



Citation: Massimiliano Ruzzeddu (2023). Smart Working and Remote Working: Innovation within European Union. *Società Mutamento Politica* 14(28): 77-85. doi: 10.36253/smp-15015

Copyright: ©2023 Massimiliano Ruzzeddu. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/smp>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Smart Working and Remote Working: Innovation within European Union

MASSIMILIANO RUZZEDDU

Abstract. Alongside the drastic closure of many production sectors, the Covid19 emergency has forced a wide range of businesses to reorganize using the possibilities offered by ICT. Private and, surprisingly, even public sectors have organized themselves with considerable speed, sometimes even circumventing certain legal constraints, to ensure the maximum possible performance through remote working. Employees, teachers, lawyers, consultants and other professionals have, in fact, begun to coordinate online work among colleagues, users and customers, so as to be able to guarantee, at least in part, the performance necessary for their work. The purpose of this study, on the other hand, is to examine the remote working phenomenon which, although easier to identify, implies very significant social changes, which in turn imply rather complex epistemic problems. Namely, I will try to respond to the following Research Questions: a) how much is the phenomenon widespread across EU? b) is the introduction of RW only a consequence of the pandemic, or does it depend on a propensity for innovation?

Keywords: smart working, remote work, innovation, Covid19.

Riassunto. Accanto ad una chiusura drastica di molti settori produttivi, l'emergenza Covid19 ha costretto una vasta schiera di attività a riorganizzarsi utilizzando le possibilità offerte dalle ICT. Settori sia privati e, sorprendentemente, anche pubblici si sono organizzati con notevole rapidità, alcune volte aggirando anche alcuni vincoli giuridici, per garantire il massimo possibile della loro performance attraverso il lavoro a distanza. Impiegati, insegnanti, avvocati, consulenti e altri professionisti hanno infatti cominciato a coordinarsi on line fra colleghi, e con utenti/clienti, in modo da poter garantire almeno in parte le performance necessarie per il loro lavoro; questo ha dato vita ad una vera e propria rivoluzione lavorativa dettata dall'urgenza di arrestare, per quanto possibile, la parte più piccola possibile delle attività dei vari paesi coinvolti dalla pandemia. Lo scopo di questo studio è quello di esaminare il fenomeno del lavoro a distanza che, sebbene sia facile da identificare, implica cambiamenti sociali molto significativi, che a loro volta implicano problemi epistemici piuttosto complessi. Soprattutto, cercherò di rispondere alle seguenti domande di ricerca: a) quanto è diffuso il fenomeno in tutta l'UE? b) l'introduzione della RW è solo una conseguenza della pandemia, o dipende da una propensione all'innovazione?

Parole chiave: smart working, lavoro a distanza, innovazione, Covid19.

1. SMART WORKING AND REMOTE WORKING: THE SUBJECT OF THIS STUDY

Alongside the drastic closure of many production sectors, the Covid19 emergency has forced a wide range of businesses to reorganize using the possibilities offered by ICT.

Private and, surprisingly, even public sectors have organized themselves with considerable speed, sometimes even circumventing certain legal constraints, to ensure the maximum possible performance by working remotely.

Employees, teachers, lawyers, consultants, and other professionals have, in fact, begun to coordinate online work among colleagues, users and customers, so as to be able to guarantee, at least in part, the performance necessary for their work.

This is a very profound change in work organization practices, which calls into question habits, pay assessment criteria, skill requirements, etc. (Bednar and Welch 2018, Murmura and Bravi 2021).

While the main underlying question is how profound and lasting this change will be, the first step to be taken will be a rigorous definition of the phenomenon.

With this aim, it is necessary to highlight that scientific literature shows no universally accepted theoretical grounds on this topic, for research in the past years mainly focused on specific aspects, such as «diffusion of technologies, work-life balance, work overload, autonomy and flexibility» (Corti 2018: 11), and failed to systematically consider the notion as a whole.

In mass-media parlance, in fact, as well as in everyday language, the most popular phrase is ‘Smart-Working’, i.e. the abrupt organization of certain production cycles, especially in the advanced tertiary sector, in such a way that the same tasks are carried out from the worker’s home – or from another location not coinciding with the workplace – as he or she did in the office.

By way of example only, I quote this definition of Smart Working, which implies «changes in approaches to work, work cultures, business architectures, premises, decision-making, communications, and collaboration» (Bednar and Welch 2019: 1).

It is therefore a very profound change in the productive organization and economic culture of a system that, in many social contexts, is still in an embryonic phase.

Smart Working is certainly a major change, especially from the point of view of the impact on the worker’s or employee’s life (cfr. Chiaro *et al.* 2015, Fan *et al.* 2022, Islam 2022, Pirro *et al.* 2022) and their performance (cfr. Bloom *et al.* 2013, Barrero *et al.* 2021, De Masi 2020).

However, in most cases, the adaptative strategies to health emergency do not involve changes in the contractual grading, tasks or hierarchical structure of the personnel involved; even the criteria for economic remuneration, where possible, do not change significantly.

It is, in fact, the same work and production organization as before the health emergency, the only difference being that a considerable part of the production activity is carried out remotely.

In such a situation, therefore, it would be correct to speak of Remote Work (RW) since a dematerialization of the workplace is certainly one of the requirements of Smart Working, but certainly not the only one.

The purpose of this study, on the other hand, is to examine the remote working phenomenon which, although easier to identify, implies very significant social changes (Boorsma *et al.* 2011), which in turn imply rather complex epistemic problems.

2. REMOTE WORKING: SOCIAL CONSEQUENCES

A massive spread of remote working could imply changes in the following areas:

a) *Work-life balance*¹

Remote Workers enjoy much greater autonomy than traditional workers (See Ambra 2018, Barrero *et al.* 2021, Islam 2022: 1) in terms of the pace at which they perform their tasks; if we add that travel time is practically eliminated, it emerges that those who work remotely have more free time at their disposal, as well as greater discretion as to when to enjoy it. The same applies to the spatial dimension (Choudhury 2021: 677): the workers themselves tend to be free to decide where to carry out their tasks; they can then choose from the various options available to them, the ones that best suit their needs and, why not, their mood at any given moment. As a very trivial example, a Remote Worker could choose to work from the nearest outdoor café in good weather or stay home if it rains. In this case, however, the risks of marginalization of the weaker categories that this type of flexibility entails should not be overlooked: in fact, it could be yet another pretext for forcing more women to stay at home, continuing to serve as caregivers, especially in certain areas particularly tied to traditional gender roles that remain almost exclusively on their shoulders (see Akhtar *et al.* 2016: 4, Pirro *et al.*

¹ Cfr. Adamson *et al.* 2013: 20, Bednar Welch 2019: 1, Gastaldi *et al.* 2014: 343.

2022: 537) furthermore, problems of socialization and work relationship might emerge (Bailey *et al.* 2015, Miele 2020: 8, Yang *et al.* 2022: 43)

b) Fuel Saving

The second order of advantages of Remote Working is its contribution to a faster transition toward a sustainable economy²: it is almost superfluous to point out that the reduced need to move from home to the workplace does not only mean a net saving of time for the worker but also, at a social level, a considerable saving of fuel, with all the positive consequences in terms of energy savings, reduction of emissions and improvement of air quality, especially in urban environments. From this perspective, however, there is another risk: remote working also incurs costs in terms of electricity use, connectivity, etc.; if these costs fall solely on the worker, the fuel savings could be greatly reduced; on the other hand, the employer would benefit from unjustified savings.

3. THE EXTENT OF THE PHENOMENON

It is therefore clear that the spread of remote working is important for social advancement towards a condition of social and environmental sustainability.

In this sense, it is necessary to understand first of all how much the phenomenon is widespread (RQ1); of course, given the global nature of objectives such as sustainability, it would be necessary to carry out a worldwide survey on the phenomenon; the time and space available in this study allow for an examination of the phenomenon only at EU level, based on the indicators provided in the Eurostat data bank³.

Using the aforementioned source, I drafted Table 1, which shows the percentage of workers who normally or occasionally perform their tasks remotely.

The data refer to the years 2019, 2020, 2021: I chose this time range because it can be used to identify the percentages of workers in RW before the pandemic, during the pandemic, and, hopefully, in its declining phase. The data refer to the percentage of workers who work remotely or on a routine basis or occasionally.

² See <https://magazine.unibo.it/archivio/2022/09/16/si-puo-misurare-lo-smart-working-i-risultati-del-progetto-201csmart-value201d>.

³ https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Employment_annual_statistics#Remote_work_disparities_by_country_and_level_of_education (data taken from the link on that page called 'source data for tables and graphs', see also https://ec.europa.eu/eurostat/databrowser/view/LFSI_EMP_A__custom_2496824/bookmark/table?lang=en&bookmarkId=b483e86d-726d-4c8b-b813-38b05b3df447).

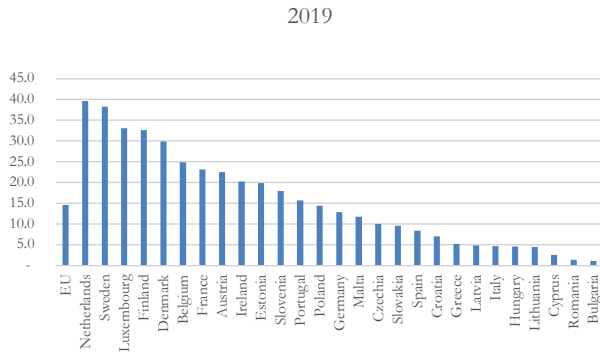
Table 1.

	2019 (sometimes or usually)	2020 (sometimes or usually)	2021 (sometimes or usually)	2021 (usually only)
EU	14.6	20.9	24.4	13.6
Netherlands	39.7	42.7	57.6	24.0
Sweden	38.2		47.3	27.7
Luxembourg	33.1	47.8	45.4	28.4
Finland	32.6	40.4	42.2	25.5
Ireland	20.3	32.6	40.6	33.0
Belgium	24.9	33.9	40.3	26.4
Denmark	29.9	36.9	37.7	18.9
France	23.1	29.8	34.8	17.3
Malta	11.8	26.0	29.7	15.1
Austria	22.5	29.8	29.0	16.2
Estonia	19.9	23.2	26.5	15.1
Portugal	15.7	22.8	26.1	14.5
Germany	12.9	21.2	25.2	17.3
Slovenia	18.0	20.1	23.1	10.6
Spain	8.4	15.2	15.5	9.6
Poland	14.4	18.2	15.4	6.9
Slovakia	9.5	11.6	15.0	6.6
Greece	5.2	10.4	14.9	6.7
Italy	4.7	13.7	14.8	8.3
Czechia	10.0	13.1	14.5	7.2
Lithuania	4.5	8.4	14.4	9.2
Latvia	4.8	6.1	13.6	11.0
Croatia	7.0	11.1	13.5	4.7
Hungary	4.6	11.0	13.4	4.6
Cyprus	2.5	7.4	12.8	6.7
Romania	1.4	3.2	6.6	2.4
Bulgaria	1.1	3.0	6.5	2.8

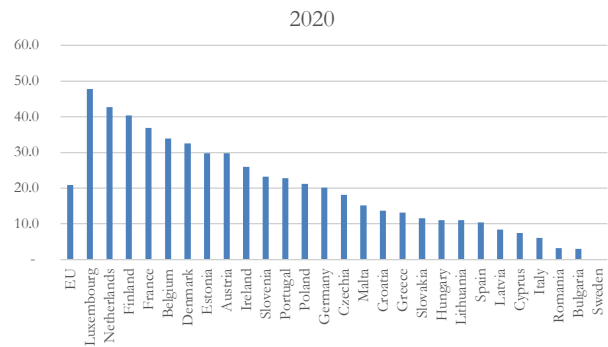
Source: author's elaboration on Eurostat Data.

To better understand the trend, I disaggregated the data, creating a graph that shows the year-by-year breakdown.

Graph 1 refers to 2019, a year that presents conditions of normality. Before the pandemic, in other words, we had a situation in which Northern Europe seemed to be more open to Smart working: of the countries that use it with greater intensity than the European average, only Slovenia and Portugal are from the Balkan or Mediterranean area, the others being and located in Northern Europe although in quite different social and cultural contexts; more precisely, and of the first five countries four are predominantly Protestant and all with a population below 10 million (or slightly above). This is not unlike the situation in other areas of social life, where countries with a Northern European Protestant tradi-



Graph 1. Source: author’s elaboration on Eurostat Data.

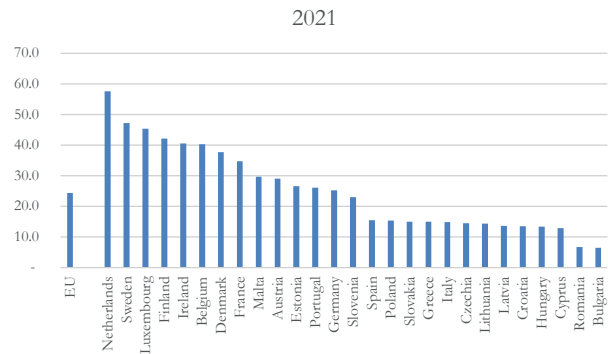


Graph 2. Source: author’s elaboration on Eurostat Data.

tion show a greater propensity for innovation than other areas of the Union⁴.

In 2020 (Graph 2) the pandemic began to unfold; many economic sectors organized themselves to avoid disrupting production or service provision despite the need for social distancing.

This change already emerges when looking at the European average: in one year, 15 to 20 percent of workers used some form of remote working. Also the individual values show a rapid adaptation to the emergency. In fact, if just a year earlier the maximum value corresponded to 40 percent, now the maximum value is 48 percent; the median value – the 14th – has moved from 12.9 percent to the 18.2 percent of the Czech Republic. The tail value also underwent a significant change, almost tripling from 1.1% to 3%. It should be noted that this does not denote great attitude changes towards remote working by individual countries, and they do not differ much in terms of ranking with respect to the previous year. Some exceptions, however, should be considered: Luxembourg increased its use of remote working from 33.1 percent to 47.8 percent, becoming the top country for the percentage of remote workers for that



Graph 3. Source: author’s elaboration on Eurostat Data.

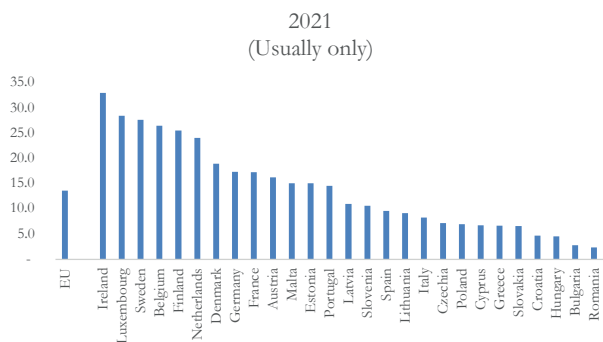
year; France also increased the percentage significantly, from 23.1 percent to 29.8 percent.⁵

In 2021 (Graph 3) the use of remote working increased further, as evidenced by the growth in the European average. Apart from a notable 57.6 percent from the Netherlands, there were no significant changes in terms of the relative position of the various countries, which mostly retained the ranking of previous years despite the fact that almost all of them saw significant increases in the percentage of remote working (apart from Austria and Poland, however, which saw a decrease in the percentage value of remote workers during this year).

It is impressive, however, to see how the situation changed if, in 2021, we consider the percentage of those who work remotely on a routine basis (Graph 4) rather than, as we have seen in the previous graphs, indifferently on a routine or occasional basis. We see here that the first country to adopt remote working is Ireland, while the Netherlands does not reach 24 percent from the 58

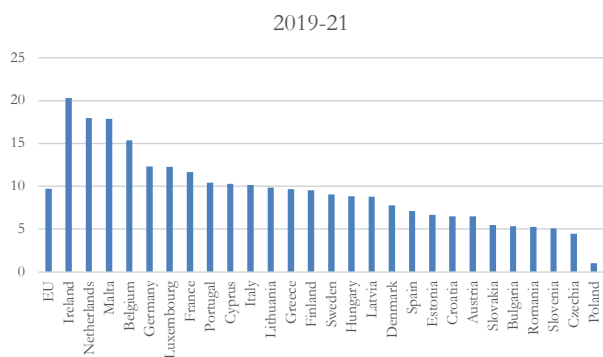
⁴ «Behind that measurement of innovation performance there might exist a scenario in which the Protestant legacy consists of a set of values that make social actors eager to use the social wealth – including also the general intellect, the educational system and scientific infrastructure – to produce more wealth. Although the general social advancement of society is not an effect foreseen in a religious context that mainly focuses on reducing laziness and irrationality, this deeper layer of the culture in Protestant countries fits the generic statements about the immeasurable benefits of the advancement of science and the benefits of progress. Although those sentiments are also commonly shared in countries where the religious tradition is different, their accomplishment meets obstacles at a deeper level, for example, where Catholics tend to stress the importance of emotionally positive links with one’s neighbors rather than the individual engagement in material activities» (Ruzzeddu 2017: 173).

⁵ The figures for Sweden are missing for this year.



Graph 4. Source: author’s elaboration on Eurostat Data.

percent who had considered it as an occasional possibility.



Graph 5. Source: author’s elaboration on Eurostat Data.

Ireland’s tremendous progress in terms of remote working also emerges from Graph 5, which shows the percentage change from before and after the pandemic. In this table, Malta also appears to have used this option a great deal during the pandemic, while other countries, while generally in a growth trend, did not change their ranking position.

Based on the findings so far and the data provided by the European Union, it is possible to reply to RQ1:

The use of RW in the EU has grown considerably with the pandemic, from 14.6 to 24.4. However, there are many differences in the use of this instrument within the Union itself, which do not change significantly even at the end of the observation period.

In this sense, the enormous growth of RW in Ireland could hardly be explained by an increase in the propensity to innovate within the country.

Indeed, we have seen that the primacy of RW adoption emerges only when examining the overall increase through the pandemic years, but especially when considering the rates of remote work as a routine rather than a mixed routine and occasional mode, as shown in Graphs 1, 2, 3 and 4.

Despite what one might think, this situation does not depend on a systematic acceptance of RW but, on the contrary, on a reaction to an emergency situation.

Indeed, as much of the literature shows (ref.), however useful it may be, SW can only partially replace face-to-face interaction between colleagues.

The need to share confidential information, the training needs of new employees, and also the need for sociability expressed in informal moments (lunch break, coffee break, etc.) imply that an organization can best manage its performance only by alternating moments of working from home with moments of collective engagement in the workplace.

Now, we obviously do not have data available for this, but it is reasonable to speculate that whoever introduced RW-based forms of work may have opted for more flexible models, as these forms of experimentation probably occurred before the health emergency was unleashed.

On the contrary, massive recourse to RW, such as that of Ireland, where the remote mode excluded all others, seems dictated by the urgent need to continue production, where possible, while maintaining the social distancing necessary to combat the pandemic.

Certainly, as all indicators show, Ireland has taken many steps toward a capital-intensive economy and a ‘smart’ social organization. This partly explains the data collected here; however, one cannot imagine that Ireland’s case is an example of structural innovation due to the pandemic.

These considerations lead to RQ2: is the introduction of RW only a consequence of the pandemic, or does it depend on a propensity for innovation?

4. RW AND INNOVATION

To respond to RQ2, we must measure the levels of innovation within the European Union. An effective tool in this regard is the *European Innovation Scoreboard* (2022)⁶.

The European Innovation Scoreboard 2022 is an interactive tool that matches innovation indicators in 5 groups; 1 to 4, are reported as Performance relative

⁶ <https://ec.europa.eu/research-and-innovation/en/statistics/performance-indicators/european-innovation-scoreboard/eis>

to EU in 2015 = relative performance calculated based on time series of normalized scores, whereby the average EU performance in the year 2015 is set as 100. Data about the structural indicators of group 5 are available for the most recent year and show the real values, thus not relative to the EU. The five groups of indicators are⁷:

Group 1, comprising:

- a) Human Resources (Amount of Doctorates and Second Level Degrees)
- b) Attractiveness of Research Systems (International Scientific Publications and Foreign Doctoral Students)
- c) Digitization (Broadband Penetration)

Group 2, comprising

- a) Indicators on public investment in R&D
- b) Indicators on private investment in R&D
- c) Use of ICT

Group 3, comprising

- a) Product or process innovations among SMEs
- b) Transfers of knowledge/workers between the public and private sectors
- c) Use of patents, trademarks and processes.

Group 4, comprising

- a) Employment impact indicators
- b) Sales Impact Indicators
- c) Environmental sustainability indicators

Group 5, comprising

- a) Economic indicators
- b) Demographic indicators⁸

To determine whether the introduction of SW depends on a propensity for innovation, or whether it is a consequence of the Covid emergency, I created a series of correlations between the percentage of RW use in each country, and the corresponding level of innovation.

The basic idea is that a high correlation indicates that a possible increase in RW is linked to a high propensity to innovate.

However, it must be remembered that the correlation does not necessarily mean a causal relationship, and specifically, a high correlation between the two sets of variables, does not necessarily mean that the introduction of SW implies a high propensity to innovate.

In fact, we must bear in mind that, as we have seen above, innovation propensity in the EU is very variable: in fact, very high correlation values indicate that where there has been a high rate of RW, there is also a high rate of innovation; the same applies to low values in the inverse sense.

⁷ In fact, each group consists of other sub-indicators, which in turn consist of a variable number of various indices. The classification of indicators and sub-indicators is my interpretation.

⁸ This set of values is not displayed in the database.

Table 2.

Country	2019 Value	2020 Value	2021 Value
AT – Austria	128.22	127.57	128.59
BE – Belgium	127.15	137.86	137.15
BG – Bulgaria	48.53	46.52	46.68
CY – Cyprus	84.12	108.85	111.47
CZ – Czechia	86.81	89.78	90.01
DE – Germany	123.25	129.98	130.91
DK – Denmark	138.46	145.48	147.67
EE – Estonia	98.99	112.05	118.70
EL – Greece	74.66	80.96	84.46
ES – Spain	95.50	93.18	92.08
FI – Finland	136.25	138.57	141.41
FR – France	117.13	115.76	116.82
HR – Croatia	62.08	69.02	71.06
HU – Hungary	68.93	71.27	73.76
IE – Ireland	125.63	121.98	122.99
IT – Italy	90.93	102.10	103.56
LT – Lithuania	84.04	83.64	85.65
LU – Luxembourg	132.99	132.65	130.78
LV – Latvia	54.23	56.58	56.56
MT – Malta	98.68	108.18	97.62
NL – Netherlands	140.40	138.90	140.10
PL – Poland	59.54	59.93	62.18
PT – Portugal	97.21	88.96	92.22
RO – Romania	33.62	38.37	38.74
SE – Sweden	141.92	147.61	147.38
SI – Slovenia	93.42	95.97	99.68
SK – Slovakia	67.56	66.01	66.13
Media	96.67	100.29	101.27

Source: author's elaboration on Eurostat Data.

In fact, the data show exactly this: I have, in fact, collected, also for the years from 2019 to 2021, a correlation between the rates of RW adoption and the rate of innovation in each country.

Tables 2 show that innovation propensity in the years of the pandemic has slightly improved. The European average rose from 96.7 in 2019 to 100.29 in 2020 and then 101.27; this reflects perfectly the changes in the use of RW within the Union, (Table 3) given that the two variables have a correlation of 0.99%.

To explore in greater detail the relationship between RW use and innovation, I measured the correlation coefficient between the two variables, the values of which were again provided by official European sources, disaggregated by country.

However, the correlations between national innovation rates, on the one hand, and RW adoption, are very

Table 3.

<i>RW in EU</i>	<i>Innovation</i>
14.6	96.67
20.9	100.29
24.4	101.27
<i>Corr.</i>	0.9877822

Source: author's elaboration on Eurostat Data.

Table 4¹.

	2019	2020	2021
SW/ Innovation	0.8656111	0.8552783	0.8519423
SW/HR	0.8298598	0.8187385	0.8700366
SW/Res Sys	0.8694006	0.8924412	0.8834608
SW/Digitalisation	0.7737908	0.786585	0.8181441
SW/Fin Supp	0.7698957	0.649936	0.6370478
SW/Firm Invest	0.5691295	0.5514864	0.5837906
SW/ICT use	0.841334	0.8563883	0.849474
SW/Innovators	0.5210606	0.3203076	0.3710619
SW/Linkages	0.7719991	0.6963614	0.6855703
SW/Intell assets	0.6438602	0.7044083	0.6480218
SW/Empl. impact	0.7252232	0.6215101	0.6762989
SW/Sales impact	0.3313912	0.4308297	0.4889271
SW/Envir Sustain	0.3643498	0.5154555	0.4985419

¹ The Innovation-related value does not reflect disaggregated variables, since it also includes Group 5 values.

Source: author's elaboration on Eurostat Data.

high: over the three years, the correlation has values greater than 80 percent.

Disaggregating the data shows that all sub-indicators have a positive correlation with RW adoption; the highest correlation (>0.8%) was with HR and Research investment propensity, as well as, of course, in ICT adoption.

The other sub-indicator categories have, in fact, weaker correlation, albeit positive.

5. CONCLUSIONS

To conclude this brief review of data, we can conclude the following: the COVID pandemic has certainly contributed a lot to the spread of RW throughout the European Union, enabling several economic sectors to avoid interrupting their operations due to social distancing. However, the use of this labor practice is highly unequal throughout the EU Member States. This ine-

quality, as revealed by the comparative data, is significantly dependent on the propensity to innovate.

In fact, it emerged that the greater the propensity to innovate, the greater the use of Remote Working, with a particularly high correlation for those dimensions of the propensity to renew relating to advanced training and investment of human resources.

However, despite this positive correlation, during the pandemic, the relative differences between individual countries have not changed, with the countries of Northern Europe tending to be more innovation-driven than those of Southern and Eastern Europe.

We can therefore infer that the ascertained increase in the adoption of remote working in Europe was mainly due to the need to cope with the emergency, without this translating into significant changes in the organization of production and the introduction of new technologies. However, it should be reiterated, as seen before, that the countries with the greatest innovation propensity are characterized by relatively small populations (around 10 million or less) and predominantly those with Protestant traditions.

The latter finding, in particular, invites broader considerations.

It is now accepted in sociology theory that innovation, both social and technological, has a rather strong cultural component (Etzkowitz 2008), which can determine the success or failure of a given change, especially if decided at the political level.

It should be reiterated, however, that culture consists not only of visible artifacts or easily identifiable customs but also of a deeper level of which social actors are generally unaware. This level, according to certain theoretical approaches, consists of assumptions regarding the «nature of reality, time, space, human nature, and human relationships» (Schein 2004). Specifically, if in a given social context the idea of time consists of representations of evolution and progress, an environment conducive to a process of innovation will emerge. Conversely, in a society where a static or involutory idea of time prevails, any kind of innovation, whether technological or social, will be met with extreme distrust if not hostility.

Now, there are a number of contexts where representations of time are decidedly regressive: especially in countries that in the past saw the triumph of the Counter-Reformation and religious orthodoxy, the idea of a predominantly negative conception of change (and, of course, social change) seems to prevail, in keeping with the idea of an inexorable process of decay caused by original sin and the inexorable transience of the mate-

rial world, a pale reflection of divine perfection, and destined in any case to apocalyptic destruction.

We can easily imagine, then, that in cultural contexts such as the one just described, a social change such as the transition to Smart Working could generate uncontrollable forms of distrust, if not fear, among social actors, and thus cause a certain overt resistance toward such a form of innovation.

REFERENCES

- Adamsone I., Baltina, Judrupa I., Senfelde M., Vitola A. (2013), *Overview on the Smart Work L. Centres in Europe*, working paper.
- Akhtar P., Moore P. (2016), «The psychosocial impacts of technological change in contemporary workplaces, and trade union responses», in *International Journal of Labour Research*, 8-1-2: 101-131.
- Ambra M. C. (2018), «Dal controllo alla fiducia? I cambiamenti legati all'introduzione dello 'smart working'», in *Labour and Law Issues*, 4-1: 20-39.
- Bailey D. E., Dailey S. L., Leonardi P. Nardi B., Diniz E. H. (2015), «Socializing Remote Workers: Identification and Role Innovation at a Distance», in *Academy of Management Annual Meeting Proceedings*, (1): 18612-18612.
- Barrero J. M., Bloom N., Davis S. J. (2021), «Why Working from Home Will Stick», in *NBER Working Paper*, 28731.
- Bednar P. M., Welch C. (2018) «Balancing Stakeholder Interests: Socio-Technical Perspectives on Smart Working Practice», in Elbanna A., Dwivedi Y. K., Bunker D., Wastell D. (a cura di), *Smart Working, Living and Organising* IFIP WG 8.6 International Conference on Transfer and Diffusion of IT, Proceedings, Springer Nature Switzerland AG, TDIT Portsmouth, UK.
- Bednar P., M. Welch C. (2019), «Socio-Technical Perspectives on Smart Working: Creating Meaningful and Sustainable System», in *Inf Syst Front*, 22: 281-298.
- Bloom N., Liang J., Roberts J., Ying Z.J. (2013) «Does Working from Home Work? Evidence from a Chinese Experiment», in *NBER Working Paper*, 18871.
- Boorsma B., Mitchell S. (2011), «Work-life innovation smart work. A paradigm shift transforming how, where, and when work gets done», in *Cisco IBSG Point of View*, accessed Dec. 2022 at https://www.cisco.com/c/dam/en_us/about/ac79/docs/ps/Work-Life_Innovation_Smart_Work.pdf
- Chiaro G., Prati G., Zocca M. (2015), «Smart working: dal lavoro flessibile al lavoro agile», in *Sociologia del lavoro*, 138, 2: 69-87.
- Choudhury P., Foroughi C., Larson B. (2021) «Work-from-anywhere: The productivity effects of geographic flexibility», in *Strat Mgmt J*, 42: 655-683.
- Corti F. (2018), *Smart Working. The impact of new ways of working on leadership. A literature review*, accessed feb. 2023 at https://thesis.unipd.it/bitstream/20.500.12608/25150/1/Corti_Franco.pdf.
- De Masi. D. (2020), *Smart working La rivoluzione del lavoro intelligente*, Marsilio, Venezia
- Errichiello L., Pianese T. (2018), «Smart Work Centers as "creative workspaces" for remote employees», in *CERN Idea Square Journal of Experimental Innovation*, 2(1): 14-21.
- Etzkowitz H. (2008), *The Triple Helix. University-Industry-Government innovation in action*, Routledge, New York.
- Eurofound and the International Labour Office (2017), *Working anytime, anywhere: The effects on the world of work*, Publications Office of the European Union, Luxembourg, and the International Labour Office, Geneva.
- Fan W., Moen P. (2022), «Working More, Less or the Same During COVID-19? A Mixed Method, Intersectional Analysis of Remote Workers», in *Work and Occupations*, 49(2): 143-186.
- Gastaldi L., Corso M., Raguseo E., Neirotti P., Paolucci E., Martini A. (2014), «Smart working: Rethinking work practices to leverage employees' innovation potential», Conference paper for 15th *International CINet Conference, Operating Innovation - Innovating Operations At: Budapest, Hungary*.
- Islam A. (2022), «Work-from/at/for-home: CoVID-19 and the future of work- A critical review», in *Geoforum*, 128: 33-36.
- Miele F., Tirabeni L. (2020), «Digital technologies and power dynamics in the organization: A conceptual review of remote working and wearable technologies at work», in *Sociology Compass*, 14: 1-13.
- Murmura F., Bravi L. (2021), «Digitization and Sustainability: Smart Working as an ICT Tool to Improve the Sustainable Performance of Companies During the Covid-19 Pandemic», in Kumar V., Rezaei J., Akberdina V., Kuzmin E., (a cura di), *Digital Transformation in Industry Trends, Management, Strategies*, Springer Nature, Switzerland.
- Pirro F., Toscano E., Di Nunzio D., Pedaci M. (2022), «When school 'stayed home'. A sociology of work approach on the remote work of teachers during the lockdown for the COVID-19 pandemic: the case of Italy», in *International Review of Sociology*, 32-3: 529-540.
- Raguseo E., Neirotti P., Paolucci E., Gastaldi L., Corso M., Martini A. (2014), «Towards a Smarter Work?

Unpacking Complementarities between ICT Adoption, Human Resource Practices and Office Layout», Conference: 9th International Forum on Knowledge Asset Dynamics (IFKAD) *Knowledge Management Models for Sustainable Growth*.

Ruzzeddu M. (2017) «Innovation between economy and culture», in Folloni A., Narro A., Pitasi A., Ruzzeddu M. (a cura di), *Inventing the future in an age of contingency*, Cambridge Scholars Publishing, Newcastle Upon Tyne.

Seibt D., Schaupp S, Meyer U. (2019), «Toward an Analytical Understanding of Domination and Emancipation in Digitalizing Industries», in Meyer U., Schaupp S., and Seibt D. (a cura di.) *Digitalization in Industry – Between Domination and Emancipation*. Palgrave, pp. 1–25, London – New York.

Yang L., Holtz D., Jaffe S., Suri S., Sinha S., Weston J., Joyce C., Shah N., Sherman K., Hecht B., Teevan J. (2022), «The effects of remote work on collaboration among information workers», in *Nat Hum Behav*, 6(1): 43-54.