Themes and Trends in Smart Working Research: A Systematic Analysis of Academic Contributions

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Abstract

This chapter aims to build a systematization of the current theoretical and empirical academic contributions on smart working (SW) in the organization studies domain and to examine which are the main paths that researchers are concerning themselves with, with specific attention being paid to the new meaning that the work itself has acquired in the model proposed by SW. Particular consideration is devoted to an analysis of the characteristics of the present debate on this construct and the meaning of SW, identifying two different – and contrasting – approaches: one considers it as a totally new concept; the other is notable for its continuity with previous arrangements such as telework. Further, some relevant concepts, strictly related to that of SW in working environments are considered. In the last part of the chapter, some key points for further research are proposed to create stimuli for discussion in the community of organization studies and HRM scholars and among practitioners, given from the perspective of deepening the change in progress, the relevance for which there is general consensus.

Keywords: Smart work; smart working; systematic literature review; keywords analysis; citation analysis AU:2

Introduction

In the first years of the 2000s, smart working (SW) has emerged in international literature as a new way to define what is considered as an innovative approach to

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work organization (Boorsma & Mitchell, 2011; CIPD, 2008; Lee, 2013), challenging the conventional models of work design and redesign, the traditional organizational hierarchy, and the classic managerial style mainly focused on control (Brewer, 2000).

The basic idea in which the new stream of research is rooted is that nowadays a different way for organizing work and tasks is needed, as the classic one no longer satisfies people's or organizations' needs. Indeed, the model for what has been labeled as SW is entering the work organization and the field of human resource management (HRM) practices, succeeding in modifying traditional work conditions and their natural environment, searching for different and (till now) not totally and uniquely defined solutions, essentially based on a greater flexibility and on a larger discretion in the performance of work activities, in the places where, and the times when they are carried out, and on an increased responsibility toward results that workers are requested to provide. Anyhow, the intensive introduction of such factors is believed to favor better performance by employees and to foster competitiveness coherently (Haines & St-Onge, 2012; Wood, Van Veldhoven, Croon, & de Menezes, 2012), which is essential for the survival and development of enterprises (Matejun, 2014) reinforcing, in such a way, the importance and the usefulness of the new adopted model (Chiaro, Prati, & Zocca, 2015).

Alongside these features, there is another fundamental element to consider, which plays a central role in the present topic. As Morgan (2014) has remarked, many interesting things are happening in the world of technologies that are having a relevant impact on work. More precisely, the recent unexpected and quick acceleration in the development and diffusion of new technologies supporting communication, collaboration, and social networking, together with the pervasive dissemination of powerful and easy-to-use mobile devices, helps the growth of portable systems (Ahuja, Chudoba, Kacmar, McKnight, & George, 2007) and offers new opportunities for innovative solutions regarding when to work, where to work, and in which way to work – further having impacts on the so-called smart work environment, which is a flourishing field of studies parallel to the one of SW on which we focus in this chapter. This is exactly how the collective imagination and a certain sort of rhetoric are used to represent the sort of working in relaxing conditions with better performance that is associated with the SW model, which has become the premise for its adoption (Clapperton & Vanhoutte, 2014).

Starting from these considerations, it does not surprise that the general debate on SW has become passionate and heated among enterprises, which have been practicing it for some years following the interest it has raised as a feasible response that is able to balance often contrasting needs (efficiency and productivity on the company's side, and flexibility and work–life balance on the individual's side) and so to create enhanced working conditions. The same happens in the field of consultancy, where the goal is to offer support in organizing fitting solutions and in defining how to manage them, being evident that the requested change by the new model has relevant implications for organizational culture, for HR practices design, for the relationships between bosses and workers, and for the definitions of specific objectives necessary to guide and evaluate work (CIPD, 2008; Randstad Workmonitor, 2018).

From the academic perspective, great emphasis has been put on a number of issues. First of all, the change in work and the impact of information and communications technologies on how we work have been examined (Colbert, Yee, & George, 2016; Holland & Bardoel, 2015); then, attention has been given to that which is classified as "digital work" and on the skills for which it asks (Nawaz & Kundi, 2010) more than on the implications for work organization (Hertel, Geister, & Konradt, 2005; Stanko & Beckman, 2015). Also, recent literature has analyzed how the same use of technologies is being changed by the emergence of new, integrated forms of omnipresent devices (Carillo, Scornavacca, & Za, 2017), how technologies have made work more portable and ubiquitous (Scornavacca, 2014), and how, by consequence, the personal attitude toward technologies has to be trained for the good use of any tool and for an appropriate relationship with technology-related work and its "invasion" of employees' own lives (Al-Dabbagh, Sylvester, & Scornavacca, 2014).

With regard to SW, the debate is still scant among scholars in organizational and human resource management; specifically, there has been a lack of research undertaken from the "pure" perspective of organizational studies, while a number of contributions have been designed using, for example, the lens of engineering and computer science. Some studies are concerned with very specific workplace-related issues, such as occupational safety and health (Munir et al., 2018; Podgórski, Majchrzycka, Dabrowska, Gralewicz, & Okrasa, 2017), revitalization of urban spaces (Buksh & Mouat, 2015), or on the contextual factors supporting SW opportunities, namely environmental conditions, services useful for its implementation, and so on (Park, Kim, Park, Na, & Chang, 2018). It seems indeed that more research is requested to enter this phenomenon (i.e., SW) better, the definition of which is still not clear and shared, and about which it seems hard to understand the real innovative potential in order to transform work and work practices, and to analyze the consequences of the growing use of technologies both at a personal level and at the organizational one (Colbert et al., 2016). At the same time, there is not a comprehensive and systemic understanding of the phenomenon yet and no empirical evidence of the existence of complementarities among all the elements on which firms should focus in case they want to adopt and develop an SW model. All these are relevant questions, which preliminarily ask for a detailed description of what SW is.

This chapter aims to build a systematization of contributions in the current theoretical and empirical academic debate on SW and to examine which are the main paths that researchers are concerned by, with a specific concern for the new meaning of work itself involved in the model proposed by SW. It goes on to define some key topics for future research and to create stimuli for discussion in the community of organization studies and human resource management scholars, and among practitioners with the intention of deepening the change in progress and, as well, to provide them with effective awareness of how to manage this new challenge, for whose relevance there is a broad consensus.

In order to pursue our goal, the chapter is organized in the following manner. In the second section, the research methods are described and the specific path

followed by the researchers is summarized, and the list of examined papers is presented. Then, the dataset is analyzed to examine the different definitions of SW, from the various perspective of other studies as well as the principal and recurring themes in the papers, together with the limits of the research. Finally, some considerations on future development are proposed.

The Research Method

The field of knowledge for SW appears to be fragmented and scarcely visited. Due to this, the authors considered it necessary to undertake a systematic literature review, using simple and focused criteria to include all the extant academic investigations on the topic and then to identify the most relevant and pertinent contributions discussing it, as a basis for understanding something more about the concept, its meaning, and its features. As is known, this approach aims to remove subjectivity and tries to synthesize the available bibliometric information, which is the best way to analyze an emerging phenomenon (Tranfield, Denyer, & Smart, 2003).

Following previous studies aimed at exploring the nature, structure, and state of the art of a specific stream of research (see for example, Lazzeretti et al., 2014) and, AU:3 specifically, the suggestions offered by Za and Braccini (2017), this chapter focuses on the creation of a dataset and a subsequent preliminary data analysis.

The first step is related to data collection and it involves the identification of suitable sources for literature research. Because of the relative newness of the topic and the lack of a well-defined path into the academic debate, it has been decided to include multiple sources as platforms to accomplish the literature search and selection, limiting the sources to peer-reviewed journals and academic works because these can be considered validated knowledge and are likely to have the highest impact in the field (Podsakoff, MacKenzie, Bacharach, & Podsakoff, 2005).

In detail, two main databases were used for this analysis. They are the Thomson Reuters Web of Science database (Institute for Scientific Information – Web of Science, ISI-WoS) and Scopus.

First, our data gathering started with the ISI-WoS database. The reason for the choice of this database as the first to be analyzed is because of its high-level scientific standards widely recognized in the academic community. We expected that the number of contributions gathered from this source would have been lower than the one we could get from the other. Indeed, Scopus includes academic contributions with less strict acceptance standards, even those for which an impact factor is not present. Also, our conviction was that most of the works, but not all, reported in ISI-WoS would have been found in SCOPUS as well. So, in order to be sure that all relevant contributions were included in our search and to support our thinking, both databases were considered. We decided not to include other databases in this first research effort because we considered them to be sufficient for this first attempt at a review and we thought that the two chosen were well representative and were

Table 1: Typology of Papers on SW (ISI-WoS).

Document Type	**No.**
Article	50
Proceedings paper	50
Book review	2
News items	2
Meeting abstract	1

also used as the principal ones by a number of previous studies (e.g., Yang & Meho, 2006).

As for the searching strategy, two terms were included: "smart work" and "smart working." We decided consciously to exclude similar ones, such as "agile work" and "nomadic work," because we were interested in understanding why and how this specific label is used.

The query for ISI-WoS was performed on September 27, 2018, and the syntax used was[1]:

> TS = ("smart work" OR "smart working") OR TI = ("smart work" OR "smart working")) *AND* LANGUAGE: (All)
>
> *Indexes = SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan = All years*
>
> TOPIC OR TITLE (smart working*) AND documents types (article OR proceeding paper), timespan: all years; search language = all.

The query run in ISI-WoS returned a set of 105 manuscripts. Among these, 50 were articles, 50 were proceedings, two were book reviews, and two were new items (as shown in Table 1). The research areas of the contributions, classified according to ISI-WoS, were mainly: "computer science" (42), "engineering" (39), and "telecommunications" (20) (see Table 2). Among the countries that appear to contribute the most to this debate are: "South Korea" (33), "USA" (10), and "Italy" (10) (see Table 3).

The same procedure was adopted with the second database, which was Scopus, on October 22, 2018. The query syntax for Scopus is presented below[2]:

> TITLE-ABS-KEY ("*smart work*" OR "*smart working*")

[1]TS stands for TOPIC and TI stands for TITLE.

[2]ABS stands for abstract; KEY stands for keywords.

Table 2: Frequency of Contributions on SW in the First 100 Research Areas (ISI-WoS).

Research Area	No.
Computer science	42
Engineering	39
Telecommunications	20
Business economics	11
Public environmental occupational health	5
Transportation	5
Automation control systems	3
Information science library science	3
Construction building technology	2
Energy fuels	2
Material science	2
Physics	2
Public administration	2
Robotics	2
Biotechnology applied microbiology	1
Education educational research	1
Environmental sciences ecology	1
Health care sciences services	1
Operations research management science	1
Psychiatry	1
Science technology other topics	1
Social sciences other topics	1
Sociology	1
Veterinary sciences	1

This search was interrogating all years from 1972, all languages, and all kinds of contributions.

In total, 193 papers were found. Among these, 86 were articles, 77 were conference papers, 10 were book chapters, and seven were reviews and so on, as shown in Table 4. The main research areas of the contributions were in "computer science" (85), "engineering" (70), and "business, management, and accounting" (34) (see Table 5). Considering the countries that mostly contribute to this debate, "South Korea" (57), "USA" (27), and "Italy" (10) occupy the principal positions (see Table 6).

Table 3: The Most Active Countries in SW Literature (ISI-WoS).

Country	**No.**
South Korea	33
Italy	10
USA	10
England	7
Peoples Rep. China	7
Australia	6
India	6
Germany	4
Norway	2
Poland	2
Sweden	2
Switzerland	2
Austria	1
Denmark	1
Finland	1
France	1
Ireland	1
Latvia	1
Morocco	1
Namibia	1
Netherlands	1
Nigeria	1
Scotland	1
Singapore	1
Spain	1

The outcome obtained by the two databases was organized in MS Excel sheets filled with the principal information. Then, these were examined for a first general look and compared in order to exclude duplications of contributions in the two datasets. Seventy-nine papers proposed by Scopus were present in ISI-WoS, so only 113 from the original result of the Scopus search could be included. Sometimes, it was necessary to apply a further deep control for those situations in which: a paper written by the same author/authors with the same title was indicated with a

Table 4: Typology of Papers on SW (Scopus).

Document Type	No.
Article	86
Conference paper	77
Book chapter	10
Review	7
Conference review	4
Book	3
Article in press	3
Note	2
Short survey	1

Table 5: Frequency of Contributions on SW by Research Areas (Scopus).

Research Area	No.
Computer science	85
Engineering	70
Business, management, and accounting	34
Social sciences	24
Decision sciences	15
Economics, econometrics, and finance	15
Mathematics	14
Medicine	10
Energy	8
Materials science	6
Earth and planetary sciences	3
Environmental science	3
Multidisciplinary	3
Physics and astronomy	3
Arts and humanities	2
Chemical engineering	2
Nursing	2
Pharmacology, toxicology, and pharmaceutics	1
Psychology	1

Table 6: The Most Active Countries in SW Literature (SCOPUS).

Country	No.
South Korea	57
USA	27
Italy	17
United Kingdom	14
China	9
India	9
Australia	8
Germany	6
Hong Kong	4
Switzerland	4
Finland	3
France	3
Latvia	3
Norway	3
Poland	3
Spain	3
Sweden	3
Canada	2
Austria	1
Botswana	1
Colombia	1
Czech Republic	1
Denmark	1
Greece	1
Indonesia	1
Ireland	1
Kazakhstan	1
Kuwait	1
Namibia	1
Netherlands	1
Nigeria	1
New Zealand	1

Table 6: Continued.

Country	No.
Scotland	1
Russian Federation	1
Singapore	1
Saudi Arabia	1
Spain	1
Singapore	1
South Africa	1

different year, so work was done to understand the reason for the difference (for example, if there was an online version and a printed version of the same paper); or, a paper written by the same author/authors was discovered with a title quite similar to another (for example, the same first part and a different subheading), to verify if the papers had autonomous content meaning that each should be considered separately. The final dataset, in which the two sources merged without overlapping and with self-sustaining papers, was composed of 209 documents (see Figure 1).

In a second stage, we analyzed all the contributions selected individually in order to verify the effective fit between the concept object of study in this chapter – namely SW and its use – and the one included in the manuscripts belonging to the complete list to obtain the final set of articles on which to focus the in-depth analysis.

In detail, the manuscripts were examined using content analysis, starting from their titles, abstracts, keywords (when present) and, if useful – to be sure of the cohesion with the aim of the study – the article content was examined. This analysis showed that most of the papers did not actually fit the research theme. Indeed, many papers were "false-positive" and used the keywords "smart work" or "smart working" with a different meaning. For example, many contributions present in our initial dataset discussed the topic of the "smart work environment." This label is generally used to identify a context in which information assets are available inside and outside the enterprise through cloud-computing technologies; this perspective is evidently connected to SW *strictu sensu*, but the focus of such papers is on boundary conditions related to security risks and not on what SW is and how it works (Munir et al., 2018).

Equally, "hard work/smart work" is present in a significant number of documents: in this case, the "smart work" label is defined as the manifestation of a tendency to select clever and ingenious approaches to deal with a given task, and to modify those approaches, intelligently and resourcefully, where necessary in contraposition with "hard work," which may be viewed as the expenditure of effort in the performance of tasks (Rapp, Ahearne, Mathieu, & Schillewaert, 2006). Also, in this

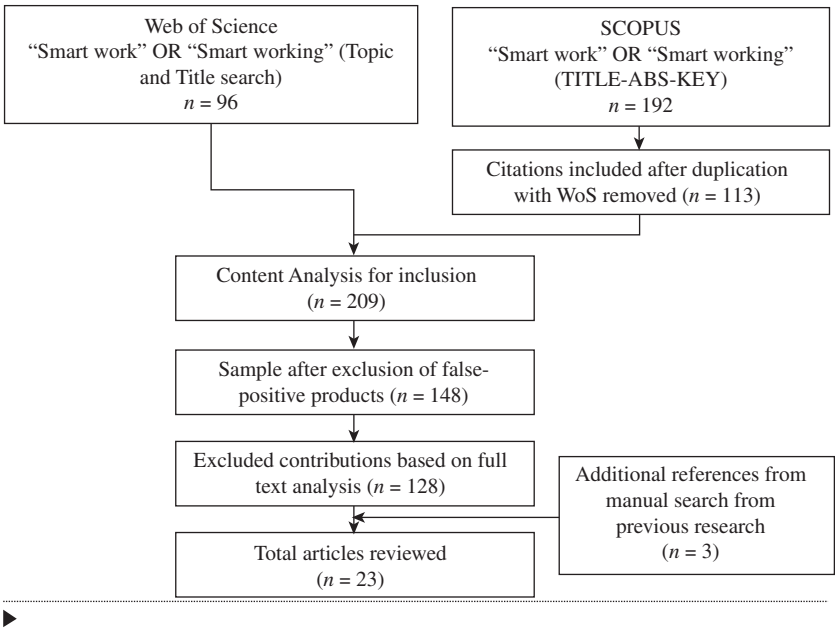

Figure 1: The Analysis Flow.

case, a "liaison" can be noted, but no perfect match with our research interest is present.

Through this content analysis all the "false-positive" products were excluded, resulting in 61 being rejected; so, the number of articles was reduced from 209 to 148.

After analyzing the full texts of the papers, 128 were excluded for the following reasons: 23 for lacking academic rigor (e.g., limited reference lists and poor indications about used methods), in spite of being published in peer-reviewed journals or as part of conference proceedings; 78 for lacking relevance to the topic we wished to study (being SW, even if explicitly indicated, not at the heart of the paper or related to other research questions, i.e. smart work clothes as a way to automate data collection (e.g., Yang et al., 2019)); 8 because they were reviews of papers or books; and 19 for being written in a language other than English.

Finally, a manual search comparing the reference lists of the selected articles and our own previous research on the topic resulted in three additional references to be included in the final list because of the focus charactering these contributions – they are indicated at Numbers 5, 17, and 20 in Table 7. This technique had been used in previous research on the topic and offered interesting insights (see, for example, Gastaldi et al., 2014).

As a result, the review has been developed based on the analysis of 23 full texts of academic papers.

The whole process is graphically represented in Figure 1.

Table 7: The Final List of Selected Papers on SW.

1. Byun Yun sang & Kwak Jin (2013). Security management architecture for secure smart work center. *International Journal of Security Management*, *7*(5), 315–320, http://dx.doi.org/10.14257/ijsia.2013.7.5.29.
2. Cha Kyung Jin & Cha Joon Seub (2014). The common challenges to the successful implementation of smart work program. *International Journal of Multimedia and Ubiquitous Engineering*, *9*(2), 127–13; http://dx.doi.org/10.14257/ijmue.2014.9.2.12.
3. Eom Seok-Jin, Choi Nakbum & Sung Wookjoon (2016). The use of smart work in government: Empirical analysis of Korean experiences, *Government Information Quarterly*, 33:562–571; http://dx.doi.org/10.1016/j.giq.2016.01.005.
4. Eom Seok-Jin, Choi Nakbum & Sung Wookjoon (2014). The use of smart work in Korea: who and for what? *Proceedings of the 15th Annual International Conference on Digital Government Research* ACM, June 18–21, 253–262¸ ISBN: 978-1-4503-2901-9 doi > 10.1145/2612733.2612744.
5. Gastaldi Luca, Corso Mariano, Raguseo Elisabetta, Neirotti Paolo, Paolucci Emilio &, Martini Antonella (2014). Smart working: Rethinking work practices to leverage employees' innovation potential, *Proceedings CINet*, 337-I347: SBN 978-90-77360-17-0.
6. Heo Geon Il, Park Yong Jun & Park Won Hyung (2015). Vulnerability of information disclosure in data transfer section for constructing a safe smart work infrastructure, *Multimedia Tools and Applications* 74:8831–8847; DOI 10.1007/s11042-013-1627-1.
7. Judrupa Ilze & Senfelde Maija, (2016). Introducing of smart work – Opportunity to increase economical development of municipalities in Latvia, *Proceedings International Conference on Industrial Engineering and Operations Management*, Kuala Lumpur, Malaysia, March 8–10, 2623–2633.
8. Kim Hyojeong & Suh Chang Juck (2017). Are managers making the right choice?: IT investment for smart work, *Journal of Cases on Information Technology*, *19*(2), 44–54; DOI: 10.4018/JCIT.2017040104.
9. Kim Yong-Young & Oh Sangjo (2015). what makes smart work successful? Overcoming the constraints of time geography, *Proceedings 48th Hawaii International Conference on System Sciences, January 5–8*, 1038–1047.
10. Kim Yong-Young, Oh Sangio, Oh Han-Mo & Lee Jau-Eun (2017). Factors on successful adoption of smart work: A case study through time geography and communication cube perspectives. *International Information Institute (Tokyo). Information*, *20*(2A), 699–712; ISSN 1343-4500, eISSN 1344-8994
11. Lee Hyejung & Park Jun-GI (2016). Work design characteristics of mobile-intensive workers: Implications for future work design. In Lee Jungwoo (eds), *The impact of ICT on work*, Springer; ISBN 978-981-287-612-6; DOI 10.1007/978-981-287-612-6_9.
12. Lee Kyu Ouk, Song Ho Young & Chung Heechang (2014). Framework and service scenarios for smart-work*, Proceedings of the 16th International Conference on Advanced Communications Technology*, February 16–19, 414–417; ISBN 978 89 968650 3 2.

13. Lee Veronica (2014). An empirical analysis on users' usage intention of enterprise smart application influencing users' job performance, *Proceedings IX International Conference on Applied Business Research ICABR*, October 6 −10 (2014), 600−608
14. Malik Ashish, Rosenberger Philip J. III & Fitzgerald Martin (2016). Transformative co-creation of value: The case of smart work hubs, *Proceedings of the XXVII ISPIM Innovation Conference* −June 19−22.
15. Malik Ashish, Rosenberger Philip J., Fitzgerald Martin & Houlcroft Louise (2016b). Factors affecting smart working: Evidence from Australia, *International Journal of Manpower*, *37*(6), 1042−1066; http://dx.doi.org/10.1108/IJM-12-2015-0225.
16. Mazzucchelli Sara (2017). Flexibility and work-family balance: A win-win solution for companies? The case of Italy, *International Review of Sociology*, (2017) *27*(3), 436−456, DOI: 10.1080/03906701.2017.1377411.
17. Oh Sangjo, Kim Yong-Young, Lee Heejin & Lee Jong Man (2014). A study on the interferences between work and nonwork in the smart work context, *Journal of Digital Convergence 12*(4), 213−226; DOI: 10.14400/JDC.2014.12.4.213.
18. Raguseo Elisabetta, Luca Gastaldi & Neirotti Paolo (2016). Smart work supporting employees' flexibility through ICT, HR practices and office layout, *Evidence-based HRM*, *4*(3), 240−256; DOI 10.1108/EBHRM-01-2016-0004.
19. Raguseo Elisabetta, Neirotti Paolo, Paolucci Emilio, Gastaldi Luca, Corso Mariano & Martini Antonella (2014). Towards a smarter work? Unpacking complementarities between ict adoption, human resource practices and office layout, *Proceedings of the 9th International Forum on Knowledge Assets Dynamics IFKAD*, June 12−14, 2984−3001.
20. Ravarini Aurelio & Strada Gianmaria (2018). From smart work to digital do-it-yourself: A research framework for digital-enabled jobs, in Lamboglia Rita.et al. (Eds.), *Network, smart and open*, Lecture Notes in Information Systems and Organisation 24, Springer; https://doi.org/10.1007/978-3-319-62636-9_797.
21. Tagliaro Chiara & Ciaramella Andrea (2016). Experiencing smart working: A case study on workplace change management in Italy, *Journal of Corporate Real Estate*, *18*(3), 194−208; DOI 10.1108/JCRE-10-2015-0034.
22. Torre Teresina & Sarti Daria (2018). Into smart work practices: Which challenges for the HR department?, In Ales Edoardo et al. (Eds), *Working in digital and smart organizations*, Palgrave MacMillan, ISBN 978-3-31977328-5; eISBN 978-3-319−77329-2, http://dx.doi.org/10.1007/978-3-319-77329-2.
23. Vitola Alise & Baltina Iveta (2013). An evaluation of the demand for telework and smart work centres in rural areas: A case study from Latvia. *European Countryside*, *5*(3), 251−264; DOI: 10.2478/euco-2013-0016.

In the following table the complete list of in-depth analyzed contributions is reported.

The Results

Starting from the complete MS Excel dataset, the next step was to read the 23 documents, with the aim to organize the emerging information on an analysis card, realized both in an MS Excel sheet and on an MS Word document, containing the following data, as previously done for systematic reviews (Mol, Khapova, & Elfring, 2015): (1) the name of the author/authors, (2) the title of the document, (3) the year of publication or presentation, (4) the destination of the paper, (5) the keywords provided in the papers when present (or defined according to the authors' awareness, when not indicated), (6) the definition of SW (or the indication of its constitutional elements, when a definition is not proposed), (7) eventual antecedents or consequences related to SW, if coherent with the type of the study, (8) the theoretical background of the author/authors, and (9) the research methodology.

In the following pages, the synthesis of the first findings is offered.

A General Description of the Dataset

Some first general indications can be offered to help understand how our topic has been deepened. First, SW is confirmed to be a real recent object of study, since the first documents were published in 2013 (see Table 8). Also, it appears as a topic where research has been quite scattered among disciplines and across academic communities. Indeed, the 12 articles of our sample were published in 12 different journals, and all the 9 proceedings are related to different conferences, mainly focused on technological perspectives. The remaining three works are book chapters

Table 8: The Distribution of Publications by Year.

Year	Number
2013	2
2014	7
2015	2
2016	7
2017	3
2018	2

Table 9: The Dataset for the Typology of Documents.

Document Type	Number
Paper in journal	12
Paper in proceedings	8
Chapter in book	3

Table 10: The Distribution of Documents by Research Methodology.

Method	Number
Theoretical paper	5
Survey	8
Case/s study	6
Mixed (more than one method used)	3

included in books dealing with general topics and broader contents, in which these chapters find their places as enriching points of view (see Table 9).

From the methodological point of view (see Table 10), researchers engaged in studying SW use a large array of methods. Also, it is interesting to notice that despite the recognized need for a systematization of the concept and its definition only five papers are theoretical whilst the others propose empirical research. This suggests, on the one hand, the need for an academic effort in trying to systematize the concept, to define solid roots useful for developing any future academic debate and further research; on the other hand, we acknowledge, due to the high proportion of empirical studies, the urgency of understanding the phenomenon.

Moreover, we tried to examine the theoretical background of the authors. Being impossible to find the exact scientific backgrounds of all them, because in many papers it was not indicated, we consider their departments of affiliation as significant indicators.

Also, our results highlight that 13 articles among the 23 selected were written by authors whose academic affiliation was in the management and administration field of studies, which corresponded to 57% of the total number of authors. This also proves the still high level of interdisciplinary nature of the debate on the concept of SW. The other authors are working in the information security, engineering, and architecture domains. Further, most of the authors in the management and administration areas of study, belong to the field of general management or are in specific sectors, such as hospitality and the public sector.

SW Definitions: Is It a New Concept or a Development of Previous Ones?

The principal pursued goal of this research is to investigate the possibility of collecting the definitions of SW proposed by the examined papers, to create a big picture of the phenomenon and to be enable its analysis in depth, answering the most relevant question, which is whether SW is a new concept or if it represents a step – perhaps a really fundamental one – in the evolution of the work organization.

According to the first and the most numerous group of documents, it seems that SW is simply a new label for a trend in progress.

This position emerges for example in Vitola and Baltina (2013). The two researchers underline that the origins of smart work (telework, e-work, mobile work) – i.e., working independently of time and place with the help of ICT – came from the last century, when Nilles (1975) first coined the term "telecommuting," which – as the authors remember – has been defined "as working outside the conventional workplace and communicating with it by way of telecommunications or computer-based technology telework constitutes an early form of virtual work" (Bailey & Kurland, 2002, p. 384). In the same mold is the contribution made by Eom and colleagues (2016). According to these scholars, SW refers to an alternative means of organizing work with telecommunications, mobile devices, and computer-based technologies that allow employees to undertake their labor activities at any time and in any place, including their homes and/or at their firm's satellites. Moreover, they remark that, while the term and the definition of SW have not reached consensus among scholars and practitioners, a great deal of studies have discussed SW within the context of telework, teleworking, or telecommuting using the same reference, that is Nilles (1975), who first, as just mentioned, coined the term "telecommuting." Therefore, they think that examining the development of telework is a requisite for a better understanding of SW.

According to Kim and Oh (2015), SW is an emerging term describing telework that individuals perform in a smart and innovative manner using mobile devices such as smartphones. According to these researchers, SW is observed as an expanded concept of telework rather than a new concept. Indeed, they note that "SW can be regarded as an extended version of telecommuting or distance work and defined as working efficiently and conveniently regardless of time and place utilizing ICT." (Kim & Oh, 2015, p. 1039). In their analysis, the authors specify that types of SW are not well-defined, but that it is possible to categorize SW into four categories: (1) "telecommuting," which means employees working at home connecting to organizational networks such as virtual private networks (VPNs), (2) "working at Smart Work center[s]," signifying that the employees go to a Smart Work center and perform their work at that location, (3) "mobile work," indicating that workers perform their tasks using mobile devices, such as smartphones or tablet PCs, and (4) "flexible work" or "flex hours," denoting that the employees are in control of their starting and stopping work times.

Coherently with this approach, Heo and colleagues (2015, p. 8831) – who do not examine in detail the nature of SW and do not propose a definition – suggest

that "the type of SW is divided into mainly three parts: telecommuting, work in smart work center[s] and mobile office[s]."

Judrupa and Senfelde (2016, p. 2624) suggest that:

> an increasing share of businesses and other organizations are keen to use SW (telework, distant work, e-work, mobile work) – a wide-spread practice that allows employees and their tasks to be shared across settings away from central place of business or physical organizational location. The declination they offer, between parenthesis, shows the meaning they recognize for SW as a label summing up the various forms such work can assume.

Malik and colleagues (2016, p. 1043) start with the paucity of studies on SW as the motivator of their choice to begin their research with a review of teleworking literature and its variants, so confirming the idea that SW is a novel and emerging variation of teleworking. In their paper, they conceptualize SW "as a means of achieving better stakeholder outcomes through new ICT, collaborative, creative and iterative processes of exploration and exploitation of existing and new knowledge."

Mazzucchelli (2017) adopts a broad approach, underlining (she, too) that SW is as an innovative approach to work organization that integrates and exceeds concepts such teleworking and mobile working (in this sense remarking on the continuity from the different forms assumed by work supported by technologies), which questions traditional constraints and seeks a new balance.

Kim and colleagues (2017) write that SW is an emerging term, describing it as telework that an individual performs in a smart and innovative manner using ICTs, and which can be defined as "working efficiently and conveniently regardless as an extended concept of telework rather than a new concept" (Kim, Oh, Oh, & Lee, 2017, p. 700).

Another small group of papers focuses on some innovative characteristics, which are supposed to be current in SW, so explicitly and implicitly remarking that the real point is not to connect SW with the past. In this stream, for instance, we can consider both Raguseo and colleagues' contributions (2014 and 2016) and Kim and Suh (2017).

In both the papers signed by Raguseo and other authors, the indications about what SW is are similar. In the first, SW is stated to be:

> a set of modern and not-conventional organizational models that are characterized by high flexibility in the choice of the working spaces, time and tools, and that provides all employees of an organization with the best working conditions to accomplish their tasks. (Raguseo et al., 2014, p. 2984)

in the second, the proposal about SW is that it:

> corresponds to a work practice that is characterized by special and temporal flexibility supported by technological tools and that provides all employees of an organization with the best working conditions to accomplish their tasks, refers to Fogarty, Scott, and Williams (2011). (Raguseo, Gastaldi, & Neirotti, 2016, p. 400)

Lee and colleagues (2014) consider SW as a pervasive concept using ICT arrangements, by which employees can work anytime, anywhere with any devices without

any limitation in working location and time, while Byun and Kwak (2013) state that SW is a flexible type of work that provides users with a more convenient working environment. According to Cha and Cha (2014), SW technically refers to work performed with the use of a smart technology, whilst Kim and Suh (2017) consider SW a flexible way to work, with no particular specification about the tools used.

According to Eom and colleagues (2016, p. 562):

> SW refers to an alternative means of organizing work with telecommunications, mobile devices and computer-based technologies that allow employees to undertake their labor activities anytime and anywhere […] different from telework and the other concepts […].

It is interesting to remark that they express an opposed position to that of Kim et al. (2017). In the authors' own previous work (Torre & Sarti, 2017, p. 251), SW orientation is considered 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 environment for employees," referring to the Chartered Institute for Personnel and Development (CIPD) (2008). In this case, some characterizing and distinctive elements are used to underline the novelty of the concept, in continuity with the stream that sees elements of originality in SW.

In the end, it is interesting to remark that no relationship between the two diverse approaches and the theoretical perspective of the authors is appreciable.

The Influence of Consulting Companies on the Definition of SW

It could be interesting to remark upon the role played by consulting companies, engaged in studying new trends and representing, in such a way, a precious resource for deepening SW. In this field, the most cited documents are the following: AU:4 Plantronics (2014), which is explicitly indicated by Raguseo et al. (2014, 2016); Gastaldi et al. (2014); Mazzucchelli (2017); CIPD and Capgemini (2008) to which refer Judrupa and Senfelde (2016); Torre & Sarti (2017); and Ahn (2010), mentioned by Kim and Oh (2015).

The knowledge of their contributions in defining SW is useful for understanding their influence on researchers and the usefulness of their points of view.

According to the Plantronics definition, SW is:

> a set of organizational interventions aiming to fully release the *innovation potential* of employees providing them with higher levels of *autonomy* in the choice of their working space, time and tools and asking in return a strong commitment in achieving corporate goals. (Plantronics 2014, p. 3)

CIPD-Capgemini defines smart work 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. (Plantronics 2014, p. 4)

In Samsung's view, SW is a vital issue to tackle:

> a "work smart" paradigm [that] can be effectively applied by dividing it into five categories. By innovating five areas – space, method, acquaintance, result, and time – businesses can establish a creative organizational culture that can contribute to the creation of high value-added. (Plantronics 2014, p. 5)

Principal and Recurring Themes Related to SW

In all the analyzed documents, SW is connected with some specific topics.

A first interesting element is related to the origins of the phenomenon, which never constitutes the basic *motif* of the papers, but frequently is reported in introducing them.

The term "smart" is topically used to describe the use of advanced ICTs and new knowledge to achieve better outcomes through collaborative and creative problem solving (as remarked upon by Malik, Rosenberger, Fitzgerald, & Houlcroft, 2016b). Coherently, it is not surprising that, as underlined by Kim and Oh (2015), SW originally meant "work smart," an expression with which it was intended to highlight the predisposition to work in a clever way contrasted with the myth of working hard, a situation with well-known and well-studied dark sides. So, a specific path is related to the deep meaning that "smart" assumes when the focus is on work and the role it has in the changes to work that people are currently witnessing.

Kim and Oh (2015) indicate an origin for SW in flexible working arrangements. Indeed, "flexibility" seems to be easily associated with SW, even if it is not so present as might be expected; only Mazzucchelli (2017) proposed it as a keyword and Torre and Sarti (2018) considered it as a constitutional element of the topic. Organization Agility is proposed as an association by one author (Lee, 2015).

In some cases, SW is associated with other constructs built around "smart" – such as smart government, smart work center, enterprise smart application, smart work security, smart work policy, and smart work hubs: as just mentioned, the link with the evolution of the world of smartness has a relevant weight in the introduction to SW. This is another promising track on which researchers are engaged and which asks for more investigation.

In three papers, SW is associated with workplace and work behavior (e.g., Raguseo et al., 2014). With regard to the workplace, changes in layout and space redesign are connected with the role of more and more essential technologies. Related to work behaviors, it is underlined how HR practices have to be redesigned in order to support new ways of working.

A really important element are ICTs, which are present in six papers. ICTs or the adoption of ICTs are indicated among the keywords often associated with the technology acceptance model and with perceived usefulness (Raguseo et al., 2016; Eom et al., 2016). In more detail, a first group is engaged in studying how the three basic elements (ICT, human resources, and layout) work to build the new model. In this case, attention is put on the strict complementarity any decision regarding one of the three elements produces on the others. So, this underlines the idea that the

SW model's peculiarities are found exactly in the combined use of all the available levers. Performance, included as a keyword in three works (e.g., Lee & Parl, 2016), as well as change management and management in general are not as present as might be expected. This seems to be reflective of the background of the authors, who largely belong to the fields of engineering and information sciences.

Limitations of the Research

The present research has some limitations. One is related to the sources used, which draw from a large covering of the universe of published papers – which is coherent with our aim to explore the use of the SW label and its meaning widely – but other relevant sources (i.e., EBSCO or JSTOR) might be explored to focus on organizational perspectives and to be sure that nothing of significance in such an apparently well-defined topic, that is in fact so fleetingly addressed, is missed. The second is related to the need to explore related fields of research, such as telework, mobile work, and similar categories, to deepen understanding of a crucial aspect connected with the nature of SW (scilicet, whether it is an original phenomenon or a new form of an existing trend arising by consequence of the technological evolution).

Another limitation is connected to the possibility of examining the relationship it may have with correlated topics, which, in this phase, have been excluded to simplify the analysis, but which evidently have important connections with SW and the exclusion of which could have reduced the range of papers containing interesting insights.

Finally, the essential descriptive approach has to be enriched with more advanced processing to catch any other possible information.

Conclusions and Future Perspectives

The analysis here proposed aimed to understand the state-of-the-art of research on SW in the academic field, it having been being ascertained that it is a diffused practice in organizations and so is asking to be understood better in terms of its entire potential.

From the analysis of the ISI-WoS and Scopus databases, 209 papers were initially identified; only 23 of them remained after a process of cleaning up duplicates and following a consistency analysis; these were analyzed deeply to meet the aim of the research.

The selected documents were published between 2013 and 2018, highlighting at first evidence that the literature on the topic is really relatively recent. Indeed, the expression "SW" is used beginning in 2008 and it has been borrowed by the consultancy world, which first introduced it and has subsequently played an important role in the diffusion of the SW model and in stimulating interest in it.

A second notable piece of evidence, from our point of view, is that SW is represented in two different ways in the international literature here examined. The first

considers it to be an evolution of telework, fostered by the oft-mentioned acceleration in the evolution of technologies useful to work, and sharing with it the use of technologies and the possibility of more flexibility for workers. The other underlines the discontinuity between these two types of ways of working, telework being a specific approach aimed to achieve different goals and based on an organizational setup and on organizational conditions, which are not useful for understanding SW. In this second group, it is not clear yet what the relationship of SW is with the long list of labels used to characterize how people are working now (in many places, for example).

Also, the potentialities of technologies seem to play a dual-purpose role in organizations orienting toward establishing new forms of working. On the one hand, they facilitate the enrichment of the human and social component, allowing people to empower themselves in their jobs through flexibility; on the other hand, they are evidence of a necessary change in the cultural approach to work, at the organizational, managerial, and individual levels. An SW approach entails an individual-focused organizational policy (which means a new culture, new styles of leadership, new jobs and skills, and new attitudes and behaviors) that has to fit together with digital supports. So, the two dimensions – the individual and the technological – find a fundamental raison d'être in their reciprocal interactions: this is a point to examine further because of its central position in the organizational vision as a whole.

Finally, the change produced by SW in working practices has been totally unexplored. For example, which role and which forms of control and discretion could be assumed: indeed, the very meanings that organizations ascribe to them will influences how work (namely SW) can be different or not, in a substantial sense, as a result of using the flexibility offered by ICTs to redesign tasks and skills. It is our opinion that the possibility to understand SW just in connection with these elements could offer a more rigorous foundation for the construct, which is an aspect that some scholars have begun to study (Neri, 2017).

In conclusion, more research is needed, first with the purpose of proposing a useful and comprehensive definition for SW and this could become one of the key shared goals for scholars in the managerial field. Second, it might be extremely useful if a deeper understanding and an improving debate are had on the change that SW may produce in working practices and about which solutions may favor the best fit with the new meaning of work and the new way of work organization.

Also, a call for the attention of organizational scholars in this specific area of investigation would be highly recommended, since we are firmly convinced that putting this issue at the center of the debate in our community might provide a valuable perspective to grant a further increase in the investigation of such issues that will both improve the theoretical debate and enlarge the variety of useful managerial suggestions that are derived for the enlightenment of practitioners in the field.

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