the level of sociotechnical alignment in HRM systems. The variable takes a higher value if employees have a more positive reception towards the introduction of new digital tools and platforms in the company. An answer with a value of 1 means unsatisfactory or poor, 2 means satisfactory, 3 means good, 4 means very good, and 5 means excellent. The other two important independent variables are social media usage frequency (SocMediaUsFreq) and digital platforms usage frequency (DigPlatUsFreq), which measure the frequency with which companies use social media and the other digital platforms for various HR functions, respectively. An answer with a value of 1 means not using, 2 means very rarely, 3 means monthly, 4 means weekly, and 5 means daily. Higher values indicate that companies use social media and digital platforms more often, respectively. AI (AI) is a binary independent variable that takes the value of 1 if the company applies AI for its HR functions and 0 otherwise.

There are several control variables in the proposed model. Sex (Sex) is a binary variable that takes the value of 1 if the participant in the survey is female and 0 if the participant is male. We also control for the age of participants (ParAge) and for their highest education level, by including dummy variables (ParBSc – Batchelor of Science, ParMSc - Master of Science and ParPhD - PhD) for the three levels of higher education, whereas the reference group are participants whose highest level of education is high school. We also introduce control variables for the company age (CompAge) and for the number of employees (NoEmpl). Finally, we control for the company sectors, by introducing dummy variables for each of the industries (CompSecFin – Financial; CompSecIT – Technology; CompSecMan – Manufacturing; CompSecRet – Retailing; CompSecTelecom – Telecomunication; CompSecOthServ – Other Services;), whereas the reference group includes the rest of the sectors,

not included in the list in the questionnaire. We use the natural logarithm (ln) instead of the original values in order to lower the volatility of participant's age, company's age and the number of employees.

Table 1 and Table 2 show the descriptive statistics and correlation matrix, respectively. Regarding the correlation coefficients between the independent variables, the coefficient between social media usage frequency and digital platforms usage frequency is around 0.6 (statistically significant at 1% level), which may indicate signs of strong, positive correlation between these two variables. However, since the coefficient is lower than 0.7, we believe there is no concern for multicollinearity, and therefore include both independent variables in the model. Furthermore, the variable overall performance of HR functions corresponds to a question that asks the participants how they rate the overall performance of the HR functions of the company they work in. The participants answer it with the five-point Likert scale and this question is supposed to serve as a proxy for the dependent variable, which is in fact the average of the answers of six questions. The fact that the correlation coefficient between these two variables is slightly larger than 0.7 (statistically significant at 1% level) means that the two variables are generally highly correlated. For this study, we decide to use the index of overall performance of HR functions as the dependent variable, and since this is the average of six different scores, we estimate the coefficients of the model with the OLS method.

Table 1

Descriptive statistics

Date: 05/07/25 Time: 14:18
Sample: 1 167

	COMPANY_AGE	DIGITAL_PLATFORM...	EMPLOYEE_REACTION	INDEX_OF_OVERALL...	NO_OF_EMPLOYEES	OVERALL_PER...	PARTICIPANT_AGE	SOCIAL_M...
Mean	24.71711	3.664474	3.592105	4.010965	5024.026	3.796053	37.96711	3.243421
Median	20.00000	4.000000	4.000000	4.250000	52.50000	4.000000	39.50000	4.000000
Maximum	120.0000	5.000000	5.000000	5.000000	700000.0	5.000000	59.00000	5.000000
Minimum	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	18.00000	1.000000
Std. Dev.	20.79207	1.316951	1.075650	0.838871	56765.93	0.992280	11.36360	1.590521
Skewness	1.859968	-0.359694	-0.351795	-1.136561	12.19221	-0.685125	-0.088952	-0.333816
Kurtosis	7.007353	1.636074	2.439433	4.149755	149.7676	3.296800	1.696765	1.532810
Jarque-Bera	189.3464	15.05949	5.125397	41.09714	140190.4	12.44927	10.95712	16.45640
Probability	0.000000	0.000537	0.077096	0.000000	0.000000	0.001980	0.004175	0.000267
Sum	3757.000	557.0000	546.0000	609.6667	763652.0	577.0000	5771.000	493.0000
Sum Sq. Dev.	65278.84	261.8882	174.7105	106.2595	4.87E+11	148.6776	19498.84	381.9934
Observations	152	152	152	152	152	152	152	152

Table 2

Correlation matrix

Covariance Analysis: Ordinary
Date: 05/07/25 Time: 14:19
Sample: 1 167
Included observations: 152
Balanced sample (listwise missing value deletion)

Correlation Probability	COMPANY_...	DIGITAL_PL...	EMPLOYEE...	INDEX_OF_...	NO_OF_EM...	OVERALL_...	PARTICIPA...	SOCIAL_M...
COMPANY_AGE	1.000000 -----							
DIGITAL_PLATFORMS_USAGE_FR...	0.001831 0.9821	1.000000 -----						
EMPLOYEE_REACTION	0.035077 0.6679	0.407649 0.0000	1.000000 -----					
INDEX_OF_OVERALL_PERFORMA...	-0.143281 0.0782	0.145224 0.0742	0.316911 0.0001	1.000000 -----				
NO_OF_EMPLOYEES	0.022877 0.7797	0.083634 0.3056	-0.041521 0.6115	-0.033430 0.6826	1.000000 -----			
OVERALL_PERFORMANCE_OF_HR...	-0.112272 0.1685	0.175339 0.0307	0.300028 0.0002	0.706808 0.0000	-0.068605 0.4010	1.000000 -----		
PARTICIPANT_AGE	0.244879 0.0024	-0.256964 0.0014	-0.033613 0.6810	-0.198653 0.0141	0.087439 0.2841	-0.160349 0.0485	1.000000 -----	
SOCIAL_MEDIA_USAGE_FREQUEN...	0.008304 0.9191	0.589378 0.0000	0.410672 0.0000	0.236234 0.0034	0.090566 0.2672	0.191117 0.0183	-0.189721 0.0192	1.000000 -----

Table 3 shows the regression results. Employee reaction has a positive coefficient and is statistically significant (at 1% level), which means that companies where the employees respond more positively to the introduction of new digital tools, have a better performance in terms of the HR functions, thereby confirming Hypothesis H1. Hypothesis H2 is also supported, as the independent variable Social media usage frequency also has a positive coefficient and is statistically significant (at 10% level), meaning that companies which use social media for HR functions more frequently, on average have a higher index of overall performance of HR functions. In other words, using social media for HR functions on a more frequent basis has a positive impact on the company in terms of the HR functions. Conversely, Hypotheses H3 and H4 are rejected, indicating that the variables digital platform usage frequency and AI are not statistically significant, meaning that the other digital platforms and AI do not have an impact on the performance of the company in terms of its HR functions.

Table 3

Regression results

Dependent Variable: INDEX_OF_OVERALL_PERFORMANCE_OF_HR_FUNCTIONS
Method: Least Squares
Date: 05/07/25 Time: 14:09
Sample: 1 167
Included observations: 152

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.471867	0.854708	5.232038	0.0000
SOCIAL_MEDIA_USAGE_FREQUENCY	0.090719	0.053454	1.697138	0.0920
DIGITAL_PLATFORMS_USAGE_FREQU...	-0.057712	0.068044	-0.848166	0.3979
AI	0.202523	0.161785	1.251803	0.2128
EMPLOYEE_REACTION	0.217501	0.067726	3.211480	0.0017
SEX	-0.319174	0.133234	-2.395596	0.0180
LN_PARTICIPANT_AGE	-0.230786	0.221757	-1.040712	0.2999
PARTICIPANT_EDU_BSC	-0.106163	0.151928	-0.698773	0.4859
PARTICIPANT_EDU_MSC	-0.280077	0.194521	-1.439831	0.1522
PARTICIPANT_EDU_PHD	-0.377308	0.564521	-0.668369	0.5050
LN_COMPANY_AGE	-0.023690	0.083770	-0.282793	0.7778
LN_NO_OF_EMPLOYEES	-0.087534	0.038608	-2.267229	0.0250
COMPANY_SECTOR_FINANCE	0.323667	0.258484	1.252173	0.2127
COMPANY_SECTOR_IT	0.362135	0.228636	1.583895	0.1156
COMPANY_SECTOR_MANUFACTURING	-0.041825	0.215575	-0.194018	0.8465
COMPANY_SECTOR_OTHER_SERVICES	0.130279	0.199380	0.653421	0.5146
COMPANY_SECTOR_RETAIL	0.039491	0.239463	0.164913	0.8693
COMPANY_SECTOR_TELECOMMUNICAT...	0.521881	0.351071	1.486541	0.1395

R-squared	0.265202	Mean dependent var	4.010965
Adjusted R-squared	0.171982	S.D. dependent var	0.838871
S.E. of regression	0.763335	Akaike info criterion	2.408563
Sum squared resid	78.07924	Schwarz criterion	2.766654
Log likelihood	-165.0508	Hannan-Quinn criter.	2.554032
F-statistic	2.844889	Durbin-Watson stat	1.994951
Prob(F-statistic)	0.000403		

Concerning the control variables, sex has a negative coefficient and is statistically significant (at 5% level), meaning that, on average, the companies with female participants in the survey have worse performance in terms of the HR functions, compared to the companies with male participants in the survey. The number of employees of the company also has a negative coefficient and is statistically significant (at 5% level), meaning that, on average, companies with more employees rate their HR functions less positively. This indicates that in larger companies it becomes more difficult for the

company to organize and manage its HR functions, relative to smaller companies, and therefore larger companies have worse performance with regard to the HR functions.
In order to check the properties of the model, we conduct the Breusch-Pagan-Godfrey test for heteroskedasticity and the Breusch-Godfrey test for serial correlation (up to 2 lags). The results indicate that the model does not have heteroskedasticity and it does not have serial correlation (up to 2 lags) as well.

6. Conclusion

This study has explored the influence of digital technologies such as social media, digital platforms and AI on HRM through a sociotechnical lens. The analysis of contemporary literature from the field shows that social media, digital platforms and AI can make HR processes faster, more accurate, and more scalable. However, these gains are maximized when these technologies are embedded in an organizational culture that promotes ethical use, inclusivity, and transparency, which is in line with [26, 4]. Sociotechnical alignment where both technical tools and human systems adapt to each other is shown to be critical for achieving high performance in HR functions.
From a theoretical perspective, the study supports the foundational arguments of sociotechnical systems theory (Trist and Bamforth [21]; Mumford [27]), which states that technology alone cannot lead to sustainable organizational improvements unless it is integrated into systems that are co-designed with users and grounded in social values.
The results of a comprehensive empirical analysis involving 167 surveyed companies indicate that the degree of sociotechnical alignment within HRM systems and the frequent use of social media have a positive influence on the overall performance of HRM functions. Conversely, the other digital platforms and artificial intelligence do not exhibit a significant impact on HRM performance. Furthermore, the empirical research shows that larger companies have worse performance with regard to the HR functions.
Practically, this study highlights several key recommendations for HR leaders and policymakers. First, digital transformation strategies should go beyond adopting digital technologies and instead focus on redesigning work processes, training employees, and establishing ethical oversight mechanisms. Second, HR professionals must be equipped with new skills in digital literacy, data interpretation, and ethics to ensure that the use of digital technologies such as digital platforms and AI aligns with both business goals and employee well-being. Finally, the future of HRM will not be determined solely by how advanced the technology is, but by how well organizations are able to integrate these technologies into inclusive, transparent, and adaptive sociotechnical systems.

Declaration on Generative AI

The author(s) have not employed any Generative AI tools.

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Appendices

SURVEY QUESTIONNAIRE
Survey of Companies on the Use of Social Media and Digital Tools in Human Resource Management

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Part 1: General Questions

1. Please indicate your gender:
   a) Female
   b) Male
2. How old are you?

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3. What is your highest level of education?
   a) Secondary education
   b) Bachelor's degree
   c) Master's degree
   d) Doctoral degree
4. What is your job position in the company?
   a) Human Resources Manager
   b) Employee responsible for Human Resources
   c) Owner responsible for Human Resources
   d) Other (please specify)
5. In which industry does your company operate?
   a) Technology – IT
   b) Finance
   c) Retail
   d) Manufacturing
   e) Other services
   f) Telecommunications
   g) Other (please specify)

6. How many employees does your company have?

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7. How many years has the company been operating in the market?

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8. In which city is the company's headquarters located?

Part 2: Use of Social Media and Digital Platforms in HR

9. Which social media platforms are used in your company to perform HR functions (employee recruitment and attraction, company promotion and events, employee referrals)?
   a) LinkedIn
   b) Facebook
   c) Instagram
   d) Twitter (X)
   e) TikTok
   f) YouTube
   g) Other (please specify)
   h) We do not use social media

Answer questions 10 to 12 only if you use social media

10. How often does your company use social media for HR functions?
    a) Daily
    b) Weekly
    c) Monthly
    d) Very rarely

11. For which HR activities do you use social media?
    a) Recruitment and talent attraction
    b) Employer/Company branding
    c) Company promotion
    d) Employee referrals
    e) Other (please specify)

12. What type of content do you most frequently share on social media/digital platforms?
    a) Job postings
    b) Employee testimonials
    c) Content related to company culture
    d) Industry news
    e) Employee branding campaigns
    f) Training and development opportunities
    g) Insights into management performance
    h) Compensation and salary comparisons
    i) Other (please specify)

Questions related to other digital tools and HR software

13. Besides social media, which digital tools/platforms are used in your company to perform HR functions?
    a) Company portal/website
    b) Recruitment and talent attraction tools
    c) Employee training and development tools
    d) Employee communication and collaboration platforms
    e) Payroll and compensation software
    f) Employee performance measurement software
    g) Other (please specify)
    h) We do not use digital tools or HR software
14. If you do not use digital tools or HR software (answer h from the previous question), please state the reasons:

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15. If you do, how often does your company use digital platforms for HR functions?
    a) Daily
    b) Weekly
    c) Monthly
    d) Very rarely
16. How do employees react when new digital tools and platforms for HR functions are introduced?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor
17. Does your company use Artificial Intelligence for HR functions?
    a) Yes
    b) No

Part 3: Questions on Company Performance from the HR Perspective

18. How do you evaluate your company's performance in terms of recruitment and talent attraction?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor
19. How do you evaluate your organization's image as a potential employer?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

20. How do you evaluate your company's performance in employee training and development?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

21. How do you evaluate your company's performance in employee performance management?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

22. How do you evaluate your company's performance in employee engagement and identification with the company's brand?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

23. How do you evaluate your company's performance in employee satisfaction and retention?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

24. How do you evaluate your company's overall performance in HR activities?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

25. Which digital HR tools do you use, and for which HR functions is each tool applied?

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26. How do you evaluate your company's performance in using AI for HR activities?
    a) Excellent
    b) Very good
    c) Good
    d) Fair
    e) Poor

27. What are the biggest challenges your company faces when using social media and digital platforms for HR activities?
