Journal of Strategy and Management

The workplace of the future: the COVID-19 pandemic and working from home in Swiss small businesses

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Received 22 September 2023
Revised 2 February 2024
Accepted 10 February 2024

Abstract

Purpose – Micro and small enterprises (MSE) play a critical role in the Swiss economy but had no meaningfully adopted working from home (WFH) policy before the COVID-19 crisis. The timing of the study's data collection allowed a unique assessment of Swiss MSEs' adoption of WFH enabled by the adoption of digital technologies due to the first government-mandated COVID-19 lockdown. The study also set out to assess the permanence of any changes in the adoption of WFH by MSEs after initial government COVID-19 restrictions ended.

Design/methodology/approach – The study uses a threefold theoretical framework combining social, technical and spatial dimensions. Data were collected via telephone interviews. The utilised sampling frame included 153,000 small businesses with 4–49 employees, and the realised sample for the study was 503 interviews with MSE owners and managing directors (MDs).

Findings – The Swiss government's COVID-19 crisis lockdown policies accelerated the digital transformation of work by employees in Swiss MSEs by increasing the number of employees WFH. However, the number of MSEs with WFH employees decreased after the first lockdown ended. Small business leadership is an important influence on the persistence of any increases in WFH.

Originality/value – The data collection uniquely captures the effects of externally driven digital transformation of work in small businesses by the adoption of WFH. The findings show that small businesses can rapidly learn new ways of working and support the claim that Swiss MSE MDs play a critical role in the adoption of WFH. They also confirm the importance of digital leadership and culture for realising the potential of WFH in small businesses.

Keywords COVID-19, Digital transformation, Working from home, Digital leadership and culture, Workplace transformation

Paper type Research paper

Funding: This work was supported by Die Mobiliar; digitalswitzerland; and the Swiss Academy of Technical Sciences SATW.

Journal of Strategy and Management
Emerald Publishing Limited
1755-425X
DOI 10.1108/JSMA-09-2023-0248

Introduction

Digital transformation (DT) (Vial, 2019) is a major enabler of working from home (WFH) (Messenger, 2019), and the DT of work has been accelerated by the COVID-19 pandemic (Caligiuri *et al.*, 2020; Hahm *et al.*, 2022; Magrizos *et al.*, 2022; Nagel, 2020; Narayanan *et al.*, 2021). The evolution of telework in Europe, which includes WFH, was influenced by developments in society and technology and advanced by globalisation, digitalisation and automation (López-Igual and Rodríguez-Modroño, 2020). The influence of digital technologies on how people communicate and collaborate in organisations is critical to these developments (Georgiadou and Antonacopoulou, 2021; Riemke-Gurzki, 2017). The impact of the COVID-19 pandemic on how people work using technology has also received significant attention (e.g. Caligiuri *et al.*, 2020; Daraba *et al.*, 2021; McDonnell and Beck, 2021; Nagel, 2020; Sun *et al.*, 2023), not least because of its perceived acceleration of trends like DT and WFH.

WFH, supported by information and communication technology (ICT), particularly during the COVID-19 pandemic, was shown to be beneficial for job satisfaction, which positively impacted firm performance (Nagel, 2020; Roumpi, 2021). This study contributes to this work by exploring the impact of the COVID-19 pandemic on WFH and the related DT of work in Swiss micro and small enterprises (MSEs), firms with 4–49 employees, by asking the following research question:

RQ. How did the COVID-19 pandemic affect the adoption of working from home in Swiss micro and small enterprises?

The first Swiss lockdown in 2020 restricted large parts of the economy, and the Swiss government prescribed WFH to reduce COVID-19 infections. To date, the impact of the COVID-19 pandemic on the DT of work has been investigated insignificantly in MSEs. These businesses, however, deserve a particular focus, as micro businesses (with less than 10 employees) and small businesses (with 10–49 employees) worldwide represent 50% of GDP, provide an average of 60–70% of total employment, and make up 90% of all companies (BfS, 2023). In Switzerland in 2018, micro (89.7%) and small (8.7%) businesses represented 581,810 companies with 1,211,980 employees, which equals 98.2% of all businesses and 47.1% of all employees in the country (BfS, 2023).

The Swiss government adopted the "Digital Switzerland" strategy as early as 2016 (Der Bundesrat, 2016), suggesting an awareness of the importance of DT that is at least a decade in the making. Furthermore, Switzerland's high ranking for the capacity and readiness of its economy to adopt digital technologies (IMD, 2020), the highly competitive nature of the economy (IMD, 2021), as well as its innovative and resilient nature, with one of the highest skilled workforce globally (WIPO, 2021), make it a unique context for studying large-scale transformation processes associated with the DT of small businesses (Kraft *et al.*, 2022). Under these very favourable conditions, the limited progress with the adoption of WFH and related DT (Kraft *et al.*, 2022) in MSEs in general, but especially because of the COVID-19 crisis, is a conundrum.

This article frames the changes in terms of the degree of WFH in Swiss MSEs regarding their ability to unlearn accepted success and failure beliefs, which is critical during periods of change (Martignoni and Keil, 2021). Such unlearning can, however, be challenging for managers (Macdonald, 1995; Martignoni and Keil, 2021). Critically, given that MSEs typically have small numbers of senior managers who determine organisational responses, accepting new information and a potential lack of control over new external resources necessary for change can be difficult for senior managers (Macdonald, 1995; Nowak, 2023). Learning by MDs has been recognised as critical in small businesses (Florén, 2003; Fuller-Love, 2006), and this is especially the case for unlearning in MSEs in response to an external crisis like the COVID-19 pandemic.

The research question is answered by analysing data collected in a survey of business owners or executives, hereinafter referred to as managing directors (MDs), across multiple industries and representing MSEs that vary in their degree of DT.

Literature review

Working from home: technology enabled remote work

Working from home is a form of telework. Telework has steadily increased since the 1970s (Nilles, 1975) and can be defined as "all types of work-related activities away from the employer's premises that are supported by ICT" (Messenger, 2019, p. 4). Working from home involves flexible, temporary remote work at a specific location, the home, with no switching between remote locations, but the office remains the primary work location (Schäfer *et al.*, 2023). When the home location becomes the primary location for work, but work is temporally and geographically flexible, it is referred to as "working in the home office" (WIHO) (Schäfer *et al.*, 2023). WFH or WIHO can be described as New Work when it additionally is featured by control over work content and access to organisational knowledge (Schäfer *et al.*, 2023). These ways of working are associated with advantages, such as less pressure on transportation infrastructure, and disadvantages, such as compromised work-life balance, which have been discussed extensively (Bolman and Deal, 2013; López-Igual and Rodríguez-Modroño, 2020; McDonnell and Beck, 2021; Ollo-López *et al.*, 2020). These important issues are, however, not the focus of this paper, which instead examines changing degrees of WFH over three periods – before, during and after the first Swiss COVID-19 lockdown.

WFH supported by digital transformation

The adoption of new ways of working, including WFH, is a central interest of research on DT when understood as studying more than the development of digital technology in the workplace (Ismail *et al.*, 2017; Vial, 2019). DT is a strategic initiative that transforms organisations, and how work is done (Panteli *et al.*, 2019; Schallmo and Williams, 2018; Selimović *et al.*, 2021) and formulating and implementing DT strategies have become a key issue for organisations (Caputo *et al.*, 2021; Chanias *et al.*, 2019). The impacts of DT on organisations have been conceptualised as highly interconnected "building blocks" influencing employee roles, leadership and organisational culture (Riemke-Gurzki, 2017; Schallmo and Williams, 2018; Vial, 2019). Digital workplaces enable digital collaboration between employees and connection with management independent of time and place (Konuk *et al.*, 2023; Korczynski, 2023; Lass and Wooden, 2023; Soroui, 2021). Wendt *et al.* (2022), in their study of the adoption of ICT in the event industry in response to COVD-19, showed that introducing readily available ICT solutions can quickly address physical distance (e.g. social distancing and WFH). This development increases transparency, productivity and innovation, and enhances corporate operational efficiency and management ability (Colbert *et al.*, 2016; Cortes and Herrmann, 2020; Georgiadou and Antonacopoulou, 2021; Peter *et al.*, 2020), as well as allowing firms to effectively respond to crises (Wendt *et al.*, 2022).

DT enabled WFH accelerated by COVID-19

ICT has historically been the decisive factor in the further development of telework and this has only been accelerated in the digital age and after the COVID-19 crisis (Heidt *et al.*, 2023; Schäfer *et al.*, 2023). The COVID-19 pandemic represents a unique global external health crisis that accelerated DT (Wendt *et al.*, 2022) and WFH by firms as a result of government lockdown policies (Caligiuri *et al.*, 2020; Daraba *et al.*, 2021; Kraus *et al.*, 2020, 2023; McDonnell and Beck, 2021; Nagel, 2020; Sun *et al.*, 2023). These responses to the COVID-19 pandemic led to the immediate temporary relocation of the workplace from the employer's premises to the

home office in many countries. Kraft *et al.* (2022) report the divergent readiness of Swiss firms for this rapid adoption of WFH with respect to engagement with DT. However, the active discourse in society about DT in the years preceding the COVID-19 crisis undoubtedly contributed to the broadly successful adoption of WFH during government-imposed lockdowns.

A survey-based study (Nagel, 2020) among 554 employees residing in the USA and the UK, Germany, France, Italy and Spain during the first wave of COVID-19 from March to April 2020 led to two main findings. First, respondents who exclusively engaged in WFH during the COVID-19 pandemic were shown to have greater job satisfaction than people who continued to work from their employer's premises. Second, due to their experience with the COVID-19 pandemic, employees believe that the DT of work will spread faster. These are significant findings as job satisfaction is related to organisational performance, and satisfied employees achieve higher quality results, stay continuously productive, achieve high customer satisfaction and stay with their company (Chatrakul Na Ayudhya *et al.*, 2019; Heidt *et al.*, 2023; Mardanov, 2020).

Organisations as socio-technical systems

The DT of work has been conceptualised variously (Hackl *et al.*, 2017; Messenger, 2019), but generally adopts a model of organisations as socio-technical systems (Fox *et al.*, 2020; Rogala and Bialowas, 2016; Shockley-Zalabak, 2014; Wuersch *et al.*, 2023). Organisations are argued to consist of interrelated components: the technical elements of "structure" (e.g. hierarchy) and "technology" (e.g. communication channels), and the social elements of "tasks" (e.g. goals) and "people" (e.g. employees). Introducing digital tools ("technology"), for example, may require training for employees ("people"), and well-trained employees may be capable of better achieving organisational goals ("tasks") with the tools available to them (technology). To reflect the DT of work and WFH, this study additionally includes a spatial component, "location" (Messenger, 2019) or "place" (Hackl *et al.*, 2017; Kraft and Peter, 2019).

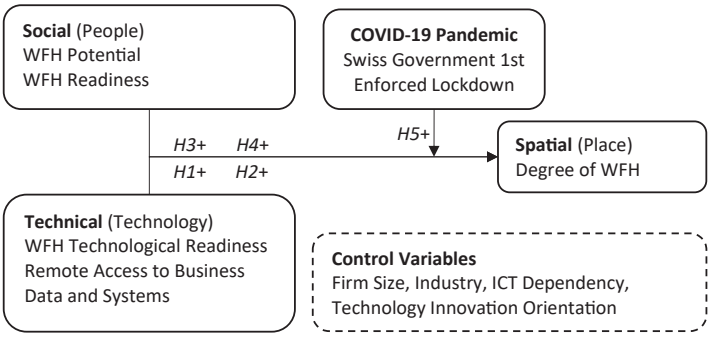
Change, learning and the individual small business MD

Generally, most managers and employees prefer to avoid change, as change brings disruption and uncertainty and requires additional resources to be committed to the change process (Dent and Goldberg, 1999; Macdonald, 1995). The ability to unlearn accepted success and failure beliefs is, however, critical during periods of change (Martignoni and Keil, 2021). It can be useful to think of a change process as an information process, with new information being a valuable resource for the firm, necessary to enable the learning required for change to occur (Macdonald, 1995; McDonnell and Beck, 2021).

If managers have "difficulty accepting that external information is needed for change, they have much more difficulty accepting that a resource so vital to the firm's operations lies beyond their control" (Macdonald, 1995, p. 561). The notion of learning in small businesses follows a well-established research agenda, with a central role for the MD (e.g. Florén, 2003; Fuller-Love, 2006; Hazy, 2006; Jones *et al.*, 2010). Therefore, it is critical that individual managers and employees continuously learn and become agents for change (Dent and Goldberg, 1999; Macdonald, 1995; Roumpi, 2021). This has also been argued more specifically for the DT of businesses (Caputo *et al.*, 2021; Peter *et al.*, 2020).

Enabling WFH: technical, social and spatial dimensions

This study adopts a framework integrating technical, social and spatial elements (Figure 1). The combined framework recognises the interplay of functional and meaning-centred organisational elements (Rogala and Bialowas, 2016; Shockley-Zalabak, 2014; Wuersch *et al.*,



Source(s): Adapted from Hackl *et al.* (2017), Kraft and Peter (2019), Rogala and Bialowas (2016), Shockley-Zalabak (2014), and Wuersch *et al.* (2023), Authors' own creation/work

Figure 1.
Conceptual model for working from home (WFH) during COVID-19 crisis

2023), and reflects a socio-technical organisational system view of DT as involving technology, people and place (Hackl *et al.*, 2017; Kraft and Peter, 2019).

The dynamics between technical and social elements stimulate learning processes (Wuersch, 2020) and can be extended to the spatial dimensions of WFH. This study formulates five hypotheses integrating the technical, social and spatial dimensions and their relationships to WFH. First, regarding the technical elements, new tools support networking activities and collaborations (Kraft *et al.*, 2022). The willingness to integrate new technologies into everyday work and to acquire digital skills will be decisive to survive in an increasingly digital work environment (Fligstein and McAdam, 2011; Kraft *et al.*, 2022; Senge, 2006). "Technology" also refers to the availability of ICT hardware and software that supports flexible work in terms of time and location (Hamblin, 1995; Jooss *et al.*, 2021; Khan, 2015). Additionally, "technology readiness" embraces the attitude of users towards technology as a key factor for them to adopt new services and products (Song, 2021). Hypothesis 1 thus addresses the technological readiness of WFH equipment and the attitudinal readiness of employees towards digital technology:

H1. Greater degrees of technological readiness are positively associated with the degree to which WFH will be practised.

Furthermore, remote access to organisational data has been found to promote work in home office settings (Ng *et al.*, 2022). Thus, "technological readiness" in terms of WFH presupposes an Internet connection as a minimum requirement (Hu, 2020) and the availability of devices, such as mobile phones, notebooks, laptops or computers, to connect to company systems (Kurkland and Bailey, 1999). Consequently, firms with employees who are technologically equipped to WFH and have full access to internal data are likely to practice WFH. This leads to the second hypothesis:

H2. Greater degrees of remote access to business data and systems are positively associated with the degree to which WFH will be practised.

Social elements are crucial when WFH and both individual and organisational experiences with WFH may influence how working remotely is perceived. Voluntary measures to stem COVID-19 challenges and government-imposed restrictions led companies to increasingly relocate work to home offices (Nagel, 2020). Consequently, the number of people experiencing WFH has significantly increased due to the pandemic (Caligiuri *et al.*, 2020; Jooss *et al.*, 2021;

Magrizos *et al.*, 2022; Spurk and Straub, 2020). WFH allowed employees who would normally not have been exposed to digital technologies to integrate digital technologies into their daily work and organise working hours more flexibly. At the same time, employees became more autonomous when WFH, since their superiors and other employees were not present in the home office. Increased autonomy, in turn, aligns with augmented job satisfaction (Naqvi *et al.*, 2013). Hence, this leads to the third hypothesis:

H3. Higher numbers of employees who could potentially engage in WFH are positively associated with the degree to which WFH will be practised.

Organisations' readiness for WFH involves digital skills (Borkovich and Skovira, 2020). It is not only easier for employees to use digital technologies for WFH if they are digitally literate (Kohnke, 2017), it also reduces risks to the organisation; for instance, from cyberattacks (Georgiadou and Antonacopoulou, 2021; Miller and Griffy-Brown, 2018). Therefore, managers and employees need social competencies for successful collaboration in the digital age, particularly during a pandemic. Digital socialisation of employees, in turn, is related to digital leadership in an organisation (Chanias *et al.*, 2019). Digital leaders have a mindset of continuous learning, which is a crucial component of DT in organisations, including the ability to test innovative ideas and to be flexible and collaborative (e.g. Gutiérrez-Crocco *et al.*, 2023; Jooss *et al.*, 2021; Kovaitė *et al.*, 2020; Solberg *et al.*, 2020). Digital leadership involves leaders who are continuously looking for learning opportunities and are open to new technologies and innovative work approaches (Daraba *et al.*, 2021; Konuk *et al.*, 2023). Digital training throughout the organisation can foster a common understanding of digital technology and WFH (Fox *et al.*, 2020; Guy, 2019; Hahm *et al.*, 2022; Wuersch *et al.*, 2024), but this requires an adaptive and entrepreneurial management style (Bal and Izak, 2020; Chaston, 1997; Slevin and Covin, 1990). Thus, organisational readiness for WFH is shaped by digital skills, agile leadership and evolved corporate culture. Therefore, the fourth hypothesis suggests:

H4. Higher degrees of organisational readiness for WFH are positively associated with the degree to which WFH will be practised.

Finally, the spatial dimension brings the technical and social elements together. Technological readiness and remote access to organisational data are assumed to promote WFH; however, digital skills supported by digital leadership and culture, and flexible organisational structures are needed to enable employees to WFH (Jooss *et al.*, 2021; Ng *et al.*, 2022; Peter *et al.*, 2020). In the digital age, work location and working hours are becoming increasingly flexible; features of the workplace of the future using ICT (Dabić *et al.*, 2023; Kolade and Owoseni, 2022).

The COVID-19 pandemic has radically increased the number of employees WFH. In this dynamic context of the DT of work, organisational leaders must ensure that their organisations develop a digital mindset that can respond to "disruptions associated with the use of digital technologies" (Vial, 2019, p. 129), having to "unlearn" previous convictions to acquire new ways of thinking and doing (Martignoni and Keil, 2021). Such beliefs can be based on implicit theories reflecting "people's basic assumptions about themselves and their world" (Dweck, 1996, p. 96) or on explicit theories based on hypothesis and testing (Boivie *et al.*, 2021) as "real-world experience". The first COVID-19 lockdown in 2020 has augmented the awareness of WFH as a viable option for the future of work (Brakman *et al.*, 2020; Nagel, 2020). Thus, the MD's estimation of how many employees theoretically could work remotely may change with the increased necessity of WFH due to COVID-19. Due to a shift in basic beliefs or based on "real-world experience", such a change of mind is promising, particularly for MSEs that have not previously supported WFH. Consequently, hypothesis 5 proposes:

H5. The increased experience of WFH due to the COVID-19 crisis is positively associated with WFH in Swiss MSEs.

To test the five hypotheses, the methodological approach selected in this research project is a cross-sectional survey design.

Research methodology

Data for the research project were collected using the well-established approach of a computer-assisted telephone interviewing (CATI) survey (Kim and Couper, 2020; Peter *et al.*, 2023). The total population was 153,000 Swiss MSEs with 4–49 employees (BfS, 2019). The realised sample for the study was 503 completed interviews with MSE MDs across the German, French and Italian-speaking parts of Switzerland, with the proportional samples matching the actual distribution of Swiss MSEs (actual distribution/proportional sample/sample size) for businesses with 4–9 employees (66%/66%/$n = 330$), 10–19 employees (22%/22%/$n = 110$) and 20–49 employees (12%/12%/$n = 63$). The CATI research team contacted 14,736 businesses, received 6,457 rejections, encountered 3,658 no-answers, 1,522 answering machines and 2,596 other reasons for non-participation (e.g. out-of-business, language barriers). The business addresses used were sourced from a reputable, independent Swiss data vendor based on pre-defined criteria (business sizes, regions, industries) of the focal firms with 4–49 employees. The response/completion rate of the sample is 3.4%.

A survey of thirteen questions was designed that allowed the collection of information about MDs from Swiss MSEs to analyse patterns regarding the changeover to WFH during and after the first COVID-19 lockdown from March to June 2020. The survey was conducted between August and October 2020. It consisted of two sections: the first section comprised four demographic questions, which permitted allocating businesses to different categories, e.g. company size and industry. One of these questions was to confirm the participants' position in the organisation as either the MD or deputy MD. The second section comprised questions about the use of WFH in Swiss MSEs. A second survey about cybersecurity was completed at the same time; however, the data was excluded from this study.

A zero-inflated negative binomial (ZINB) analysis was completed for the study using *R*, a widely adopted open-source statistical software. The method was selected as the count data in the study shows high degrees of dispersion and excessive zero values, which is a common challenge that can be addressed with a ZINB analysis of the count data (Hilbe, 2014). ZINB analysis is a mixture model, with a negative binomial regression analysis used to analyse the count data (number of employees WFH) and a logistic regression used to analyse a binary zero or not zero variable (the likelihood that a firm will have no employees WFH) (Hilbe, 2014).

The number of employees in the data, not WFH (recorded as zero values), is high (46, 19, and 36% pre, during and post the first COVID-19 lockdown, respectively). As in all ZINB analyses, this raises a question about the number of respondents who have no employees WFH (zero) who could utilise WFH (true zero), and how many who are not able to engage in WFH and are reporting no employees WFH (excess zeros in sample) (Hilbe, 2014).

The analysis was completed using *R* in RStudio (2023). Several different *R* packages were used in the analysis, including "psych", "dplyr", "recipes", "caret" and "pscl". The psych package was employed to describe the dataset and run the correlation analysis. The package recipes and caret were also utilised in the correlation analysis to integrate numeric and factor variables. The ZINB analysis was completed using the package pscl.

The focal outcome of this study is the number of Swiss MSE employees WFH during and after the first COVID-19 lockdown in Switzerland. Three dependent variables (DV) measure these outcomes, the number of employees WFH before, during and after the first COVID-19 lockdown.

The social dimension of WFH is conceptualised in terms of the number of employees with the potential to WFH (WFH Potential Emp.) and WFH readiness, the degree to which the MSE is prepared for integrating WFH, measured by an assessment of pre-COVID-19 readiness (WFH MSE Readiness). The technical dimension of WFH is conceptualised in terms of the WFH technological readiness. As WFH requires ICT infrastructure and access to ICT for employees, the greater this is the case, the higher the degree to which WFH can be expected (WFH IT Ready Emp.). In addition, the degree to which WFH is undertaken has been clearly linked to the degree to which employees have remote access to the firm's systems and information (Emp. Remote Access) and was thus used to analyse the technical dimension regarding WFH. The spatial aspect of the conceptual model is captured in the dependent variable, namely the degree to which employees were WFH in each of the three periods.

Control variables included the number of employees, representing an indicator for resource availability and likelihood of greater diversity in roles, therefore with a higher potential for roles that might be suited for WFH (Number of Employees); industry, as some industries will be more suited to WFH compared to others (Industry); the degree to which the MSE is generally dependent on ICT, indicating experience and utilisation of ICT as an important indicator of potential experience and competencies that could support WFH (IT Continuity Importance); technology competence and readiness as the rate at which new technologies are adopted more generally (Technology Adoption Speed); and general technology competence and readiness as the degree to which the MSE adopts new technologies (Technology Adoption Significance).

Results

The dataset for the study includes 12 variables (see Table 1), nine of which are numeric, including three variables using Likert scales and three that are categorical. The number of responses (*n*) per variable ranges from 327 to all 503 participants in the sample. On average, the firms in the sample had about one employee WFH before the first COVID-19 lockdown.

	Variables	*n*	Mean	SD	Var.	Var/mean	min	max
Numeric variables								
1	Employees WFH Pre-Lockdown	331	0.915	2.496	6.230	6.809	0	25
2	Employees WFH in Lockdown	331	4.148	6.178	38.168	9.201	0	43
3	Employees WFH Post-Lockdown	328	1.567	3.308	10.943	6.983	0	30
4	Number of Employees	503	10.740	8.681	75.360	7.017	4	49
5	IT Continuity Importance	503	4.555	0.900	0.810	0.178	1	6
6	Tech. Adoption Sig	496	3.718	1.120	1.254	0.337	1	5
7	WFH Potential Employees	500	3.776	6.018	36.216	9.591	0	43
8	WFH IT Ready Employees	493	3.807	5.845	34.164	8.974	0	43
9	MSE WFH Readiness	327	3.599	1.559	2.430	0.675	1	5

Categorical variables							
			Level 1	Level 2	Level 3	Mean	SD
10	Industry Sector[1]	503	15	129	359	2.684	0.526
11	Speed of Tech. Adoption[2]	483	164	222	97	1.861	0.723
12	Remote Access to Data[3]	330	52	109	169	2.355	0.739

Note(s): [1]Level 1 to 3 refers to primary, secondary, and tertiary industry sectors
[2]Level 1 to 3 refers to late adopters, (quick) followers and early adopters of new technology
[3]Level 1 to 3 refers to employees having limited, medium or high levels of access to data away from the office
Source(s): Authors' own creation/work

Table 1.
Descriptive statistics

This number increased to an average of about four during, and 1.5 employees after the first lockdown. The largest number of employees WFH before the lockdown was 25; this increased to 43 during the crisis and remained slightly higher than before the lockdown at 30 employees after the first lockdown. Most respondents came from the tertiary sector of the economy and, on average, worked at an MSE with 10–11 employees, with an average potential for WFH of three to four people (one-third of the total workforce).

The correlation coefficients tend to be quite strong and show a high frequency of significance, which suggests a complex set of associations across the variables (see Table 2). The number of employees WFH before, during and after the first Swiss COVID-19 lockdown are significantly and highly correlated, but lockdown and post lockdown WFH variables have a stronger association.

The association between the number of employees and the number of employees WFH is strongest during the lockdown, but the post lockdown number is also higher than pre-COVID-19. The primary and secondary sectors are negatively associated with WFH before, during and after the lockdown. The firms in the primary sector return to the pre-lockdown strength of relationship after the lockdown, with lower significance than for the secondary and tertiary sectors, which see opposite changes in association with WFH during and after the lockdown. The relationship for the importance of ICT continuity reflects the strength and significance of the number of employees before, during and after the lockdown. The importance of adopting the latest technology shows a strengthening of the relationship comparing before and after the lockdown, but the pattern is less clear for the speed of technology adoption. Respondents report a clear increase in the strength of the relationship between the number of employees who could WFH and the number of employees doing so. The relationship between the MSE's readiness for WFH and the number of employees WFH remains unchanged. The ICT readiness of employees clearly shows a strengthening of association with WFH that is significant over the three periods. Interestingly, only the lowest and highest levels of remote access to data are significant, with expected associations with WFH.

The results of the ZINB analysis are presented in Table 3, using three temporal brackets corresponding to the three dependent variables for the number of people WFH pre, during and post the first COVID-19 lockdown, respectively. For each period, a model including only control variables (base) and a model (full) including the control variables, social and technical predictors, was completed. Each model has two analyses – the negative binomial analysis, predicting the number of people WFH, and the logistic analysis, providing the log odds for excess zeros in the data. The results of the negative binomial (NB) and the ZINB analysis show clear patterns of change across the three temporal brackets for both the variables predicting the number of employees WFH and those predicting the log odds of an excessive zero count.

Pre-COVID-19 lockdown findings

The pre-COVID-19 lockdown number of employees WFH in the base model 1nb is significantly predicted by the number of employees (0.052 **), but most strongly by the respondents' firm being in the tertiary sector (2.815 **). The addition of the social and technical dimensions in the pre-lockdown models further increases the predictive strength of secondary (2.338 *) and tertiary (2.901 **) sector membership in model 2nb.

In this full model, the number of employees is not significantly related to the number of employees WFH and instead, the importance of ICT continuity emerges as a negative predictor of the number of employees WFH (−0.307 *). WFH potential (0.126 **) is a positive and significant social predictor of WFH, while the remote access to firm data (linear) is shown

Table 2. Pearson correlation analysis

	Variables	1	2	3	4	5	6	7	8	9
1	Emp. WFH Pre-Lockdown	1								
2	Emp. WFH in Lockdown	0.847***	1							
3	Emp. WFH Post Lockdown	0.950***	0.926***	1						
4	Number of Employees	0.486**	0.675***	0.590**	1					
5	IT Continuity Importance	0.470**	0.690***	0.571**	0.707***	1				
6	Technology Adoption Sig	0.401*	0.602***	0.478**	0.486**	0.841***	1			
7	WFH Potential of Employees	0.695***	0.942***	0.810***	0.768***	0.835***	0.697***	1		
8	WFH IT Ready of Employees	0.742***	0.969***	0.856***	0.741***	0.796***	0.662***	0.990***	1	
9	MSE WFH Readiness	0.884***	0.837***	0.858***	0.458*	0.517**	0.575**	0.705***	0.725***	1
10	Industry Sector – Primary	−0.441*	−0.529**	−0.465*	−0.313	−0.734***	−0.598***	−0.591***	−0.593***	−0.362
11	Industry Sector – Secondary	−0.571**	−0.806***	−0.711***	−0.563**	−0.765***	−0.591***	−0.851***	−0.839***	−0.647***
12	Industry Sector – Tertiary	0.682***	0.860***	0.781***	0.575**	0.847***	0.695***	0.893***	0.889***	0.690***
13	Speed Tech. Adoption – Late	−0.397	−0.529**	−0.404*	−0.568**	−0.686***	−0.827***	−0.604***	−0.562**	−0.560**
14	Speed Tech. Adoption – Follow	0.492**	0.703***	0.593***	0.860***	0.695***	0.408*	0.789***	0.771***	0.437*
15	Speed Tech. Adoption – Early	0.267	0.333	0.247	0.091	0.476**	0.775***	0.329	0.317	0.542**
16	Remote Access to Data – Low	−0.540**	−0.734***	−0.612***	−0.635***	−0.692***	−0.649***	−0.748***	−0.719***	−0.748***
17	Remote Access to Data – Med	−0.292	0.040	−0.131	0.324	0.212	−0.044	0.197	0.164	−0.288
18	Remote Access to Data – High	0.783***	0.759***	0.742***	0.465*	0.633***	0.717***	0.692***	0.688***	0.920***

	Variables	10	11	12	13	14	15	16	17	18
10	Industry – Primary	1								
11	Industry – Secondary	–	1							
12	Industry – Tertiary	–	–	1						
13	Speed Tech. Adoption – Late	0.292	0.505**	−0.529**	1					
14	Speed Tech. Adoption – Follow	−0.335	−0.738***	0.699***	–	1				
15	Speed Tech. Adoption – Early	−0.426*	−0.265	0.333	–	–	1			
16	Remote Access to Data – Low	0.426*	0.721***	−0.781***	0.548**	−0.591***	−0.461*	1		
17	Remote Access to Data – Med	−0.024	−0.337	0.148	−0.096	0.507**	−0.414*	–	1	
18	Remote Access to Data – High	−0.455*	−0.552**	0.657***	−0.604***	0.333	0.725***	–	–	1

Note(s): Significance: $p \leq$ ***0.01, $p \leq$ **0.05, $p \leq$ *0.10. Analysis conducted using *R* psych package function corr.test (as it would be inappropriate to evaluate the correlation between dummy variables for each of the three categorical variables, these (1) have been removed)

Source(s): Authors' own creation/work

Table 3. Full/complex zero inflation negative binomial (ZINB) analysis results

	First Swiss COVID lockdown and number of employees working from home (WFH)											
	Pre-COVID lockdown				During COVID lockdown				Post COVID lockdown			
	Base (log link)		Full (logit link)		Base (log link)		Full (logit link)		Base (log link)		Full (logit link)	
Variables	Neg Bin Model 1nb	ZINB Model 1zi	Neg Bin Model 2nb	ZINB Model 2zi	Neg Bin Model 3nb	ZINB Model 3zi	Neg Bin Model 4nb	ZINB Model 4zi	Neg Bin Model 5nb	ZINB Model 5zi	Neg Bin Model 6nb	ZINB Model 6zi
Intercept	−1.989	−4.808	−1.148	−1.315	−1.338 **	−10.634	−0.136	17.326	−1.017	−54.321	−0.985	1.285
	(1.389)	(13.505)	(1.424)	(4.381)	(0.523)	(243.225)	(0.456)	(217.731)	(1.153)	(418.561)	(0.961)	(2.901)
Secondary industry sectors	1.659	0.728	2.338 *	2.039	0.017	8.469	0.039	−7.094	−1.722	−36.986	0.662	1.273
	(1.314)	(13.907)	(1.277)	(4.448)	(0.417)	(243.222)	(0.335)	(217.636)	(1.126)	(251.220)	(0.682)	(2.737)
Tertiary industry sectors	2.815 **	2.812	2.901 **	3.604	1.317 ***	8.469	0.445	−1.834	−0.855	−36.708	0.832	1.793
	(1.313)	(13.722)	(1.242)	(4.376)	(0.386)	(243.221)	(0.324)	(217.621)	(1.112)	(251.189)	(0.644)	(2.718)
Number of employees	0.052 **	0.074	−0.001	0.100 *	0.057 ***	−0.000	−0.018 ***	0.064	0.055 ***	0.119 **	−0.018	0.070 *
	(0.018)	(0.047)	(0.021)	(0.053)	(0.006)	(0.021)	(0.006)	(0.206)	(0.012)	(0.059)	(0.014)	(0.042)
IT continuity importance	−0.214	−[1]	−0.307 *	−0.400	0.101	0.057	0.065	0.591	0.293 **	15.284	0.111	−0.306
	(0.169)		(0.164)	(0.427)	(0.082)	(0.313)	(0.062)	(0.818)	(0.146)	(125.556)	(0.137)	(0.423)
Speed of technology adoption (linear)	0.349	0.386	0.379	1.563 **	0.074	−0.941 *	−0.069	−[1]	0.219	−0.259	0.119	1.513 **
	(0.351)	(0.719)	(0.299)	(0.730)	(0.132)	(0.524)	(0.089)		(0.241)	(1.028)	(0.204)	(0.703)
Speed of technology adoption (quadratic)	0.232	1.730	0.331	0.629	−0.061	0.266	0.065	−[1]	0.039	11.270	0.137	0.170
	(0.262)	(1.168)	(0.209)	(0.711)	(0.092)	(0.381)	(0.062)		(0.176)	(102.490)	(0.150)	(0.601)
Technology adoption significance	−0.011	−[1]	0.114	1.167 **	0.135 *	0.061	0.055	−[1]	0.122	1.537	0.010	0.663 *
	(0.150)		(0.144)	(0.481)	(0.069)	(0.254)	(0.046)		(0.117)	(1.283)	(0.101)	(0.357)
Social WFH Potential Emp			0.126 **	0.163			0.069 ***	0.947			0.056	−[1]
			(0.053)	(0.128)			(0.012)	(0.752)			(0.037)	
MSE WFH Readiness Pre-COVID			−0.153	−1.552 ***			−0.008	−10.862 **			−0.041	−1.485 ***
			(0.166)	(0.428)			(0.049)	(4.802)			(0.120)	(0.393)

(*continued*)

Table 3.

		First Swiss COVID lockdown and number of employees working from home (WFH)											
		Pre-COVID lockdown				During COVID lockdown				Post COVID lockdown			
		Base (log link)		Full (logit link)		Base (log link)		Full (logit link)		Base (log link)		Full (logit link)	
Variables		Neg Bin Model 1nb	ZINB Model 1zi	Neg Bin Model 2nb	ZINB Model 2zi	Neg Bin Model 3nb	ZINB Model 3zi	Neg Bin Model 4nb	ZINB Model 4zi	Neg Bin Model 5nb	ZINB Model 5zi	Neg Bin Model 6nb	ZINB Model 6zi
Technical	WFH ICT Readiness of Employees			−0.023 (0.053)	−0.180 (0.125)			0.041 *** (0.011)	−1.501 * (0.851)			0.052 (0.036)	−0.092 (0.065)
	Remote Access to Data (Linear)			−0.726 * (0.373)	−1.839 ** (0.900)			0.383 ** (0.150)	−2.381 (1.955)			−0.141 (0.263)	−0.526 (0.782)
	Remote Access to Data (Quadratic)			0.594 ** (0.288)	−0.108 (0.701)			−0.156 (0.101)	−2.233 (1.755)			0.474 ** (0.190)	−0.294 (0.642)
Log(theta)		−1.001*** (0.294)		0.017 (0.339)		0.871 *** (0.202)		2.408 *** (0.263)		−0.555 *** (0.162)		0.553 ** (0.264)	
Theta		0.3676		1.0173		2.3902		11.1156		0.5738		1.739	
No iterations BFGS Opt		59		53		36		94		71		40	
Log-likelihood		−365.7 on 15 Df		−316.5 on 27 Df		−727.2 on 17 Df		−538.1 on 24 Df		−489.7 on 17 Df		−422.6 on 26 Df	

Note(s): Significance: $p \leq$ ***0.01, $p \leq$ **0.05, $p \leq$ *0.10 (1 variable removed from zero-inflated model due to modelling challenges)
Source(s): Authors' own creation/work

to be negatively related (−0.726 *) to WFH, but when modelled as a quadratic function, it is a positive technical predictor (0.594 **) of the number of employees WFH.

The pre-lockdown ZINB base model 1zi analysis does not include any variables that significantly predict the (log) odds of a response of zero. Additionally, it was necessary to omit the variables for ICT continuity and the significance of technology adoption to allow the analysis. The full model 2zi for the pre-lockdown period shows the (log) odds of a response of zero increasing with each additional employee (by 0.100 *), the speed of technology adoption (linear) (1.563 **), and the significance of technology adoption (1.167 **). Interestingly, the social dimension readiness for WFH pre-COVID-19 (−1.552 ***) and the technical dimension remote access to data (linear) (−1.839 **) have large and negative (log) odds. The greater the respondent firm's readiness for WFH pre-COVID-19, and the better the remote access to data, the less likely the firm will not have at least one employee WFH.

During first COVID-19 lockdown findings

The number of employees WFH during the first Swiss COVID-19 lockdown in the base model 3nb is positively and significantly predicted by respondents' membership of the tertiary sector (1.317 ***), the number of employees (0.057 ***) and significance of technology adoption (0.135 *). Interestingly, the intercept of the model is negative and significant (−1.338 **), which is normal, interpreted as meaning the expected number of employees WFH tends to zero. This is the only model in which the intercept is significant, but the coefficients of the intercepts across all NB models are negative and tend towards getting smaller during and after the lockdown, compared to before the lockdown.

In the full model 4nb for during the lockdown, the only significant control variable is the number of employees (−0.018 ***). The number of employees WFH in model 4nb is significantly and positively predicted by social dimension WFH potential (0.069 ***), technical factors WFH ICT readiness (0.041 ***) and remote access to data (linear) (0.383 **). The result for WFH potential has a smaller coefficient (0.069 ***) compared to the pre-COVID-19 lockdown period (0.126 **). WFH ICT readiness (0.041 ***), when compared to the pre-lockdown period, has changed significantly and was not previously significant. The result for remote access to data (linear) (0.383 **) also represents a change in sign from the previous period. During the lockdown, the remote access to data (quadratic) is negative, compared to significant and positive results for the pre- and post-COVID-19 lockdown models.

The during lockdown ZINB base model 3zi analysis shows a single negative and significant variable, speed of technology adoption (linear) (−0.941 *), predicting the (log) odds of no employees WFH (zero). None of the base model variables is significant in the full model 4zi, and the variable speed of technology adoption (linear and quadratic) and significance of technology adoption are excluded due to causing difficulties in running the model. The social dimension readiness for WFH pre-COVID-19 (−10.862 **) and technical dimension WFH ICT readiness (−1.501 *) show significant (log) odds of respondents having employees WFH; the negative coefficients suggest higher odds of non-zero results (employees WFH). The odds for the assessment of the pre-COVID-19 readiness for WFH being associated with at least one employee WFH are clearly much larger than in the pre- and post-COVID-19 lockdown analyses.

Post-COVID-19 lockdown findings

The post-COVID-19 lockdown number of employees WFH in the base model 5nb is significantly predicted by the variables number of employees (0.055 ***) and the importance of ICT continuity (0.293 **). The coefficient for the number of employees has been largely consistent, positive and significant for predicting the number of employees WFH in the base models pre (1nb: 0.052 **), during (3nb: 0.057 ***) and post (5nb: 0.055 ***) the first COVID-19 lockdown.

None of the control variables in the base model is significant in the full model 6nb post lockdown. Indeed, the only significant and positive variable for predicting the number of employees WFH post lockdown is the remote access of employees to data (quadratic) (0.474 **). The WFH potential and readiness pre-COVID-19, as well as ICT readiness, are no longer significant predictors of the number of employees WFH, as was the case during the lockdown.

The post lockdown ZINB base model 5zi shows that the number of employees (0.119 **) is also a significant predictor of the (log) odds that a firm will have no employees WFH. In the full model 6zi, the (log) odds of a firm not having any employees WFH (zero) is significant for the control variables number of employees (0.070 *), speed of technology adoption (linear) (1.513 **) and the significance of technology adoption (0.663 *). Again, the social dimension of WFH readiness pre-COVID-19 (−1.485 ***) increases the (log) odds that a firm will be practising WFH. This reflects the full model for pre-lockdown WFH, except that post lockdown, the unclear remote access to data (linear) is no longer present. The (log) odds for all post lockdown significant variables are lower compared to the pre-lockdown analysis in model 2zi, but the log odds for the significance of technology adoption post lockdown (0.663 *) is almost half as small as pre-lockdown (1.167 **) and has a smaller p-value.

Evaluation of hypotheses

H1. Employee technology readiness for WFH is positively associated with the degree of WFH.

The finding that greater degrees of technological readiness are positively associated with the degree of WFH during the COVID-19 lockdown period provides partial support for hypothesis 1. There is, however, no support for hypothesis 1 pre and post the COVID-19 lockdown. This suggests that perceived employee ICT readiness is not a primary driver of WFH, which is especially interesting given that the technology needed for ICT readiness of small business employees is relatively simple (e.g. Internet access, laptops and software to complete business tasks) and ubiquitous (Jooss *et al.*, 2021; Song, 2021; Sun *et al.*, 2023).

H2. Remote access to data is positively associated with the degree of WFH.

The unsurprising result that remote access to data plays a positive role in the degree of WFH supports hypothesis 2 and reflects prior work (Hu, 2020; Ng *et al.*, 2022; Soroui, 2021). Interestingly, though, the nature of the relationship pre and post lockdown (quadratic) and during the lockdown (linear) suggests that under normal conditions, greater degrees of remote access to data have a significantly different effect compared to lower degrees of remote access to data on the adoption of WFH.

H3. Potential for employees to WFH is positively associated with the degree of WFH.

Our findings for pre and during the COVID-19 lockdown confirm the expectation that higher numbers of employees that could potentially WFH are positively associated with the degree of WFH, providing partial support for hypothesis 3. Our results, however, also show that the lockdown broke this link between employee WFH potential and the number of employees WFH. This raises doubts about the degree to which the potential for employees to WFH will continue to be important for explaining the degree of WFH in Swiss MSEs in the future.

H4. Organisational readiness for WFH is positively associated with the degree of WFH.

Higher degrees of organisational readiness for WFH are negatively and non-significantly associated with the degree of WFH in MSEs. There is thus no support for hypothesis 4, contrary to expectations (Borkovich and Skovira, 2020; Georgiadou and Antonacopoulou, 2021).

The degree of organisational readiness for WFH does, however, significantly predict the adoption of at least some WFH practices, at least one employee, but this result should be treated cautiously, suggesting alternative explanations are more important for explaining the degree of WFH.

H5. Experience of WFH is positively associated with the degree of WFH.

The results also show that the number of firms with no employees WFH (zero) during and after the lockdown is lower than before the lockdown, indicating that increased experience of WFH, due to the COVID-19 crisis, is positively associated with WFH in Swiss MSEs, providing support for hypothesis 5. At the same time, many MSEs reduced WFH post lockdown, suggesting the prioritisation of other organisational goals, such as productivity objectives (e.g. Colbert *et al.*, 2016; Cortes and Herrmann, 2020; Panteli *et al.*, 2019; Schallmo and Williams, 2018) and the role of the MSE MD (Florén, 2003; Fuller-Love, 2006; Hazy, 2006; Jones *et al.*, 2010) need to be better understood.

Post-hoc exploration

Exploring additional data on MDs' attitudes towards WFH from the same survey reveals that only about 12% of Swiss MSE MDs who expect growth in WFH also personally support adopting WFH practices. This is important, as new technologies supported by digital leadership and culture are drivers of DT (e.g. Berges and Kon, 2019; Chanias *et al.*, 2019; Riemke-Gurzki, 2017; Solberg *et al.*, 2020), which enables WFH. This provides some initial evidence that the attitudes of the MSE MDs may be an important explanation for the lack of continued adoption of WFH after the lockdown ended, reflecting the attitude of Swiss smaller businesses' MDs towards an increase of WFH being related to their trust towards employees and technological advancement of their organisation, inherent in their leadership style (Berges and Kon, 2019).

Discussion

We argue that the findings of a "return to normal" temporal and geographic patterns of work in the studied MSEs support an explanation focused on the absence of digital leadership and culture in the Swiss MSEs studied. Digital leadership and culture have been identified as one of seven strategic action fields of DT (Peter *et al.*, 2020) and have been shown to play a critical role in DT processes (AlNuaimi *et al.*, 2022; Chatterjee *et al.*, 2023), building on the argument that MDs' attitudes play an important role in the adoption of WFH practices (Boivie *et al.*, 2021; Dweck, 1996; Martignoni and Keil, 2021) in the sample of Swiss MSEs.

Digital leadership and change (DLC) captures the adoption of transformational leadership for the integration of digital technologies and the establishment of an organisational culture fit for responding to disruptive change (AlNuaimi *et al.*, 2022). As such, DLC is not possible if MDs cannot unlearn accepted success and failure beliefs, which is critically important during periods of change (Martignoni and Keil, 2021). Peter *et al.* (2020) showed that in the period immediately before the COVID-19 crisis, when asked to define digital transformation, only 8.7% of Swiss firms' respondents to a survey included characteristics associated with DLC. This suggests that leaders with a digital mindset (AlNuaimi *et al.*, 2022), which would be expected to be associated with greater degrees of WFH, are still relatively rare in the Swiss MSEs studied. Alternatively, the findings of Heath *et al.* (2024) would suggest that the period of experimentation with WFH was simply too short, as "novel, disruptive, and critical events are more likely to change behaviours when they have a longer duration and when the strength increases over time" (Heath *et al.*, 2024, p. 85).

Employees' willingness and ability to adopt WFH is an important alternative explanation to the return to working in the office after the COVID-19 restrictions were lifted: research has shown that employees' preferences for WFH can be influenced by factors like gender, personality traits, emotions and Internet/digital skills (Heidt *et al.*, 2023; Sarwar *et al.*, 2023; Schäfer *et al.*, 2023), even if their work would allow it. The data analysis for this study does not allow this alternative explanation to be assessed but does draw attention to the fact that both employee and MD acceptance of WFH is necessary for its adoption, providing a further possible explanation for the observed "return to normal" in levels of WFH.

More fundamentally, the competitive advantage of MSEs that do not develop the capability to adapt effectively to changing external conditions is fundamentally threatened, as shown in the study of Dejardin *et al.* (2023) on the performance effects of SMEs' dynamic capabilities before and during the COVID-19 crisis.

Conclusion

COVID-19 affected the adoption of WFH through the temporary spatial relocation of Swiss MSE employees into home office work due to government regulations during the first lockdown. COVID-19, however, only resulted in a relatively small increase in the adoption of WFH after the government-imposed restrictions expired. The findings suggest that externally enforced unlearning of accepted success and failure beliefs, critically important during periods of change (Martignoni and Keil, 2021), were only adopted as long as external conditions required in the studied MSE for WFH. The experience of WFH by the Swiss MSEs studied does not seem to have been sufficient to convince MDs to change their success and failure beliefs about the ideal location where work can or should be done. The temporary adoption of WFH did, however, change the relationships of many factors affecting the degree of WFH, suggesting that in this sense, the experience gained did bring about some changes, although it should also be noted that there are meaningful differences across industry categories. As a result, research is needed to better understand the success and failure beliefs of MDs in Swiss MSEs and how these affect the adoption of new working practices in the digital age.

These findings complement those of Wendt *et al.*'s (2022) qualitative study of German SMEs' adoption of ICT in response to the COVID-19 crisis in the event industry. Wendt *et al.* (2022) found that MD influence played a critical role in adopting ICT and innovative approaches. SMEs with innovative cultures and MDs with an affinity for innovation and technology were at an advantage (Wendt *et al.*, 2022). Our broader sample, however, raises doubts about how widespread such innovative and technology supporting MDs are in MSEs across diverse industries.

Limitations and future research opportunities

The strength of this study also determines its limitations. First, this investigation is limited to the strategic views of MDs of MSEs in Switzerland, but previous research on telework has shown the necessity of also understanding the phenomenon from the perspective of employees (Sarwar *et al.*, 2023; Schäfer *et al.*, 2023). Second, data was collected using a CATI survey, allowing the importance of digital leadership and culture to be identified. However, interviews with MDs and MSEs' employees would ideally be used in a follow-up study to understand why this is the case. Third, while the collected data offers innovation in being the first dataset representing MSEs in Switzerland, this data must be viewed with caution when it comes to statements about larger and government enterprises. Future research should seek to establish if patterns of digital leadership and culture are similar or different across small and large, as well as business, non-profit and public organisations. Fourth, survey data was provided by an address broker, which might not cover the entire population (despite quotas being defined for

the sample), which could be addressed by replicating the study using different sampling frames. Finally, the study is limited to one country, so observations might not be able to be generalised and applied to other countries and regions. Replication of the study across countries would be valuable, as differences in MSE MD mental models have been found for other societal change processes, like the adoption of corporate social responsibility (Fassin *et al.*, 2015). Despite these limitations, the study makes a significant first step in understanding the impact of COVID-19 on the future of work and the DT of work in Swiss small businesses.

Recommendations for practice

These results can help organisations develop and implement WFH strategies, including creating successful and sustainable strategies for the DT of work (Chanias *et al.*, 2019; Mancha and Shankaranarayanan, 2020; Peter *et al.*, 2020). This covers the concepts of technology adoption strategies (e.g. Ismail *et al.*, 2017; Mancha and Shankaranarayanan, 2020; Robinson and Chiang, 2002), ICT infrastructure plans, with access to remote data (e.g. Jooss *et al.*, 2021; Kurkland and Bailey, 1999; Messenger, 2019) and the MD's attitude towards WFH (e.g. Boivie *et al.*, 2021; Dweck, 1996; Martignoni and Keil, 2021), requiring a dialogue on leadership and organisational culture (e.g. Riemke-Gurzki, 2017; Vial, 2019; Wuersch *et al.*, 2023), as well as digital strategies (AlNuaimi *et al.*, 2022) in MSEs.

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