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How management support and diversity factors affect employee performance within the digital workplace

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Abstract

Purpose – We aimed to determine how remote management support (MS) practices and staff diversity influenced employee performance (EP) within the digital workplace (DW) during the COVID-19 pandemic. The article highlights the challenges managers face in achieving EP in the DW compared to traditional work environments.

Design/methodology/approach – We developed a theoretical model (MS→DW→EP) and tested it based on the computer-assisted web interview (CAWI) conducted in mid-2022. Factors of primary, secondary and organizational diversity moderated the relationship between the variables. We purposely selected a sample of 1,000 respondents with remote working experience.

Findings – The results show that the DW partially mediates the relationship between MS and EP. The greater the uncertainty in managing people, the more flexibility, trust and job satisfaction required in the DW to achieve EP. Organizational diversity influenced the model more (i.e. teamwork vs individual work) than the primary and secondary diversity (i.e. gender and education).

Research limitations/implications – Although the sample size was large, we cannot consider it statistically representative.

Practical implications – Zoomers and Millennials reflect full mediation in the model that supports EP.

Social implications – Broader work autonomy, smaller organizations and teams as well as hybrid work arrangements, reduce the necessity for in-person meetings with superiors.

Originality/value – Supervisors had to reduce control over the DW while expanding organizational citizenship behavior (OCB) to enhance job satisfaction and thus ensure the expected EP during the pandemic. We may consider allowing an employee to postpone work as a new managerial activity within MS.

Keywords Management support, Employee performance, Digital workplace, Diversity factors

Paper type Research paper

Introduction

The performance management literature broadly discusses employee performance (further: EP). As a benefit-to-expenditure ratio regarding human work (Skowron-Mielnik, 2012), EP pays special attention to the result of that ratio in a tangible sense (as output or work value) or intangible benefit (as service provided by people). Moreover, EP obtains both results (i.e.

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what people achieve) and/or behaviors (i.e. how results are attained) (Armstrong, 2009; Pulakos, 2009; Hutchinson, 2013).

Team performance, EP, and organization effectiveness constitute performance levels (DeNisi, 2000) under the influence of many contextual factors (Skowron-Mielnik, 2012). For instance, how applied human resource practices and politics can influence EP and, consequently, employee behavior (Boselie, 2010). Interestingly, dysfunctional (i.e. counterproductive work) behaviors can also appear (Hutchinson, 2013).

Bearing the above in mind, management support (further: MS) for EP is facilitated through a range of HRM practices derived from the performance management system (Armstrong, 2009; Pulakos, 2009; Hutchinson, 2013). Simultaneously, the same performance management assumptions/team EP system has the potential to advance equality and diversity. However, in practice, raters tend to score lower for women and minorities in EP reviews (Dobbin & Kalev, 2016). Furthermore, some findings show that the general link between diversity and performance is weak, and the research largely neglects individual-level outcomes such as well-being and employee satisfaction (Labucay, 2015; Green, Bond, Miller, & Gifford, 2018). Other studies examined the relationship between diversity and team performance attributable to individual differences, mental models, and assumptions brought into teams (Yeager & Nafukho, 2012). However, the results were unclear. Middle managers' lack of commitment to diversity and inclusion often stems from their focus on operational issues. To address this, it is crucial to use key performance indicators (KPIs) and performance management systems effectively to integrate diversity and inclusion efforts (Gifford, Green, Young, & Urwin, 2019).

Consequently, MS practices generally positively influence EP in performance management literature. However, the findings regarding manager–worker separation have different effects on EP, depending on task complexity, cooperation with peers, and manager supervisory experience. Interestingly, in some cases, a manager–worker separation could surprisingly enhance EP (Bonet & Salvador, 2017). In turn, diversity research conducted before the last pandemic shows a weak or ambiguous influence on EP.

The last pandemic revealed that all parties needed more time to prepare for the remote work challenge on such a vast scale. Quantitative evidence on remote EP during the pandemic remains limited and inconclusive (International Labour Organization, 2021). Typical MS practices in the digital workplace (further: DW) had to confront previously unknown problems: remote work organization, supervision and monitoring EP, ensuring work effectiveness, and providing employee support (Pokojski, Kister, & Lipowski, 2022). Immediately, people reported significant struggles with IT equipment and support delivery. The need for support around well-being and the requirement for managers to alter their management style in terms of communication and motivating some employees also appeared (Forbes, Birkett, Evans, Chung, & Whiteman, 2020). Managers even decided to reduce the workload of their subordinates. For instance, managers of tourism enterprises wanted to focus first on the overall health condition of employees and only then on the enterprise's operational activity (Czernek-Marszałek, 2022). Interestingly, work satisfaction in the DW strongly appeared in Millennials who felt insecure prior to the pandemic (Deloitte, 2021).

The above remarks indicate that some challenges regarding EP measurement arose as remote employees were beyond their line managers' direct reach. Managers had to implement new MS to adapt swiftly to changing work conditions (International Labour Organization, 2021). Some of these strategies were informal but met the requirements for remote work. This approach could promote greater diversity in the workforce by overcoming barriers like physical location, commuting, and accessibility that might otherwise exclude certain individuals from particular jobs. The DW attracts more experienced and diverse job applicants regardless of the employees' location (Hsu &

Tambe, 2022). This is a chance to advance diversity research regarding its influence on EP.

Based on the above scientific premises, we formulated the following research questions regarding the constraints in relations among MS, EP, the DW, and diversity factors (MODs) during the pandemic:

RQ1. Are there in-use managerial activities that correspond to MS practices in the DW?

RQ2. Could a manager allowing an employee to postpone work be a new managerial activity within MS?

RQ3. Could work satisfaction become an indispensable and supportive EP item within the DW?

RQ4. How do MS and the DW affect EP?

RQ5. How do MODs affect EP through MS practices in the DW?

We aimed to determine how remote MS practices and staff diversity (MODs) influence EP within the DW during the last pandemic. We highlighted the challenges managers face in achieving EP in the DW compared to traditional work environments. The unobvious items within the MS and EP variables needed data-based confirmation to show a specific relationship between the variables in the DW. Diversity items of primary, secondary, and organizational diversity (MODs) differentiate the relationship between the variables. We had to build a theoretical model (MS → DW → EP) which fills a literature gap, as still we know very little about these relationships during the last pandemic.

Below, we present seven sections of the article. The literature review will pertain to constraints of remote workers-oriented MS, EP within the DW and selected MODs that influence EP. Method section will include the theoretical model and variables development, and sample presentation. Research findings will point to the general model and its characteristics. Section discussion and verification of hypotheses will answer the research questions. The three last consecutive sections will regard implications for theory and practice, limitations and research opportunities, and conclusions.

Literature review

Constraints of remote workers-oriented MS

Management support includes well-known practices regarding goal setting, coaching, monitoring, performance feedback, and dealing with underperformance, based on performance management system assumptions (Armstrong, 2009; Pulakos, 2009; Hutchinson, 2013). Employee support is a critical competency of "digital" leaders (Colbert, Nick, & George, 2016). Employees need effective support in the face of advancing technology (Zinczuk, 2021). A technologically connected DW may make it difficult to achieve flow at work (Colbert *et al.*, 2016). Evidence supports that certain work outcomes relate to employees' experiences in the DW (Richter, Heinrich, Stocker, & Schwabe 2018). Social interaction has a significant positive impact on work effectiveness, and its lack represents a barrier to mentoring, knowledge sharing, and remote effectiveness (Deepa, Baber, Shukla, Sujatha, & Khan, 2023).

The perspective of Polish lower and middle-level managers revealed DW's benefits and limitations in maintaining high EP (Kowalski & Ślebarska, 2022). According to studies, people perceive the lack of social interaction in the DW as a disadvantage (Wang, Liu, Qian, & Parker, 2021). Moreover, scholars found that improving technical support and minimizing unnecessary distractions could help overcome minor performance drawbacks (Kowalski & Ślebarska, 2022). The DW has influenced work practices, workstations, and work design

(Terhoeven, Tegtmeier, & Wischniewski, 2022) bringing new quality to the workplace (Mićić, Khamooshi, Raković, & Matković, 2022). If behavior and outcomes define EP, then the best way for a rater to assess EP depends on understanding how tasks can be programmed (task programmability) and the capability to measure outputs (Ouchi, 1979). However, in the DW there are fewer opportunities for employees to receive coaching and meet directly with their supervisors (Gibbs, Mengel, & Siemroth, 2021). Moreover, physical separation also impedes remote workers' development (Deepa *et al.*, 2023) which should be an integral part of good MS practices aimed at performance management.

There is evidence that in the context of remote teams, behavior control as part of employee monitoring is even more likely to undermine trust than it is in face-to-face teams (Mohdzaini & Gifford, 2020). Remote work might reduce psychological employee ownership and organizational citizenship behavior (further: OCB) if employees feel isolated or controlled by the organization (Wilhelm, Simarasl, Riar, & Kellermanns, 2022). In some cases, monitoring can even be detrimental to remote workers. This is why it is postulated to use information sharing (i.e. online platforms, emails, and phone calls) together with new forms of contact (e.g. written reports) to achieve the expected results (Eurofound, 2020; Pokojski *et al.*, 2022). According to the EY report (2021), Polish organizations surveyed derived their knowledge about EP from the experience of managers simply by asking them questions (40%). To a much lesser extent, they relied on key performance indicators (KPIs) (21%), conducted interviews with selected employees (19%), and collected data through surveys (17%). Surprisingly, 35% of organizations did not measure EP at all. Nevertheless, researchers have found that the simpler the task, the less influence the manager has on the worker's performance (Bonet & Salvador, 2017).

Uncertainty during the pandemic impeded decision-making processes in organizations. According to Polish labor law (Labour code, n.d.), an employee can refuse to perform work that requires special psychophysical fitness if their condition is not safe for the work or poses a threat to others, after notifying their supervisor in advance. Due to the pandemic and insecure health situation, employees could use the regulation broadly. Moreover, prior to the introduction of a special act called Specustawa (2020, article 3), the employer could not even commission remote work without the employee's consent. In some industries, employers even required workers to measure their body temperature. During the pandemic, there was also the problem of whether the employer, having suspicion or information about symptoms of COVID-19 or similar disease, should allow the employee to work. Noteworthy, the legal provisions were not precise in this respect and did not explicitly provide for such a right (Rycak, 2020). Being in quarantine did not have to mean stopping work. However, a deterioration of health could make the employee unable to work (Maczalska, 2020). Needless to say, long-Covid health complications among employees could occur and decrease their performance.

Based on the aforementioned performance management literature remarks, we hypothesized:

H1. MS is positively related to EP.

H2. MS is positively related to the DW.

EP within the DW

Very few authors find EP as only a record of outcomes and simultaneously indicate worker's behavior as just a good predictor for performance (Bernardin, 2010). After all, behavior that creates results. Thus, EP can only be about behavior or what employees do (Aguinis, 2009).

However, behaviors within EP are complex and multidimensional. In this regard, the management literature distinguishes task performance (i.e. comprises job-specific behaviors) and contextual performance (i.e. non-specific tasks outside the core responsibility). The latter is particularly important in certain contexts such as teamworking or where a high degree of flexibility is required. It is difficult to measure and thus it is neglected in practice. Moreover, contextual performance impacts job satisfaction and other employees' support perceptions (Hutchinson, 2013) meaning that it is very important for EP and MS.

Job satisfaction is linked to OCB, which is a consequence of effective employee management. Scholars associate OCB with EP and see it as a good indicator of a person's willingness to perform work in the interest of the organization. It may therefore be particularly desirable when organizations are under pressure. Moreover, OCB decreases the need for formal and costly control mechanisms (Hutchinson, 2013).

Importantly, there are economic and social types of EP, both equally important for the employer and employee (Skowron-Mielnik, 2012). The social type creates a qualitative work value for the employee which leads, among others, to job satisfaction. We have no way of measuring the social type of EP. Nevertheless, this category is represented by a set of economic measures and social phenomena descriptions, conditioning human input and work value creation (Smolbik-Jęczmień, 1999).

Bearing in mind that if job satisfaction comes from contextual performance (i.e. behaviors) deriving from the social type of EP, and is simultaneously linked to the OCB – EP relationship, then the DW might produce job satisfaction as an inevitable EP item. After all, we associate job satisfaction with EP in the job characteristics model (Kreitner & Kinicki, 2007) through task identity and significance, skill variety, autonomy, and feedback. During the unpredictable pandemic period, the working environment had to offer both physical factors (the workplace, equipment, interior design, lighting, and noise levels) and the interpersonal relationships in which work takes place (Jakimiuk, 2016). However, this developed a challenging yet attractive working environment for remote workers. DW was:

> A digital technology-supported working system consisting of, not only the physical space, employees, and tasks, but also a set of strategically accepted procedures and rules in order to maximize productivity and improve collaboration, communication and knowledge management (Mićić *et al.*, 2022, p. 38).

Although remote work is not a new phenomenon (Hsu & Tambe, 2022), DW design transforms traditional work practices through the use of information and communication technology ICT (Colbert *et al.*, 2016; Schmidt, Praeg, & Gunther, 2018; Attaran, Sharmin, & Kirkland, 2019), which supports workplace flexibility, and provides tools for problem-solving and learning (Richter *et al.*, 2018). During the pandemic, many online meetings and remote technological arrangements positively correlated with EP (Delfino & van der Kolk, 2021). The DW enables communication and collaboration, as well as flexible exchange of data, information, and knowledge (Haddud & McAllen, 2018).

More autonomy could also increase employees intrinsic motivation and positively influence goal-setting, decision-making, and EP (Kreitner & Kinicki, 2007; Lopes & Calapez, 2014; Delfino & van der Kolk, 2021). Meske and Junglas (2021) demonstrated that enabling employees to expect being autonomous, competent, and connected at work is not only crucial for their expected future performance at work, but also for their expected well-being.

Several studies cited by Ferrara, Pansini, De Vincenzi, Buonomo, and Benevene (2022) showed that remote workers experienced higher job satisfaction, work engagement, and motivation, simultaneously highlighting a positive relationship between the DW and EP. However, there are also doubts in this regard (Pokojski *et al.*, 2022). Employee performance became one of the key issues at the heart of the debate on the future of DW (Jakimiuk, 2016). Organizations are increasingly recognizing the value of the DW in improving the

effectiveness of teams and employees in accomplishing their goals/tasks (Talarczyk & Smoliński, 2022).

Based on the aforementioned performance management literature remarks, we hypothesized:

H3. DW is positively related to EP.

Selected MODs that influence EP

Managing diversity refers to organizational politics and practices aimed at managing employees of diverse backgrounds and identities, while creating a culture in which everybody is equally enabled to perform and achieve organizational and personal objectives. The literature confirms the need for organizational efforts to be focused on engaging with and managing a heterogeneous workplace in ways that are contextually and socially responsible (Syed & Memoona, 2017). There are three categories of diversity: primary (race, nationality, ethnic group, age, gender, sexual orientation, disability), secondary (a level of education, place of residence, family status), and organizational diversity (work experience, workstation, branch, etc.) (Forum Odpowiedzialnego Biznesu, 2009).

Gender is an important contextual factor in the DW. Scholars have reported that women experience more difficulties than men in various areas of everyday life during the pandemic (Drozdowski *et al.*, 2020). Women also need more organizational support than men, especially for remote working, work organization, and work-life balance (Deloitte, 2021; Ostaszewska, Pietrusińska, Lignar-Paczocha, & Szafranek, 2022). Thus, employers should prioritize solutions that enhance team effectiveness (Deloitte, 2021).

Interestingly, the transfer of Polish women from stationary work to remote workstations may diminish the real value of their work. Consequently, the pandemic could lead to increased discrimination against women in the labor market as it dismantles the "illusion of equality" (Drozdowski *et al.*, 2020, p. 31). According to Gibbs *et al.* (2021), the decline in performance is more pronounced for employees with children at home than those without. The decline in performance was more significant for women, although those who had been with the company longer fared better.

The issue of education has led to a catalog of competencies needed for practical remote work (e.g. Macoveiciuc, 2020; Prossack, 2020). Surveyed Polish women rated themselves as less competent in terms of the digital competencies needed in remote work today (Mazur, Pokojska, Śledziewska, & Włoch, 2021).

Employee age reflects generational preferences regarding the DW. Zoomers prefer high work autonomy, remote workstations, living online, and online communication with superiors over face-to-face office interactions (Lipka & Waszczak, 2017; Juchnowicz & Kinowska, 2022). Similarly, Polish millennials (Gen Y) are not ready to return to the nine-to-five office and want to continue with flexible working arrangements (Hastwell, 2021). Generation X only became familiar with mobile technology as adults (Agárdi & Alt, 2022). While there is no significant correlation between any of the generations and remote working preferences, none of them (i.e. Baby Boomers, X, Y, Z) want to return completely to in-person work. The most favored form of work among Polish workers is hybrid work (60% of respondents). Less than 10% of respondents were willing to return to the office full-time (Waszkiewicz, 2022).

Regarding remote workers who use flexible working arrangements, the boundaries between work and other aspects of life become blurred and the employees often end up working longer (overtime) hours (Glass & Noonan, 2016). Some studies confirm (e.g. Ostaszewska *et al.*, 2022) that by working from home respondents can save the time they would normally spend commuting. Another study found that 26% of people worked the same hours as before the lockdown (Carrotspot, Hays, & Uniwersytet SWPS, 2020). In

2020, Statistics Poland reported that the average weekly working time during the pandemic was shorter than the year before (Statistics Poland, 2021). Moreover, scholars suggest that women are more likely to work remotely than men (Raport z badania. Kobiety kontra . . ., 2021).

People in senior positions (board members, directors, and managers) worked remotely long before the coronavirus epidemic and now spend more hours per day working remotely than people in lower positions (assistants, specialists). The position held relates to the commitment level and the reported effectiveness. People in more senior positions report higher levels of commitment to their work and greater effectiveness in remote mode than others (Carrotspot *et al.*, 2020; Kowalski & Ślebarska, 2022).

Remote teamwork helps individuals learn to work together in a new work environment (Manko & Rosiński, 2021). Teams need frequent and interactive communication from management, such as live video sessions, email updates, and ways to ask questions and give feedback (Sull, Sull, & Bersin, 2020).

People currently working in small companies have had more experience working remotely before the pandemic and have worked remotely for longer (more days per week) than those in larger organizations (Carrotspot *et al.*, 2020).

Based on the aforementioned performance management literature remarks, we hypothesized:

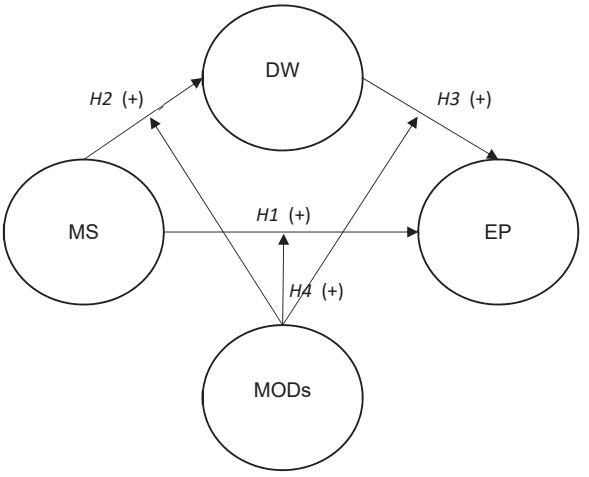
H4. MODs differentiate the relationship between variables in the model.

Method

Theoretical model and variables development

We aimed to develop, verify, and analyze the hypothesis of the DW as a mediator between MS practices and EP, as presented in the theoretical model (Figure 1). The MODs in the model represent the question of diversity.

We developed the model using structural equation modeling, IBM SPSS Statistics 28, and SPSS Amos 28 software. In the first step, we developed three constructs: MS, EP, and DW.



Source(s): Own elaboration

Figure 1.
Theoretical model presenting the influence of MS on EP mediated by the DW (n = 1,000)

Constructs	Items	Content	Based on references
MS	MS_1	In my DW, I am given goals and tasks by my direct manager	Pulakos (2009), Pokojski *et al.* (2022), Talarczyk and Smoliński (2022), Deepa *et al.* (2023)
	MS_2	My direct supervisor gives me adequate feedback on my overall performance in the digital workplace	
	MS_3	My direct supervisor helps me constantly to deal with job-related problems in my DW	
	MS_4	My direct supervisor is eager to talk with me and listen to me remotely	
	MS_5	If I know in advance that I cannot work remotely, I can postpone my work without fear from my supervisor	Labour code (n.d), Maczalska, (2020), Rycak (2020), Specustawa (2020)
EP	EP_1	In my DW, I achieve goals and complete tasks	Aguinis (2009), Armstrong (2009), Pulakos (2009), Hutchinson (2013)
	EP_2	As a remote worker, I am more effective than in the office	International Labour Organization (2021)
	EP_3	In my DW, I can develop my competencies (knowledge, skills, behaviors, attitudes)	Aguinis (2009), Armstrong (2009), Pulakos (2009), Hutchinson (2013)
	EP_4	The DW is a source of satisfaction for me	Smolbik-Jęczmień, (1999), Skowron-Mielnik, (2012), Hutchinson (2013)
DW	DW_1	My DW, equipped with computer hardware, databases, and software, is appropriate	Schmidt *et al.* (2018), Richter *et al.* (2018), Mićić *et al.* (2022)
	DW_2	My digital workplace, equipped with devices other than computer hardware, databases, and software (e.g. furniture, interior design, light, and noise level), is appropriate	Jakimiuk (2016), Mićić *et al.* (2022)
	DW_3	In my DW, I can develop good interpersonal relationships with colleagues in terms of mutual behavior, team norms, and other social and business relationships	Wang *et al.* (2021), Deepa *et al.* (2023)
	DW_4	In my DW, I can set my working conditions	Kreitner and Kinicki (2007), Lopes & Calapez (2014)

Source(s): Own elaboration

Table 1. Development of constructs

Constructs	Items	Factor loading	Cronbach`s alfa (min. 0.7)	CR (rho_a) (min. 0.7)	CR (rho_c) (min. 0.7)	AVE (min. 0.5)
MS	MS_1	0.864	0.869	0.881	0.907	0.663
	MS_2	0.853				
	MS_3	0.842				
	MS_4	0.853				
	MS_5	0.636				
EP	EP_1	0.708	0.824	0.830	0.884	0.657
	EP_2	0.820				
	EP_3	0.869				
	EP_4	0.837				
DW	DW_1	0.799	0.818	0.820	0.880	0.647
	DW_2	0.812				
	DW_3	0.843				
	DW_4	0.761				

Source(s): Own elaboration

Table 2. Reliability coefficients of the constructs

Each construct consisted of items derived from the management literature (Table 1). We did not exclude any of the items from the construction of each construct, i.e. they all achieved adequate Cronbach's alpha (above 0.7), factor loading (above 0.5), and their value in the variance test reached at least 70% (Table 2).

We used the Fornell-Larcker criterion (Fornell & Larcker, 1981) to check the discriminant validity of constructs in this structural equation model. Table 3 presents the square roots of the AVE values in the diagonals and in italic. They were higher than the minimum acceptable value of 0.7. Discriminant validity means that a constructed measure was empirically unique and represents phenomena of interest that other measures in a structural equation model were unable to account for (Hair, Black, Babin, & Anderson, 2010).

Sample

The company Biostat collected data using the computer-assisted web interview (CAWI) method in the second quarter of 2022. We used a five-point Likert scale questionnaire with 84 closed items to collect respondents' opinions. The research sample consisted of 1,000 respondents who had worked in a hybrid or remote mode in the last two years. The contractor selected the sample randomly based on respondents' availability. The study is part of the project titled "Diversity and Remote Work: Problems and Challenges" funded by the Department of Human Resources Management, Faculty of Management, University of Lodz, Poland. We examined the degree of association between the three constructs and selected moderators by means of correlation analysis (Table 4).

The data in Table 4 suggest that for moderators MOD_1, MOD_2, and MOD_3 there was a significant and moderate to strong correlation with the MS, EP, and DW constructs. Respondents with a university degree rated all the constructs higher than those with a lower level of education (MOD_7). However, respondents who spent less time working remotely (MOD_4) performing routine tasks (MOD_11) rated the variables MS, EP, and DW higher than those with the longer practice of remote working who did creative work. Managers also rated DW and EP better than subordinates (MOD_9). Surprisingly, women rated the DW slightly better than men (MOD_5). More experienced (MOD_8) and older workers (MOD_6) rated EP better than less experienced and younger workers.

Research findings

General model

We constructed the model of MS' influence on EP in accordance with the theoretical model presented previously. We employed SEM analysis to check the results of the tested hypothesis. We developed the final model (Table 5) with a set of latent variables behind the constructs (Figure 2). The model showed a weak and statistically significant influence of MS practices on EP (MS → EP, SRW = 0.28, $p < 0.001$). Noteworthy, DW was a partially mediating construct in the model. The standardized indirect effect between MS and EP was higher (0.762 multiplied by 0.575 amounts to 0.438, $p < 0.001$) than the direct effect (0.275) by 0.163. Table 6 shows the goodness-of-fit measures for the model.

Table 3. The Fornell-Larcker criterion

	DW	EP	MS
DW	*0.804*	–	–
EP	0.669	*0.811*	–
MS	0.665	0.644	*0.814*

Source(s): Own elaboration

No.	Spearman's rank correlation	DW	MS	EP	Mean	SD
(1)	DW	1.000	0.648**	0.657**	2.1353	0.81436
(2)	MS	0.648**	1.000	0.649**	2.0730	0.78295
(3)	EP	0.657**	0.649**	1.000	2.1735	0.79374
MOD_1	I work more hours remotely than in the office	0.289**	0.171**	0.306**		
MOD_2	Working remotely, I have more freedom to organize my work	0.447**	0.492**	0.495**		
MOD_3	I prefer to work remotely than in the office	0.429**	0.412**	0.658**		
MOD_4	Percentage of time spent working remotely	−0.249**	−0.173**	−0.315**		
MOD_5	Gender: women and men	−0.068*	0.012	−0.027		
MOD_6	Age: up to 31 and over 31 years	0.013	0.012	0.057*		
MOD_7	Level of education	0.150**	0.116**	0.114**		
MOD_8	Work experience: up to 5 and over 5 years	0.014	−0.004	0.052*		
MOD_9	Work role: manager and subordinate	−0.128**	−0.044	−0.081**		
MOD_10	Number of people on the team	−0.057*	−0.037	−0.051		
MOD_11	Routine vs creative tasks	−0.188**	−0.162**	−0.183**		
MOD_12	Team culture: informal vs formal	−0.052	−0.036	−0.010		

Note(s): *Correlation is significant at 0.05 (2-tailed)
**Correlation is significant at 0.01 (2-tailed)
MOD_1: "I work more hours remotely than in the office:" Group 1 (70.1%) represents respondents who gave scores of 1, 2 and 3, whereas respondents of Group 2 (29.9%) gave scores of 4 and 5; **MOD_2:** "Working remotely, I have more freedom to organize my work:" Group 1 (94%) represents respondents who gave scores of 1, 2, and 3, whereas respondents of Group 2 (6%) gave scores of 4 and 5; **MOD_3:** "I prefer to work remotely than in the office." Group 1 (81.5%) represents respondents who gave scores of 1, 2 and 3, whereas respondents of Group 2 (18.5%) gave scores of 4 and 5; **MOD_4:** Percentage of time spent working remotely in five categories: up to 25%, 25–49%, 50–74%, 75–99%, 100%; **MOD_5:** Gender: women – 65% and men – 35%; **MOD_6:** Age: up to 30 and 31 and more; **MOD_7:** Level of education: Group 1 (40%) represents respondents who completed primary and secondary, whereas respondents of Group 2 (60%) graduated from university; **MOD_8:** Work experience: up to 5 and over 5 years; **MOD_9:** Work role: manager (26.5%) and subordinate (73.5%); **MOD_10:** Number of people in the team: up to 5; 6–10; 11–20; 21–30; 31 and more; **MOD_11:** Routine vs creative tasks: a 1–5 rating scale, where 1 – only routine tasks and 5 – only creative tasks; **MOD_12:** Team culture: Group 1 (66.1%) includes respondents who gave scores of 1, 2, and 3, whereas respondents of Group 2 (33.9%) gave scores of 4 and 5, where 1 – no rules to abide by (informal behavior), 5 – strict rules to abide by (formal behavior)
Source(s): Own elaboration

Table 4.
Descriptive statistics and correlations between constructs (n = 1,000)

Constructs			Estimate	S.E.	C.R.	p-value	Standardized regression weights (SRW)
DW	←	MS	0.679	0.035	19.378	***	0.762
EP	←	MS	0.161	0.029	5.493	***	0.275
EP	←	DW	0.378	0.039	9.732	***	0.575

Note(s): $P < 0.001$***
Source(s): Own elaboration

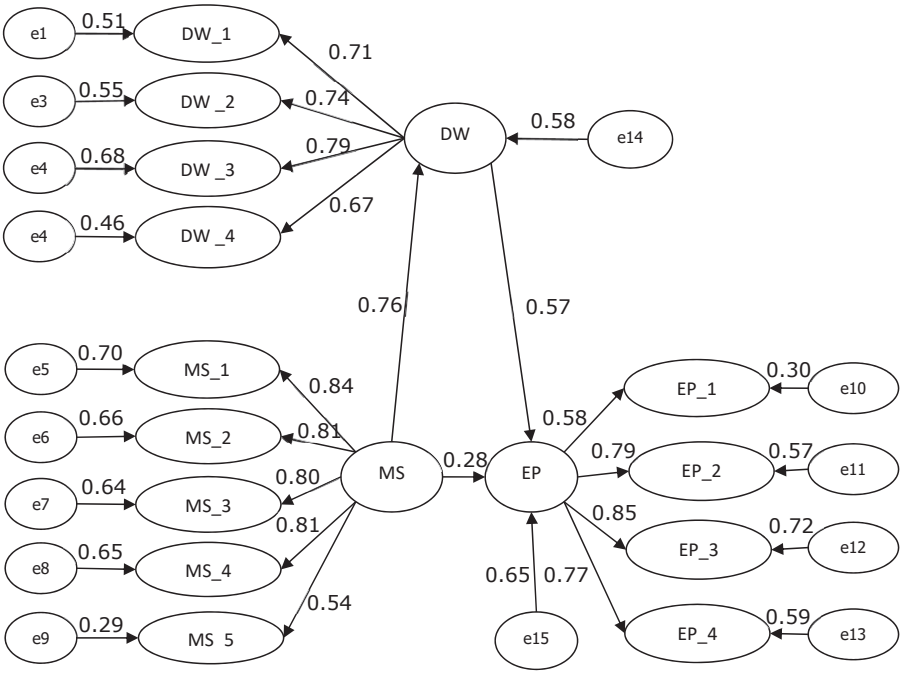
Table 5.
The model of MS – EP mediated by DW

Selected MODs

We deliberately presented the MODs in mixed sets to understand their mutual relationships and to facilitate further interpretation in the model's context.

The items of gender and education do not moderate the general model, i.e. there is no statistical significance between the model's constructs (MS → DW → EP), neither for men and women nor for education levels.

The age of respondents and work experience were two important contextual factors that differentiated the model (Table 7). Employees up to 30 years of age with short work



Source(s): Own elaboration

Figure 2.
The general model of MS – EP mediated by DW

Goodness-of-fit measure	Model	Result
Chi-square (λ^2)	Chi-square = 355.147	The requirement was not achieved
df	Degrees of freedom = 62	
p-value	Probability level = 0.000	
RMSEA, i.e. root mean square error approximation	RMSEA LO 90 HI 90 0.0690 0.062 0.076	*The requirement was achieved*
Chi-square (λ^2) divided by df	5.728	The requirement was not achieved
GFI of Joerskog	0.947	*The requirement was achieved*
AGFI of Joerskog	0.922	*The requirement was achieved*

Source(s): Own elaboration

Table 6.
Results of MS-EP mediated by DW model fitting

experience (up to 5 years) changed the model, with the DW taking on a full mediating role between MS and EP. For more experienced (at least 6 years) and older employees (31 years old and older), the DW was only a partial mediator between MS and EP.

The results also shed light on the percentage of time spent working remotely. We found full mediation in 44% of respondents who spent between 25 and 74% of their time working remotely, with the remainder in the office. In turn, for the extreme groups who worked either 100% or less than 25% of their time remotely (14 and 24% of respondents respectively), DW

partially mediated the model. Unexpectedly, the model revealed the only relationship between MS and EP without a mediating role of the DW, for the 17% of respondents whose remote working time was between 75 and 99%.

The following item also moderated the model: "I prefer to work remotely than in the office." Group 1 (81.5%) disagreed with the statement, whereas Group 2 (18.5%) answered in the affirmative. This dichotomous item reveals conflicting options. The model assumes full mediation for Group 2 (Table 8).

The respondents had to answer a question regarding potential overtime: "I work more hours remotely than in the office." Group 1 (70.1%) disagreed with the statement, whereas Group 2 (29.9%) answered in the affirmative. The results show that the above item did not moderate the model.

When the model was moderated separately for managers and subordinates, there were significant differences in the strength of the model constructs (Table 9). The model was not fully mediated in either case but it worked better for managers (26.5% of respondents) due to stronger, statistically significant relationships between constructs (i.e. MS →DW and MS → EP).

Construct influence			Up to 30 years of age Estimate	S.E.	C.R.	p	SRW	Up to 5 years of work experience Estimate	S.E.	C.R.	p	SRW
DW	←	MS	0.616	0.069	8.875	***	0.698	0.700	0.079	8.831	***	0.726
EP	←	MS	0.104	0.055	1.904	0.057	0.162	0.112	0.058	1.923	0.054	0.177
EP	←	DW	0.513	0.085	6.063	***	0.705	0.469	0.081	5.828	***	0.716

Source(s): Own elaboration

Table 7. Age of respondents and work experience (n = 1,000)

Construct influence			Group 1 (no) Estimate	S.E.	C.R.	p	SRW	Group 2 (yes) Estimate	S.E.	C.R.	p	SRW
DW	←	MS	0.692	0.039	17.626	***	0.767	0.572	0.082	6.994	***	0.692
EP	←	MS	0.259	0.037	7.086	***	0.400	0.054	0.046	1.170	0.242	0.139
EP	←	DW	0.356	0.044	8.072	***	0.496	0.268	0.082	3.284	0.001	0.565

Source(s): Own elaboration

Table 8. Model mediator "I prefer to work remotely than in the office" (n = 1,000)

Construct influence			Managerial jobs Estimate	S.E.	C.R.	p	SRW	Subordinate jobs Estimate	S.E.	C.R.	p	SRW	Significance of the difference in the strength of the paths $p < 0.05$
DW	←	MS	0.720	0.067	10.822	***	0.808	0.659	0.041	16.103	***	0.748	0.034
EP	←	MS	0.286	0.068	4.233	***	0.453	0.132	0.033	4.047	***	0.233	0.0005
EP	←	DW	0.299	0.077	3.879	***	0.422	0.390	0.045	8.572	***	0.605	0.0007

Source(s): Own elaboration

Table 9. Model mediator "managerial vs subordinate jobs" (n = 1,000)

When the model was mediated according to whether respondents worked individually or in teams, there was full model mediation by teamwork (27.3% of respondents, Table 10).

Interestingly, the model also achieved full mediation for the few respondents (Group 2, 6% of respondents) who agreed with the statement: "Working remotely, I have more freedom to organize my work" (Table 11).

When considering the team size, out of the five groups, only a small percentage of respondents worked in the groups of 21–30 (11.4%). In this particular group, the model achieved full mediation (see Note in Table 4). Moreover, the strength of the influence of the DW on EP in this group was the highest of all five groups and equaled 1.108. It might suggest that there is a high degree of multicollinearity in the data (Jöreskog, 1999). Moreover, when the model is mediated by the size of the organization, it only achieves full mediation for organizations with 10–49 employees.

The model is partly mediated by the extent to which the team is expected to comply with behavioral norms (Table 12).

Surprisingly, there is no statistical difference in the model when moderated by routine vs creative tasks.

Table 10. Model mediator "individual vs teamwork" (n = 1,000)

Construct influence			Individual work Estimate	S.E.	C.R.	p	SRW	Teamwork Estimate	S.E.	C.R.	p	SRW
DW	←	MS	0.667	0.040	16.876	***	0.746	0.689	0.077	8.918	***	0.793
EP	←	MS	0.171	0.033	5.205	***	0.303	0.098	0.067	1.473	0.141	0.147
EP	←	DW	0.327	0.042	7.824	***	0.519	0.598	0.105	5.718	***	0.776

Source(s): Own elaboration

Table 11. "Working remotely, I have more freedom to organize my work" (n = 1,000)

Construct influence			Group 1 (no) Estimate	S.E.	C.R.	p	SRW	Group 2 (yes) Estimate	S.E.	C.R.	p	SRW
DW	←	MS	0.663	0.037	17.895	***	0.741	0.776	0.132	5.860	***	0.856
EP	←	MS	0.172	0.030	5.652	***	0.288	0.032	0.131	0.244	0.807	0.064
EP	←	DW	0.370	0.040	9.239	***	0.555	0.414	0.173	2.386	0.017	0.755

Source(s): Own elaboration

Table 12. Behavioral norms in the team: "informal vs formal culture" (n = 1,000)

Construct influence			Informal culture Estimate	S.E.	C.R.	p	SRW	Formal culture Estimate	S.E.	C.R.	p	SRW	Significance of the difference in the strength of the paths $p < 0.05$
DW	←	MS	0.630	0.040	15.743	***	0.753	0.801	0.072	11.165	***	0.782	0.1461
EP	←	MS	0.166	0.034	4.908	***	0.304	0.144	0.059	2.446	0.014	0.210	0.1548
EP	←	DW	0.351	0.047	7.460	***	0.537	0.435	0.070	6.242	***	0.648	0.0001

Source(s): Own elaboration

Discussion and verification of hypotheses

The results for MS in the general model (Table 5) were consistent with findings reported in the performance management literature (Pulakos, 2009; Delfino & van der Kolk, 2021; Talarczyk & Smoliński, 2022; Pokojski *et al.*, 2022; Deepa *et al.*, 2023). Supervisors provide employees with goals and tasks, feedback on performance, support in dealing with problems within the DW, coaching, and are eager to communicate (items: MS_1, MS_2, MS_3, and MS_4). They did not deviate from typical manager activities while managing subordinates in stationary workstations. Nevertheless, these remote practices may present challenges for both parties as they can impose constraints on communication (Deepa *et al.*, 2023).

A new MS practice (MS_5) emerges regarding the supervisor's consent for postponing work. Employees now feel comfortable informing their supervisor in advance if they cannot work remotely on a specific day, a practice that emerged during the pandemic. Managers need to follow unclear regulations about remote work delegation to reduce uncertainty, maintain good relations with subordinates, and keep them motivated. Physical separation between management and employees may promote mutual trust (Bonet & Salvador, 2017). At the same time, individuals are insecure about their work. Thus, managers make every effort to make the work process go smoothly. They equip the DW with the fundamental source (DW_1 and DW_2), make working staff at ease (DW_3), and make them feel capable of arranging their own DW (DW_4). These managerial activities are coherent with some findings on the importance of social interaction in the workplace (Deepa *et al.*, 2023), sufficient information sharing (Delfino & van der Kolk, 2021; Pokojski *et al.*, 2022), broader autonomy (Meske & Junglas, 2021), and the design of the digital work environment (Schmidt *et al.*, 2018; Richter *et al.*, 2018; Mićić *et al.*, 2022). The findings show that mutual trust between managers and employees prevailed.

Simultaneously, the respondents rated their EP as high. They feel they can achieve goals and tasks, enjoy online possibilities to develop their competencies, and feel they are more effective remotely than in the office (EP_1, EP_2, and EP_3). The issue of job satisfaction (EP_4) within EP also emerges as it constitutes an essential social element of EP (Skowron-Mielnik, 2012), which accompanies OCB. This is especially valuable when organizations face pressure (Hutchinson, 2013).

We developed the general for a specific period of the global pandemic, and thus its variables also include unexpected items (MS_5 and EP_4). However, the relationships among the variables in the model were anticipated and based on management literature. Moreover, MODs moderated. the model. Upon examining the results in terms of MODs, we identified three distinct and characteristic groups.

Group 1 combined primary and secondary MODs and reflected Zoomers' and Millennials' preferences. The model achieved full mediation for respondents up to 30 years old (30.8% of individuals) and those with up to five years of work experience (27.3% of individuals).

Group 2 encompassed organizational MODs. The model achieved full mediation when considering the following organizational characteristics: hybrid work (44% of respondents), remote work preferred over work in the office (18.5%), teamwork (27.3%), a team size of 21–30 people (11.4%), organization size of 10–49 people (23.7%), and autonomy in work organization (6%). A considerable lack of work autonomy in the DW characterized the last pandemic. This indication of work autonomy strongly supports the DW, but also shows limitations (Meske & Junglas, 2021) and lack of flexibility in many other individuals (Delfino & van der Kolk, 2021). Remote teamwork helps individuals to acquire digital competencies quickly (Manko & Rosiński, 2021). The team and organization sizes are similar and remind us of the Dunbar number, which states that interaction frequency decreases as group size increases (Webber & Dunbar, 2020). There is a significant difference in the strength of the relationship between the DW and EP, favoring a formal culture that employees must adopt.

Norms support the quality of human resources and can be introduced through professional competencies (Jamka, 2017).

Bearing in mind the above two groups, only Zoomers and Millennials are likely to fall into the category of people (18.5% of respondents) who prefer to work remotely within the DW all the time, rather than in the office (Lipka & Waszczak, 2017; Hastwell, 2021; Juchnowicz & Kinowska, 2022). Our results considerably deviate in this regard (Reisinger & Fetterer, 2021). Nevertheless, we can interpret the findings concerning the significant implementation of hybrid work (44% of respondents) as indicative of the increasing popularity of hybrid work arrangements in Poland (Waszkiewicz, 2022).

Group 3 pertained to job roles. Managers (26.5%) were more adept at remote working than their subordinates (73.5%). Although DW only partially mediated the model, the relationships between the constructs were statistically significant and stronger for managers. This conclusion fits well with the findings of other authors (Carrotspot *et al.*, 2020; Kowalski & Ślebarska, 2022).

There are some surprises regarding the MODs. The model did not differentiate between men and women, and the level of education did not matter. Non-polish literature shows the opposite (Deloitte, 2021; Gibbs *et al.*, 2021). However, these problems could be mitigated in some way by MS, perhaps by using a fair share of hybrid work or other employment strategies that could reduce the above inconveniences.

In light of all the presented results, it is possible to confirm all four hypotheses (there is no reason to reject any hypothesis).

Implications for theory and practice

The general model presented suggests that MS can positively influence EP through the DW variable and that various MODs may also play a role in these relationships. This is not surprising, given that the model's assumptions are based on performance management literature. However, the context of the pandemic shaped the model, necessitating updates to previous MS practices and EP measures. During the pandemic, supervisors had to introduce a set of remote MS practices while simultaneously addressing constraints related to the challenging DW environment, ambiguous legislation, and the need to achieve the expected EP. They had to reduce control over the DW while expanding OCB to enhance job satisfaction and ensure the expected EP. The model emphasizes that with greater uncertainty in managing people comes the requirement of more flexibility, trust, and job satisfaction in the DW to achieve EP.

Furthermore, MODs act as moderators within the model, illustrating its functionality across various contexts. We found organizational MODs (Group 2) to exert a greater influence on the model than secondary (e.g. education) and primary (e.g. gender) factors. This suggests that under certain organizational conditions, the model's full mediation can ensure the anticipated EP when working entirely remotely.

From a practical perspective, the results confirm that managing younger employees (<30) remotely is easier, and they do not need in-person meetings with their supervisors. Furthermore, broader work autonomy, smaller organizations, and teams, as well as hybrid work arrangements reduce the necessity for in-person meetings with superiors. This reflects full mediation in the model and supports EP.

The research questions yielded the following answers: (1) there are managerial activities currently in use that correspond to MS practices in the DW; however, they are predominantly conducted remotely, (2) allowing an employee to postpone work can be considered a new managerial activity within MS during the pandemic, (3) job satisfaction has become an indispensable and supportive element of EP within the DW, as a result of reduced control and the prevalence of OCB, (4) we could develop a model in which MS had a weak influence on EP,

being partly mediated by the DW, (5) MODs impact EP through MS practices in the DW in various ways depending on the contextual factors.

Limitations and research opportunities

The presented model presumably performs best only under unexpected conditions and in scenarios where previous managerial activities may be compromised due to contextual factors. Online research cannot guarantee that respondents understand the questions correctly. To reduce the risk of standard method variance, we used several procedural remedies. These included protecting respondent anonymity, reducing item ambiguity, and randomizing the order of scale items. We also employed verification questions to confirm respondents' understanding of the key questions. Although the sample size was large, it cannot be considered statistically representative.

Conclusions

The findings on the new practices show that respondents were in an unusual situation during the intense phase of the recent pandemic. Managers fared better than subordinates within the DW but faced challenges in providing employees with MS practices (Forbes *et al.*, 2020). Meanwhile, diversity issues have appeared to be important factors that influenced the MS – EP relationship. Consequently, the findings indicate that selecting appropriate variables and moderators can lead to the desired EP.

Future research should focus on investigating success factors, beginning with employee competencies and attitudes, to determine the tools, techniques, and applications that employers should implement to drive EP (Mićić *et al.*, 2022). However, our findings suggest that under pandemic pressure, organizations can overcome the disadvantages by using not only new practices, measurements, and technology, but also MODs to make them all work smoothly. Consequently, our findings show that awareness of staff diversity could improve the MS→DW→EP model. We showed that organizational diversity (e.g. teamwork vs individual work) influenced the model more than primary and secondary diversity (i.e. education and gender).

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