

The Impact of Smart Working on Organization Performance

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Abstract: In the last years, several studies dealt with smart working (SW) and its evolution during the pandemic. Most of them discussed benefits, drawbacks and drivers for successful implementation. Few studies investigated the impact on organization performance. It is not clear to what extent SW, especially in the emergence phase of the Covid-19 pandemic, has impacted the organizations, both at macro- and micro- structure level, and whether it may result into increased productivity and better innovation performance. The paper aims at investigating whether and under which conditions companies that adopted SW during the Covid-19 pandemic improved their performance. To achieve such a goal, based on a literature review, we develop a theoretical framework to describe the impact of SW on organization performance. Then, we design and administer a survey to test it. In particular, a questionnaire to empirically test the framework is developed, administered, and validated. In the paper we present a preliminary analysis of the results of the survey, which offers some interesting insights for theory and practice. In particular, by analysing the impact of the implementation of this new work modality on the organization performance, the paper contributes to the research on SW. Also, by developing a valid and reliable questionnaire, we provide a useful tool to help investigate whether and to what extent SW allows for productivity increase and better innovation performance. The tools also help retrieving information about the workers' perceptions regarding the implementation of smart working in their own company.

Keywords: smart working, organization performance, survey, Covid-19 pandemic.

1. Introduction

The development and diffusion of digital technologies (especially those supporting communication, collaboration and social networking), along with the pervasive dissemination of powerful and easy-to-use mobile devices, may encourage organisations to implement Smart Working (Ahuja et al., 2007). The organizational literature proposes several definitions of Smart Working (SW), each of them focusing on different key aspects associated to this new work modality. In 2008 the Chartered Institute of Personnel and Development (CIPD) defined SW as “an approach to organizing work that aims to drive greater efficiency and effectiveness in achieving job outcomes through a combination of flexibility, autonomy and collaboration, in parallel with optimizing tools and working environments for employees”. Such a definition reveals both the objectives of SW and the ways to achieve them. According to McEwan (2016) “smart working practices are agile, dynamic and emergent. They are the outcomes of designing organizational systems that facilitate customer-focused, value-creating relationships that are good for business and good for people”. Finally, Smart Working Observatory (2018) means SW as: “thinking about work from a different, clever angle. It questions the traditional links with working times and locations and gives people a greater say in defining their working conditions, while at the same time making them more responsible for the outcome. Autonomy and flexibility, and giving people responsibility and trust are the bywords for this new approach to work”.

Besides stressing the implications of SW on flexibility (as to working spaces and times), the last definition remarks the concepts of responsibility and trust: employees are given the chance to achieve both greater professional efficiency and a better work-life balance in return for a greater responsibility and accountability on the outcomes they produce.

Covid-19 pandemic made the implementation of SW faster and widespread. A recent article from The Economist (2021) stated that “before the pandemic Americans spent 5% of their working time at home. By spring 2020 the figure was 60%”. Based on a survey administered to thousands of Americans, Barrero, Bloom, and Davis (2021) argued that, after the pandemic, an average employee would like to work from home nearly half of the working time. In Italy, for example, before the pandemic, SW was adopted (in formal and informal ways) by 58% of large-sized enterprises, 12% of small and medium-sized enterprises, and 16% of public

administrations, for a total of 570.000 workers (Smart Working Observatory, 2019). The situation has radically changed since March 2020 when, due to the Covid-19 emergency and the need to implement social distancing rules, the Government issued the decree of March 1, 2020, so de facto establishing the possibility to apply SW to any subordinate employment relationship, even in the absence of individual agreements, until the end of July 2020. In April 2020, according to the Ministry of Labour and Social Policies (2020), a total of 1,827,792 workers adopted the SW mode, 1,606,617 of them started after the epidemiological emergency. For some companies it was the implementation on a larger scale of a working model already tested and used, for others it was a first experiment.

Looking at the post-pandemic world, several studies are questioning about the future of SW and whether it will be adopted by companies as an established successful practice. Indeed, an essential part of the “new normal” after the Covid-19 pandemic will be a revision of the working methods (Bonacini, Gallo, and Scicchitano, 2021) to employ an effective combination of information technologies, computer networks, and mobile devices. Several tasks, if not certain jobs, can be accomplished in smart working. Nevertheless, the shift toward this new normal needs to be monitored. Mistakes in the design of sociotechnical systems, such as working organization, may go unseen until the consequences are measurable e.g., performance of some workers decreases. That would affect the performance of the entire organization. Assessing the impact of SW on company performance and understand under which conditions SW is positively correlated with company performance is then necessary for a successful implementation.

Several studies investigated SW implementation during the pandemic (e.g. Bonacini, Gallo, and Scicchitano, 2021; Fana et al., 2020; Ipsen et al., 2021). Most of them focused on the identification of benefits, drawbacks as well as implementation drivers. As to the latter aspect, many scholars pointed out a new paradigm shift that “is being driven by extreme changes in approaches to work, work cultures, business architectures, decision making, communications, and collaboration” (Boorsma and Mitchell, 2011, p. 2). Others referred to evolutionary changes in work and management practices that are enabled by technological advances and that foster both organizational agility and new workforce expectations (e.g., Bednar and Welch, 2019; McEwan, 2016; Zheltoukhova, 2014). Overall, what emerges from the different contributions are the key drivers for a complete and effective SW implementation. There is no doubt that a SW successful implementation requires changes in the organizational culture and individual behaviours, from both employees and employers’ side, managers and co-workers, and managerial practices, Information and Communication Technology-based solutions, and suitable workplaces (Birkinshaw, Hamel, and Mol, 2008; Elsbach and Pratt, 2007; Mann, 2012; Reyt and Wiesenfeld, 2015).

Research dealing with the impact of smart working on knowledge management practices is still scarce (Edwards, 2022). Few studies have analysed the impacts of SW on socialization and the implications for knowledge sharing (Bolisani et al., 2020; van Heck, 2010; Schallenueller, 2016; Bednar and Welch, 2019). To that regard, the results of an international survey on SW in times of Covid-19 reveals that most employees are able to keep sufficiently good and fruitful interactions, but those results are also associated to the kind of job and to the availability of appropriate communication technologies. The survey also shows that working (only or prevalently) from home could diminish the intellectual productivity of knowledge workers when it is difficult to exchange knowledge with colleagues (Bolisani et al., 2020).

Finally, only few studies investigated whether and to what extent SW impacts on company performance. Some evidence suggests that when implemented, SW not only reduces infrastructure costs but also increases the workforce’s overall productivity (Angelici and Profeta, 2020; Barrero, Bloom, and Davis, 2021; Bloom et al., 2015; Bolisani et al., 2020). However, it is not clear to what extent smart working, especially in the emergence phase, has impacted the organizations at macro- and micro- structure level and whether it may be considered as a work method to increase productivity and improve innovation performance. Understanding the impact on performance is important because SW requires companies to invest in technologies, workspaces, HR management systems, competence and training (Antogiovanni, 2020). Such investments should be offset with appropriate benefits.

In light of this main objective, the paper aims at investigating whether and under which conditions companies that adopted SW during the Covid-19 pandemic improved their performance. To achieve such a goal, based on a literature review, we develop a theoretical framework to explain the impact of SW on organization performance. The framework includes some constructs and some propositions to link them. Then, to

empirically test the theoretical framework, we design an online questionnaire survey, where each construct of the model corresponds to a set of questions; then, we administer and validate the developed questionnaire. By analysing the impact of a sudden move towards this work modality on the organization performance, the paper contributes to the research on SW. Also, by developing a valid and reliable questionnaire, we provide a useful tool that may help investigating whether and to what extent SW allows for productivity increase and better innovation performance. The tools helps retrieving information about the workers' perceptions regarding the application of SW in their own company.

The remainder of the paper is organized as follows. Section 2 presents the theoretical framework and the key constructs based on the literature review. Section 3 describes the survey design. A first analysis of the collected data and the questionnaire validation are reported in Section 4. Implications and limitations of the study, future research directions, and concluding remarks are discussed in Section 5.

2. The impact of smart working on organization performance: A theoretical framework

In this Section we present the theoretical framework developed to describe the effect of SW on organization performance. In particular, based on the literature review and a conceptualization of the effect of SW on organizations at the level of macro- and micro-structure, the framework describes whether and under which conditions SW may improve the organizational performance, in terms of productivity and innovation performance.

As to the impact on structural dimensions of the organization, SW increases coordination needs because of the space-time separation of tasks. In the case of SW the normal division of labour into tasks is indeed combined with a further separation of workers who carry out their tasks in different points in time and space. That creates higher interdependencies among workers and requires several coordination mechanisms to be adopted. Standardization or hierarchical supervision could be not enough to manage the interdependencies, coordination mechanisms based on mutual adjustment and interpersonal relationships would be needed, thus increasing the attendant coordination costs (Carbonara and Pellegrino, 2021).

On the other side, SW produces changes in processes, knowledge flows, and activity workflows to the point of radically transforming the coordination mechanisms. In particular, by entitling employees to greater autonomy, SW reduces the need to adopt coordination mechanisms based on direct supervision as well as mutual adjustment mechanisms based on face to face interactions, which are replaced with virtual interaction, via "broad band" communication technologies (Arnaud and Schminke, 2007; Barney and Hansen, 1994; Serrien, 2008).

Based on this, we formulate the following hypothesis:

H1: SW has an ambiguous effect on organizational performance: it increases the needs of coordination due to the space-time separation of tasks, but puts in place alternative coordination mechanisms, which are equally effective and far less costly.

SW may impact on socialization processes and personal work styles (Bolisani et al., 2020; Mallia and Ferris, 2000; Troup and Rose, 2012). Some researchers agree that SW may create isolation, decrease socialization, and change the forms of interaction between colleagues (Dolan, 2011; Morgan and Symon, 2002; Raffaele and Connell, 2016), with consequent negative implications for the processes of knowledge sharing and knowledge management. Although extant knowledge management literature ascribed to information technology an important role in the knowledge management process (Bolisani et al., 2000), some information technologies can be less effective for interpersonal knowledge sharing due to their inability to transfer tacit or even explicit contents efficaciously (Dalkir, 2008; Hislop, 2002).

In the knowledge management literature, knowledge sharing is considered crucial to the generation of several organizational capabilities such as innovation which, in turn, is crucial to company performance (Kogut and Zander, 1996). In particular, some scholars recognize that, although sharing knowledge with colleagues may be very difficult, it is positively correlated to reductions in production costs, faster completion of new development projects, better team performance, improved innovation capabilities, and increased company performance including sales growth or revenue from new products and services (Arthur and Huntley, 2005; Collins and Smith, 2006; Cummings, 2004; Hansen, 2002; Hansen, Mors, and Lovas, 2005; Lin, 2007; Mesmer-

Magnus and DeChurch, 2009). Furthermore, explicit and tacit knowledge sharing practices not only have positive relationships with firm operational and financial performance directly but also influence innovation speed and quality, which are in turn related to organization performance (Choi and Lee, 2003; Davenport and Prusak, 1998; Hsu, 2008; Law and Ngai, 2008; Liebowitz and Chen, 2001).

Based on the above discussions, we propose the following hypothesis:

H2: SW decreases socialization among colleagues with negative implications for knowledge sharing, thus it negatively affects the organization performance.

As for the impact of the SW on some job characteristics, the micro organizational structure, it is widely accepted that the adoption of SW requires a profound change in the organizational culture and behaviour as well as the adoption of new managerial practices and leadership styles. In the new SW result-based culture, where the goals are defined collectively, and the individual is accountable for the results he/she accomplishes, employees have a greater level of autonomy and responsibility for making decisions about how to schedule their work and how to do it. Job autonomy is closely linked to the concept of employee empowerment, i.e. the freedom of employees to make decisions on how to schedule the job and on how to achieve the goals (Hackman, 1980). According to Blanchard, Carlos, and Randolph (2007), empowerment can raise the level of commitment and may result in better performance.

Based on that, we formulate the following hypothesis:

H3: SW enlarges job autonomy and empowerment that positively impact on job satisfaction.

A further key feature of Smart Working is associated to flexibility. Through appropriate Information and Communication Technologies (ICTs), SW allows employees to define where and when to carry out their work and, consequently, to be efficient wherever they are. So eliminating any time and space constraints. In the academic literature, there is clear evidence that flexibility in choosing both when and where to work positively affects work-life balance (Byron, 2005; Mesmer-Magnus and Viswesvaran, 2006; Shockley and Allen, 2007).

Based on that, we formulate the following hypothesis:

H4: By increasing flexibility, SW positively affects work-life balance and hence job satisfaction.

Academic literature provides many examples of how higher levels autonomy on the job, a trustworthy environment in which employees are given the possibility to acquire higher responsibility, and a higher work-life balance increase job satisfaction, and in some cases, motivation to perform the job (Boxall and Macky, 2014; Ezra and Deckman, 1996; Staines and O'Connor, 1980).

Based on that, we formulate the following hypothesis:

H5: A better work-life balance and a greater autonomy/empowerment increases job satisfaction and motivation, thus leading to better organization performance.

No one questions the central role motivation plays in shaping behavior and, specifically, in influencing work performance in organizations (Ambrose and Kulek, 1999). Nonetheless, as important as motivation is, it is not the only factor that determines performance. Several other variables affect performance. Such variables include ability, instinct and aspiration level as well as personal factors. Blumberg and Pringle (1982) classify these variables in three categories: the capacity to perform, which is linked to individual control of task-relevant skills, abilities, knowledge, and experiences; the opportunity to perform; and the willingness to perform or motivation. The presence of motivation per se, coupled with a capacity to perform, does not ensure positive performance, organizational support, i.e. availability of equipment, technologies, and organizational and managerial best-practices, is needed to create the opportunity to perform.

Based on that, we formulate the following hypothesis:

H6: The higher is the organizational support, namely the adoption of targeted interventions to raise awareness and knowledge on the subject, the implementation of SW programs and the provision of correct ICT tools to support SW, the better will be the organization performance.

SW does not simply involve staggering start times, rethinking support technologies for working from home, or stepping up training throughout the organization on basic digital competencies to effectively use collaborative

platforms. SW adoption radically transforms work methods and tools. Certainly, several tasks, if not certain jobs, can be done in SW with a minimal amount of effort, but when SW is adopted by a growing group of employees the shift toward SW requires a redesign of the sociotechnical systems and, more in general, it requires a revision of the work methods (Bonacini, Gallo, and Scicchitano, 2021). It also involves a profound change at each level of the organization and in each of its components (Barrero, Bloom, and Davis, 2021).

Change is what presses out of the comfort zone. For most people it is uncomfortable to change from one state to another, since the change process involves going from known to the unknown (Bovey and Hede, 2001). Workers in organization may not welcome change, simply because of their negative attitudes toward change. Evidence suggests that organizational change efforts can be very stressful experience for individuals (Elrod and Tippet, 2002; Grant, 1996) and the employees’ negative attitudes to change have negative consequences for the organization, in terms lower job satisfaction and productivity (Iacovini, 1993; Eby et al., 2000; Rush, Schoel, and Barnard, 1995; Schweiger and DeNisi, 1991).

The change management literature also argues that a strong organizational support, in terms of leadership style, managerial skills, supportive work relationships, effective communication, may contribute to the formulation of positive attitudes to change and, therefore, to the success of a change programme so avoiding the risk of performance loss (By, 2005; Vakola and Nikolaou, 2005). Many studies suggested that in a change management process, choices and decisions that managers make are fundamental to mitigate the risk of failure of the organizational change program and avoid performance drop. Managers as leaders play a crucial role in helping workers leave past behaviour and move forward towards new and different ways of working, in increasing workers’ propensity and motivation to change, in building organizational commitment so as to make easier for employees to work in a changing organizational environment (Iverson, 1996; Guest, 1987).

Based on that, we formulate the last two hypotheses:

H7a: SW requires change efforts that negatively affect organization performance.

H7b: The organizational support moderates the relationship between the change efforts, due to SW, and organization performance.

The overall theoretical framework is depicted in Figure 1.

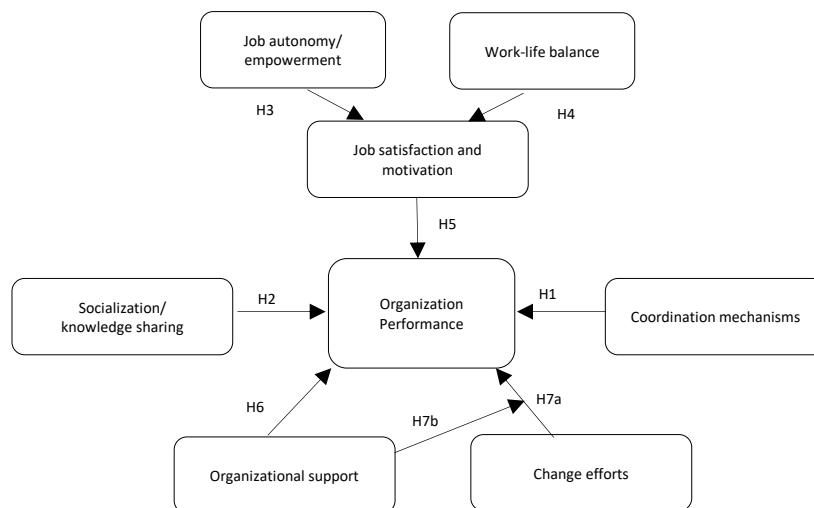


Figure 1: The theoretical framework

3. The empirical research design

After developing the theoretical framework, we designed an online survey by firstly developing a questionnaire with items that measure the constructs of the theoretical framework and by testing the quality and robustness of the questionnaire.

3.1 The questionnaire

The questionnaire comprises 28 questions. The first eight questions deal with socio-demographic information of the respondents (e.g. sex, age, role). Such information was used to disclose the presence of some control variables to take into consideration. The other questions deal with the workers' perceptions regarding the application of smart working in their own company and are used to measure the constructs of the theoretical model. In particular, three items are used to measure the impact of SW on coordination mechanisms. They reflect the need to intensify the relationships among employees and the facility with which they are established. Two items are used to measure the effect of SW on socialization within the organization and knowledge sharing. To measure the effects of SW on work-life balance, job satisfaction, and empowerment, we asked questions that aim at gathering information on each respondent's perceptions on the degree of time flexibility and spatial flexibility, on the level of job satisfaction and job autonomy, and on the level of control by supervisors.

The two questions associated to the "change effort" construct aim at assessing how much effort is required for the transition from traditional work to smart working and how much the working practices have changed due to smart working. To measure the organizational support, we asked four questions aimed at investigating the working environment of the company in which respondents work, namely the adoption of targeted interventions to raise awareness and knowledge on the subject, the implementation of SW programs, the adoption of managerial best practices, and the provision of correct ICT tools to support SW. Finally, the last four questions aim at measuring the effects of SW on the organization performance, in terms of productivity and innovation performance.

The first eight questions are either multiple choices or blank spaces that respondents had to fill in. The remaining questions are reported in the form of statements. In that case, respondents are asked to express to what extent they agree based a qualitative five-point Likert scale.

Constructs, items and questions are reported in Appendix.

3.2 Administration of the questionnaire

The questionnaire was administrated online from June 2020 to October 2020. Respondents were reached both via social media networks and through mailing lists. Data were anonymously collected through Google and Office365 platforms and analysed in aggregate form. To capture the early feelings of people that experienced SW in the emergence phase of the Covid-19 pandemic, the survey was promoted through the personal network of the authors (which include, among others, Industry Associations, Academics Associations, Individual companies, LinkedIn contacts) and by using a "snowball effect" (i.e. respondents were also asked to invite their friends to respond to the survey).

4. Results

In the present study, some preliminary analysis on the collected data have been performed: the descriptive analysis of the sample, the internal consistency analysis, and the analysis of the survey data.

4.1 Profiles of respondents

This section provides a complete overview on the respondents: 1,804 responses were collected, of which 1,648 were fully completed and reported in a database.

The characteristics of the respondents are shown in Table 1. The majority of the respondents were women (54%). Three age groups were identified, with 50% of the personnel aged between 30 and 50 years, 18% younger than 30, and 32% older than 50. The level of education is quite high: 54% of respondents declared to be graduated, 29% have a post-university degree and only 17% a high school degree.

Regarding the professional classification, 6 out of 10 respondents work in private companies (61%) and the remaining 39% in Public Administration. As for the former, 28% works in small and medium-sized companies, and 33% work in large companies.

The workers doing SW that answered the survey have different roles: Almost half of the respondents (49%) is an office worker, 16% works as manager, 4% as executive, 15% are school teachers.

Table 1: Characteristics of the respondents

Variable	N (%)
Sex	
Females	890 (54%)
Males	758 (46%)
Age groups	
< 30 years	297 (18%)
30-50 years	824(50%)
> 50 years	527 (32%)
Level of education	
High school licensed	280 (17%)
Post-Secondary Education	890 (54%)
Post-graduate degree	478 (29%)
Responsibilities	
Children at home	445 (27%)
Elderly people	198 (12%)
Caregiver for disabled	66 (4%)
No responsibilities	939 (57%)
Type of company	
Public Administration	643 (39%)
Small and medium-sized private enterprise	461(28%)
Large private enterprise	544 (33%)
Type of role	
Executive	66 (4%)
Manager	264 (16%)
Office workers	808 (49%)
School teacher	247 (15%)
Academic	82 (5%)
Professionals	132 (8%)
Others	49 (3%)
Distance between home and work	
0-5 km	1,034 (38%)
6-30 km	1,170 (43%)
>30 km	517 (19%)
Previous experience in SW	
Yes	610 (37%)
No	1,038 (63%)
Total	1,648 (100%)

Most of the respondents (81%) live and work in the same city or at least in a range of 30-kilometers, 19% live more than 30 kilometres away from the workplace. They have children at home in the 27% of cases, are responsible for elderly people in the 12% of cases, and have no responsibilities in the 57%.

Only 37% of respondents experienced SW before the Covid-19 crisis, for 6 out of 10 workers, smart work is a completely new experience.

Table 1 confirms that this is not a random sample of the Italian labour force, because it includes mostly highly educated professionals and managers, and a higher share of women.

4.2 Reliability analysis

Before using the results of the survey to test our theoretical framework, we test the quality and robustness of the questionnaire by performing an internal consistency analysis.

Cronbach’s alpha was selected to measure the internal consistency of the questionnaire (Cronbach, 1951). This statistical indicator measures reproducibility over time and the homogeneity among the questions. Cronbach’s alpha refers to the degree of correlation between the analyzed variables. After coding the items of the questionnaire, we transform the qualitative variables into quantitative ones, by using the five-point Likert scale ranging from “1” (totally disagree) to “5” (totally agree) throughout the questionnaire.

Cronbach’s alpha provides information about the correlation level among the items of the questionnaire. The closer to 1 the value of Cronbach’s alpha, the higher the level of correlation among items, thus each item provides a valuable contribution. Conversely, when the Cronbach’s alpha is close to 0, the level of correlation among the items is low, hence some of them are not appropriate. In this case, it is necessary to eliminate the items that reduce the value of Cronbach’s alpha (Cho and Kim, 2015).

Table 2: Analysis of internal consistency of the questionnaire

Construct	Item	Mean	St.Dev	Cronbach’s Alpha when the item is deleted
Coordination mechanisms	Item1_coord1	3.95	1.38	0.79
	Item2_coord2	3.35	1.50	0.75
	Item3_coord3	3.20	0.84	0.78
Socialization/knowledge sharing	Item4_soc1	2.61	1.04	0.77
	Item5_soc2	2.90	0.88	0.78
Job autonomy/Empowerment	Item6_emp1	3.44	0.80	0.79
	Item7_emp2	3.13	0.77	0.80
Work-life balance	Item8_w/l-balance1	3.56	1.70	0.82
	Item9_w/l-balance2	2.91	0.97	0.78
Job satisfaction and motivation	Item10_satisf1	2.73	1.20	0.78
Change efforts	Item11_change1	2.64	1.04	0.80
	Item12_change2	2.46	1.11	0.81
Organizational support	Item13_support1	2.97	1.07	0.77
	Item14_support2	3.26	1.02	0.78
	Item15_support3	4.17	1.30	0.79
	Item16_support4	3.87	1.47	0.80
Organization Performance	Item17_perfm1	3.59	1.16	0.78
	Item18_perfm2	3.19	1.16	0.74
	Item19_perfm3	3.14	1.09	0.74
	Item20_perfm4	3.29	1.68	0.76

Cronbach’s alpha value should be more than 0.70 in order to give good support for internal consistency reliability (Morgan, Leech, Gloeckner, 2007; Nunnly and Bernstein, 1994). Hence, we consider as acceptance threshold of this parameter 0.7.

We perform the analysis of internal consistency of the 20 questions used to measure the constructs of the theoretical model by using Cronbach’s alpha. The analysis showed an overall standardized Cronbach’s alpha of 0.79, corresponding to a very good reliability.

In the analysis by item the Cronbach’s alpha ranges from 0.74 to 0.82, which are all higher than 0.7. In particular, the value of the alpha decreased to a minimum of 0.74 when the items 18 and 19, related to the impact of SW on the performance, were deleted. A maximum of 0.82 is reached with the deletion of item 8. Table 2 shows the mean, the standard deviation, and Cronbach’s alpha of each item.

4.3 Findings and discussion

In the following, we analyse the survey data and provide some preliminary insights on the investigated issues. As regard to the impact of SW on the coordination mechanism, as expected, we find that SW requires more interactions among employees: 60% of respondents affirmed that the number of meetings in SW is greater than the one occurring when traditional work method were adopted and for the 39% the frequency of interactions with teammates has increased in SW. Space-time separation of labour and a greater level of delegation of authority due to SW require greater coordination between the diverse tasks and work positions. Meetings allow for the implementation of, at least, two main coordination mechanisms: mutual adjustment and direct supervision. However, the increased need for coordination is balanced out by the use of technology that facilitated the relationships among colleagues (Figure 2).

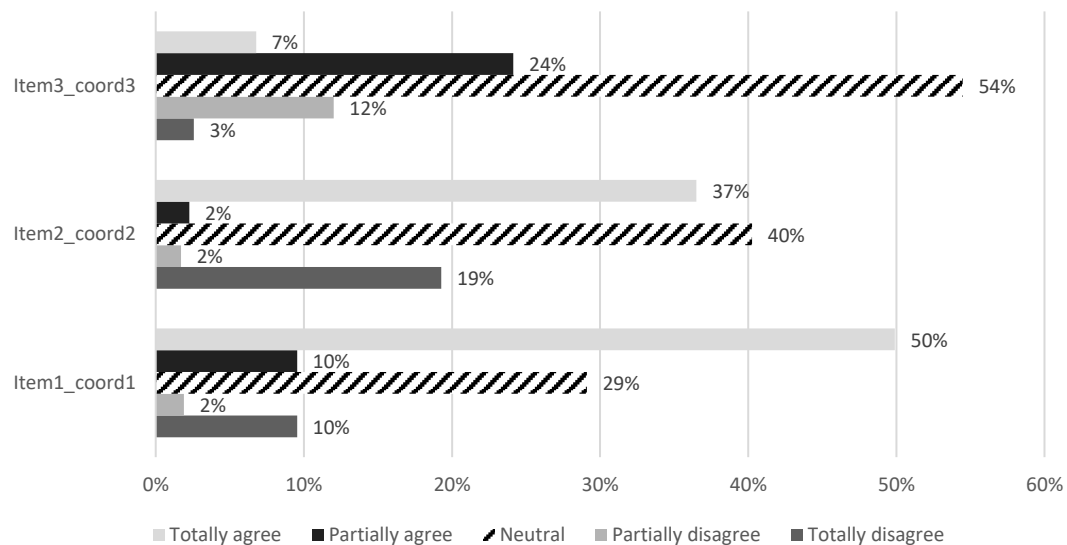


Figure 2: SW and coordination mechanism

As to the effect of SW on socialization within the organization and knowledge sharing, although for 57% of the respondents the relationships with colleagues remained unchanged, neither improved nor worsened, for the 44% of respondents SW negatively impacts on socialization among colleagues: they spent less time talking about non-work topics and chatting using instant messaging. In its current adoption, SW partially "fails" in supporting informal relationships and socialization.

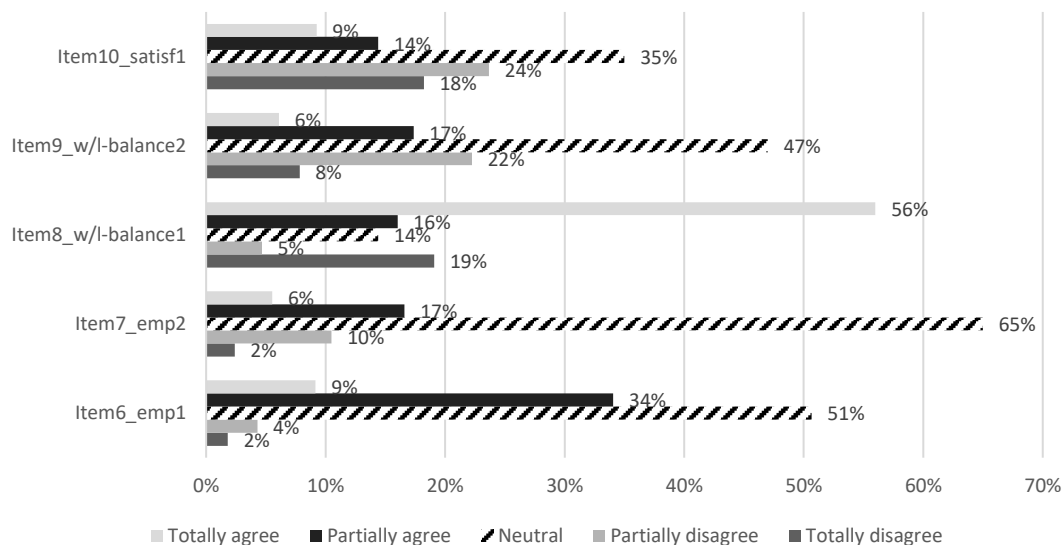


Figure 3: Impact of SW on empowerment, work-life balance, and job satisfaction

Participants were then asked to report their perception in relation to three work-related aspects (Figure 3), namely empowerment, work-life balance, and job satisfaction. More than 6 out of 10 respondents affirmed that the control exercised by the supervisor unchanged with SW and decreased only for 23% of respondents. However, this effect has contributed to increasing the autonomy of workers: 43% affirmed to have been more independent/autonomous in SW. Results show that SW improves the work-life balance by providing greater time flexibility (76% of respondents declared to have a more flexible working schedule) as compared to traditional work method. Responses to the question "in SW I feel to work in very suitable working spaces" show an average value (2.91) slightly lower than the middle (3), this may be due to the fact that most workers have adapted to their work needs the domestic spaces, surely not designed and organized to work. As for the perception on the job satisfaction, we gathered dispersed responses: 42% of respondents are not satisfied

with SW, 35% did not experience special gratifications nor problems, and 23% of respondents are satisfied with SW.

For the two questions related to the construct “change effort” we measure average values (2.64 and 2.46, respectively) lower than the middle (3). Results are counterintuitive as they mean that the transition from traditional work to SW did not require a profound change in the working practices as well as an additional effort for employees.

Responses to the questions concerning the organizational support show the greater average values: most of the respondents felt supported by their company in adapting their work to SW because of the adoption of targeted interventions to raise awareness and knowledge on the subject, the implementation of SW programs, the adoption of managerial best practices, and the provision of correct ICT tools to support SW.

Results of the questionnaire related to the organization performance are reported in Figure 4. Overall, the analysis of the responses proves that SW has not been detrimental for performance. 52% of respondents declared that they achieved performance goals more easily in SW as compared to traditional work method.

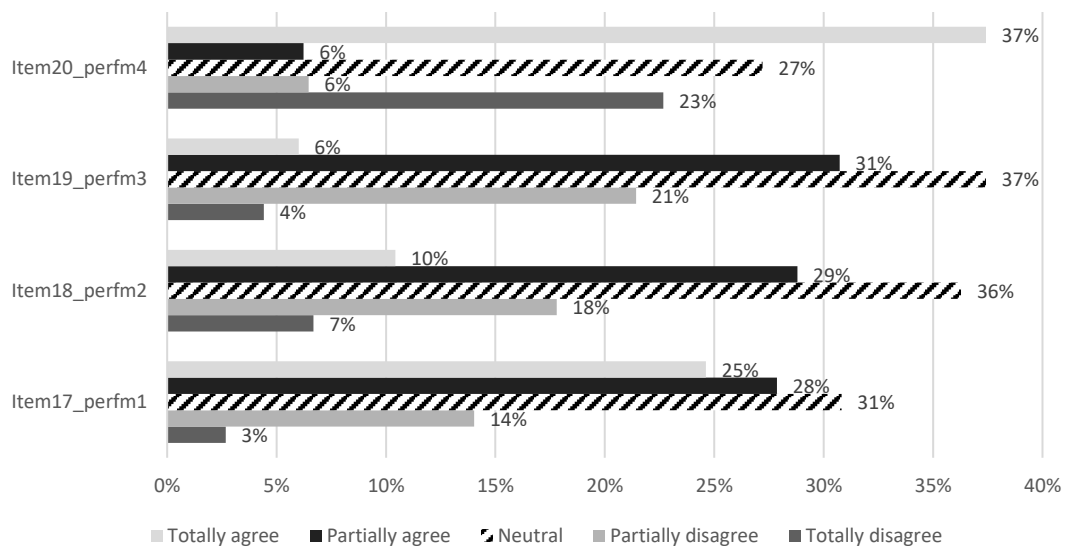


Figure 4: SW and organization performance

The preliminary analysis of results made some questions arise. From one side, thanks to new technologies, SW facilitates connections among colleagues. On the other side, more coordination efforts (at least in terms of more meetings) seems to be required. If processes are well designed, formalized and digitalized, new coordination needs should not arise. Maybe SW does not require a greater coordination, but simply makes coordination needs due to problems in process management (e.g. it is not clear who has to do what because the process is not formalized) more explicit. The perception of greater coordination needs, in other words, could simply be due to the fact that, before recurring to smart working, most coordination efforts were carried out in an informal and implicit way (e.g. by informally discussing with colleagues at coffee break or hearing colleagues’ discussions). So, the problem is not SW but the scarce formalization and digitalization of processes. The counterintuitive results, related to the construct “change effort”, could actually be explained as follows: if the working practices and processes are not formalized and digitalized before the implementation of SW, all coordination problems and needs will become explicit after SW implementation.

Almost half of respondents perceive a negative impact of SW on socialization. Such a result confirms the need to further investigate such an issue impact and, more in general, the implications of SW on knowledge management practices because they greatly affect organizational performance.

Finally, despite a greater flexibility, limited efforts to move towards SW, and a greater ease to achieve the work targets, 42% of respondent declared to be not satisfied with SW. The causes of possible employees' dissatisfaction towards smart working should be further explored.

5. Conclusions

Recently there has been a proliferation of studies reporting SW as a common practice due to the Covid-19 emergency. Looking at the post-pandemic world, several studies are questioning about the future of SW and whether it will be adopted by companies as an established successful practice. Providing an answer to such a question requires an investigation on whether and to what extent SW really impact on company performance.

Our research aims at investigating to what extent SW may contribute to improve organization performance and, in this vein, it can be considered a successful practice to be adopted in the post pandemic scenario.

The paper presents some preliminary findings of our research. In particular, based on a literature review and a conceptualization of the effect of SW on organizations, we firstly developed a theoretical framework that describes the characteristics of SW as a driver to increase organization performance. The framework encompasses a set of eight hypotheses - dealing with coordination mechanisms, socialization/knowledge sharing, job autonomy/empowerment, work life balance, job satisfaction and motivation, organizational support and change efforts - to assess whether and under which conditions SW may improve organization performance, in terms of productivity and innovation performance.

Second, to empirically test our theoretical framework, we designed a survey. To do this, we built a questionnaire with items that measure the constructs of the framework. Then, we tested the quality and robustness of the questionnaire. Results of Cronbach's alpha showed a good reliability, although the level appears variable through questions. Finally, we presented a preliminary analysis of the results of the survey. Based on the findings and analysis, some theoretical and managerial implications arise. In terms of implications for theory, the paper contributes to the still scant debate on SW (Torre and Sarti, 2020), going further the anecdotal vision and the collective imagination that associate with the SW a sort of working in relaxing conditions with better performance, which has become the premise for its adoption (Clapperton and Vanhoutte, 2014). Specifically, by using the perspective of organizational studies, we develop a theoretical framework that represents a first attempt to make a summary of extant literature on the topic and to empirically assess the relationship between smart working adoption and organizational performance. Also, a reliable questionnaire that could help investigate whether and to what extent SW allows for increasing productivity and innovation performance is provided. The questionnaire can be used to retrieve information about the workers' perceptions regarding the application of smart working in their own company. Finally, based on a preliminary analysis of the survey results, some issues to be further explored emerged: the relationship between smart working and process formalization and digitalization, the reasons of possible employees' dissatisfaction towards smart working and the impact of smart working on knowledge management practices. With this regard, there is no doubt about the challenges raised with regards to knowledge management practices by smart working. In a complete smart working organization (Gastaldi et al., 2014), the digital environment, composed of communication and collaboration tools, mobile workspace, corporate social network, and cloud-based solutions, can support those knowledge management processes traditionally associated with a condition of physical proximity between people, namely the processes of transfer and sharing of tacit knowledge, and can significantly increase the inter-organisational knowledge exchange (Al Mansoori, Salloum, and Shaalan, 2021). Advanced digital technologies can also support the processes of knowledge transfer and acquisition among smart workers. Such employees act differently from traditional workers. According to Comer (1991), traditional workers, thanks to their physical proximity, use passive means to acquire a large amount of information. They indeed observe actions and behaviors rather than directly ask others information about processes and procedures.

The paper presents some limitations. Firstly, only the first steps of the research are presented. The hypotheses of our theoretical framework have not been statistically tested. Nevertheless, the study contributes to research on SW and has the merit to call attention on a very relevant topic. Secondly, a non-probabilistic sample of respondents was used, which limits the generalizability of results and may create a bias in the results. On the other hand, the adopted method made it possible to collect a relevant number of responses, which provide an interesting picture of the investigated matter. Thirdly, answers given by respondents were

influenced by the particular conditions imposed by the lockdown: the pandemic had a strong impact on every aspect of people’s life, therefore, the specific situation might have had an impact on respondents’ attitude. As to the next steps of the research, we will use the results of the survey to test our theoretical framework. That will enhance the understanding of the effects of SW on organization, at the level of macro- and micro-structure, thus providing an answer on whether SW enable the achievement of productivity increase and better innovative performance and, therefore, if SW may improve organization performance. Understanding the impact of SW on performance is important to support company investment decision-making on, among the others, technologies, workspaces, human resources management systems, knowledge management practices, and training programmes, to be adopted to make SW an established practice also in the post-pandemic scenario.

5.1 Appendix

Construct	Item	Question
Coordination mechanism	Item1_coord1	Number of meetings in SW is greater than the one occurring when traditional work method is adopted.
	Item2_coord2	Frequency of interactions with teammates in SW is greater the one occurring when traditional work method is adopted
	Item3_coord3	SW facilitates the relationships among colleagues.
Socialization/ knowledge sharing	Item4_soc1	Socialization with teammates in SW improved (e.g you may consider the time to talk about non-work topics, chat using instant messaging) if compared to what happens when traditional work method is adopted
	Item5_soc2	SW improves the relationships among colleagues.
Job autonomy/ empowerment	Item6_emp1	The level of autonomy in SW is greater than the one occurring when traditional work method is adopted
	Item7_emp2	Compared to traditional work method, in SW my supervisor exercised less control.
Work-life balance	Item8_w/l-balance1	In SW the working time was more flexible as compared to traditional work method.
	Item9_w/l-balance2	In SW I feel to work in very suitable working spaces
Job satisfaction and motivation	Item10_satisf1	In SW I was fully satisfied/gratified by my job.
Change efforts	Item11_change1	My traditional work profoundly changed in the SW mode.
	Item12_change2	Adapting my traditional work to SW mode was very challenging.
Organizational support	Item13_support1	I felt fully supported by my organization in adapting my traditional work to SW mode.
	Item14_support2	In SW I had access to adequate technological resources to carry out my work effectively and efficiently.
	Item15_support3	In SW the objectives of meetings were clearly set by the supervisor.
	Item16_support4	In SW meetings were properly scheduled and organized by the supervisor.
Organization Performance	Item17_perfm1	In SW I achieved goals more easily than in the case of traditional work method adoption.
	Item18_perfm2	Team performance (e.g. new ideas generation, problems solving, process lead time) in SW improved with respect to what happened when traditional work method where adopted.
	Item19_perfm3	Remote interactions with teammates in SW are more effective than face-to-face interactions.
	Item20_perfm4	SW improved/shortened the decision-making process as compared to traditional work method.

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