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OVERVIEW ON ECONOMIC AND LEGAL ASPECTS OF SMART WORKING – THE CASE OF THE ITALIAN PUBLIC ADMINISTRATION

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Executive Summary

Introduction

In recent years work practices have changed radically. Organizations are developing ways to optimize work configurations and to eliminate inefficiencies and set up flexibility in times and spaces. In this scenario, scholars started to talk about teleworking, a digital new phenomenon that predicted the possibility to work by home. Consequently, teleworking was updated in a more flexible conception: the Smart Working (SW). This new approach guarantees flexibility in the workplace (no more working by home but wherever, if outside the office), in the timetable and work instruments. The main concept is the job based on objectives and digital devices.

The Italian situation is wide and is differentiated among the three main productive categories: Big Enterprises, Small and Medium Enterprises, and Public Administration. These classes differentiate in the penetration rate of SW, in reasons behind the decision of introduction, the advantages and disadvantages that the establishment produces internally.

This working thesis investigates SW on different approaches through the study of data and papers. The objective of the analysis is, at most, the public administration that I will explore through different viewpoints and tools. After the analysis of data and of the main legislative reforms that interested the smart working application in all the Italian territory, I will present a survey on public workers to obtain a general overview of the situation inside the Italian public sector.

The work is carried on in a particular historical period, that of the Covid-19 pandemic. This event has slightly modified the research and the structure of the initial hypothesis of my work. The pandemic created an extraordinary scenario in which the SW penetration rate drastically increased. Moreover, the lockdown period doesn't allow me the possibility to widely consult books and libraries, that is why, the main sources are online journals and online articles, besides the classic databases like Istat and Eurostat.

In the year 2019, the SW growth rate respect the previous year was 20%. The increase in implementation is mainly justified by workers' satisfaction on a better work/life balance and a better organization of work. The numbers will be analysed in the first chapter.

Considering that SW is implemented through software, data platforms, and digital tools, its diffusion is directly connected to the concept of digitalization of the Italian market. In the year 2019, the Italian access to broadband was 74,3% and the use of the internet consisted of 67,9%. The second chapter will deeply show the digitalization of each sector and the detail for what functions and practices are mainly exploited by internet connections.

Generally speaking, the Italian public sector is characterized by a low rate of digitalization and general backwardness. It has difficulties in attracting human resources and is characterized by a lack of

transparency and flexibility. The InCise index will show the comparison among other European Countries based on various indicators.

In order to update Italian institutions, on the 7th August 2015 Government announced the Madia Reform, with the objective of SW introduction in the Italian Public Administration. It followed law drafts that regulated the implementation with some specific Directives. The final output was the promulgation of the Law n.81 on the 22nd of May 2017. The relevant articles, (from number 18 to 24). will be deeply analysed in the second chapter of this working paper. The main objective is to advise employers and employees on how to behave and to protect them from liabilities by underlining who bears the various responsibility. In addition to Law n.81, Italian regulation gives high power to collective bargaining. In summary, each enterprise can customize needs through private agreements.

Several are the information concerning private enterprises, much higher than that regarding the public sector. That is why, in 2017, The Smart Working Observatory of Milan decided to investigate the level of SW adoption in the Italian public institutions. For a general overview, it results that in the year 2019 total smart workers were 570 thousand, the higher percentage were men from the North-West of the Country and aged on average 48 years. The agile population divided into who implements smart doing "Sometimes" and who "Usually" works from outside the office. On the European overview, Italy places at the bottom of the ranking for the "Sometimes" usage and in the middle for the "Usually" utilization.

Therefore, my empirical study will continue on the investigation of the Italian Public Administration. Data will show the backwardness of the Italian public sector, respect the other product segments and European public services. In the year 2019, The SW penetration rate in the public sector was the lowest but also the only one that mainly grew up respect the previous year (+8%). This means that public administration has the potential to grow, but it will be necessary a drastic shock of change both in organizational design both in ways of thinking and acting.

Later, my investigation will study the worker-side effects of implementing SW in public offices. In order to reach the highest number of respondents, I created an online questionnaire, composed of 25 questions, where workers could have access only by opening a link that I sent through message or email. The questionnaire has been conducted in anonymous form, in order to better guarantee honest answers and has been mainly addressed to subordinated employees who were required to assess their performance and feelings, respect various dimensions. Among those, I investigated the awareness on SW before the coercive introduction and how many workers had already exploited it before, their perception on productivity, the change in work-life balance before and after the introduction, also related to their welfare and satisfaction, the change in commitment to the company and the difficulties workers have had in working from home. All these aspects have been investigated through different types of questions (multiple choices, Likert scale and open answers). Successively, I have collected answers in graphs to better show results to the reader.

The general scenario is that my investigated cluster appreciated SW with an increase in productivity's perception. Respondents declared to work more hours but, despite that, to have had free time as much as in work office times. The advantages are the enjoyment of a more comfortable environment, fewer interruptions from colleagues, and less stress for moving. My investigated cluster mainly reflects the female population of the centre of Italy, aged more than 50. Their answers on needs and difficulties have been mainly related to the technology and the support on the utilization of informatic tools.

On reflection, in the Covid-19 scenario it has been more difficult to work from home, people found themselves suddenly locked in houses without the possibility to acquire paper documents and to organize their work from the office. Also for that reason, a part of the investigated workers, showed their discomfort in working by home and would prefer moving toward the office.

To summarise, besides considering these drawbacks, the majority of respondents will reveal satisfaction on the SW implementation. All that remains is to wait and verify how many of them will confirm they wish to work agilely.

CHAPTER 1

The economic value of smart working: an Italian and European overview

1.1. Diffusion of Smart Working in Italy

Except for the emergency period linked to the Covid-19, in which Smart Working (also named agile working) has been introduced forcibly among all the organizations and enterprises, the Smart Working is a new wave to work already required by Law 81/2017.

According to the *2019 Smart Working Observatory of School of Management of Polytechnic of Milan*, the total number of smart workers in Italy are about 570[1] thousand, with a growing rate of 20% compared to the year 2018, in which there were about 480.000[2] Smart Workers, equal to 12,6% of total employed. Among these numbers, there are considered all the Italian workers: Big Enterprises, Small and Medium Enterprises and Public Administration.

All these sectors have registered expansion, in particular[3]: Big Enterprises had revealed growth of 2% respect the year 2018; Small and Medium Enterprises had registered a development rate of 4% respect the year 2018; Public Administration is the sector with the higher growth rate in the years considered, in fact it has doubled the introduction of smart working with a rate of 8%.

The reasons to introduce the Smart Working could be several and could differ on the type of enterprise, the number of workers, the type of activity, etc.

The main patterns on the choice of smart working could be summarised in a better balance between work and private life, freedom, sharing and satisfaction of better work environment and cooperation, advantages for workers and heads, innovation support in the company, saving on costs and time, better performance and productivity.

By analysing in detail the single enterprises and the reasons that could lead them to this choice, it is possible to find out some common points but also some differences.

[1] Digital observatory polytechnic of Milan, 2019.

[2] Digital observatory polytechnic of Milan, 2018.

[3] ZeroUnoWeb Editorial Staff,,2019.

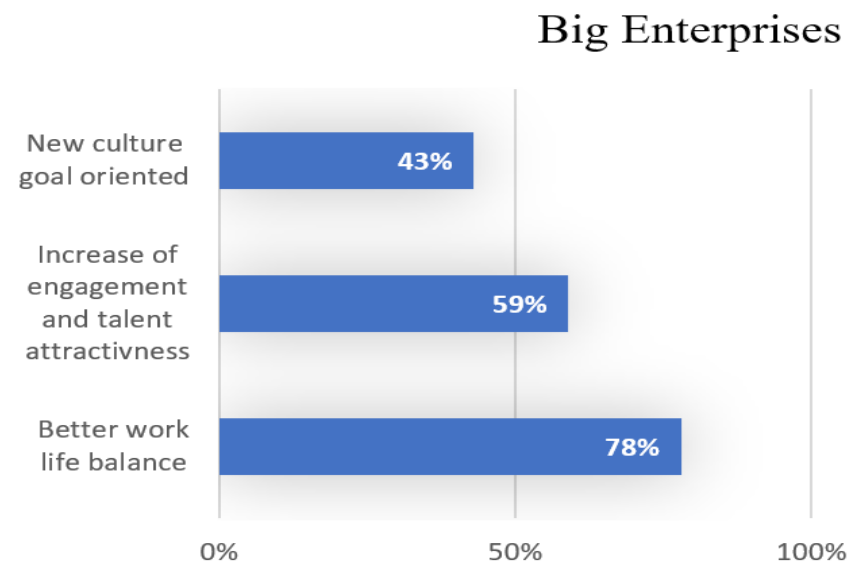


Figure 1- Big Enterprises, reasons for SW introduction

Big Enterprises mainly decided to introduce smart working to improve the lifestyle of workers, specifically in guaranteeing a better balance between work and private life. The second reason why is the wish to improve the involvement and to attract more talents. The last cause is the willingness to modify and better the internal culture of the organization, more digital-oriented and, accordingly, more goal-oriented.

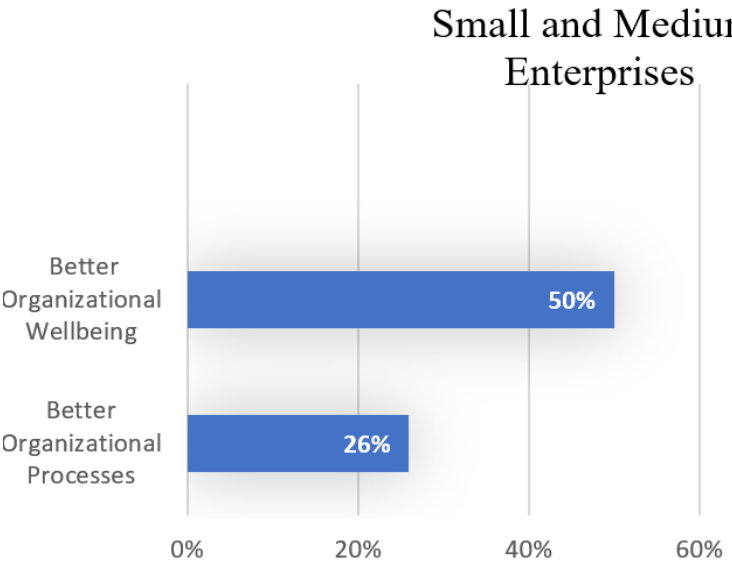


Figure 2- Small and Medium Enterprises, reasons for SW introduction

The analysis on Small and Medium Enterprises lead to the identification of just two goals: the improvement of organization welfare (in this cluster could also be considered the desire to digitalise the internal culture, to motivate employees etc.), and the idea to act on organizational processes. For a few interviewed (26%), the introduction of smart working could be viewed as a way to developpe the digital

competences of the organization and, accordingly, to work more efficiently, bettering communication, sharing information and avoiding waste of time.

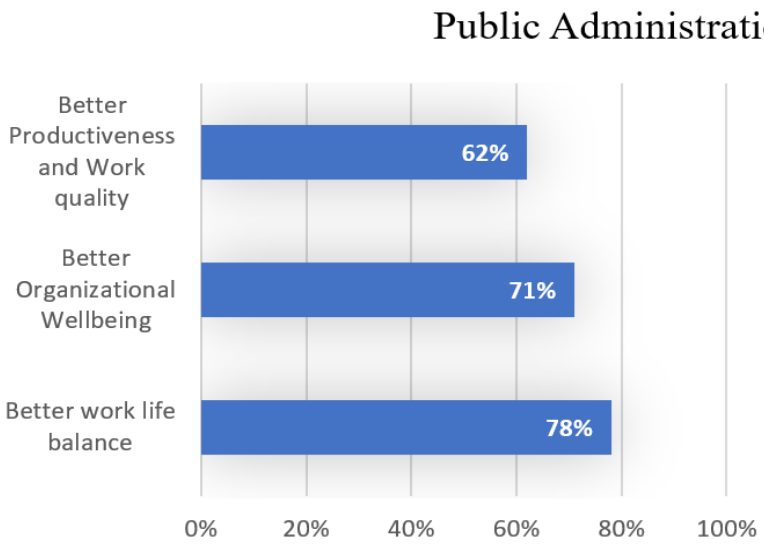


Figure 3 - Public Administration, reasons for SW introduction

The introduction of smart working into the Public Administration is a process that requires more time because it is based on a more detailed regulation and more complex processes. That is why, nowadays, the process is slower and not widespread. Anyway, the survey on different public offices revealed three reasons highly common among the interviewed subjects. The public sector showed the willingness to better the productiveness, the organizational welfare and the work-life balance of workers on a mean of 70%.

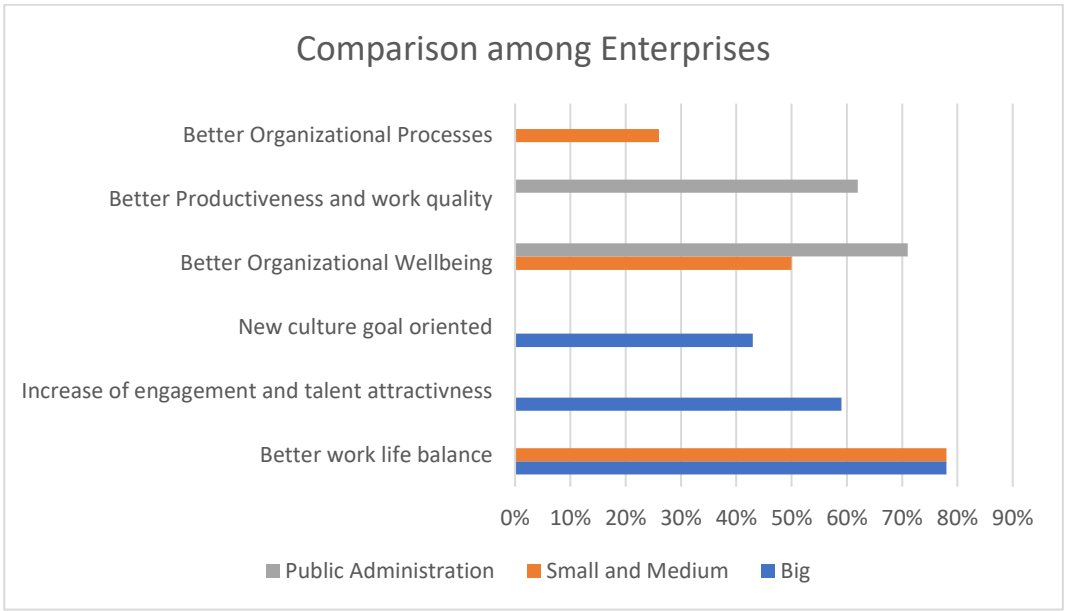


Figure 4 - Comparison among Enterprises

By comparing the previous three graphs, and putting on the same chart the results of the analysis it is possible to get some considerations: i) there are no shared reasons by all the three segments analysed;

ii) the wish to improve the work-life balance of worker, covers the higher percentage of the interviewed (78%) and is shared by Big and Small and Medium Enterprises; iii) the second shared cause of the introduction of smart working, is the wish to better the organizational wellbeing, even if, for the Public Administration (71%) is higher than for Small and Medium Enterprises (50%).

Beyond these observations on the rationale behind the introduction of agile working into enterprises, the 2019 Smart Working Observatory carried on a deep analysis of 84 Big Enterprises to evaluate the impact of the introduction on several variables.

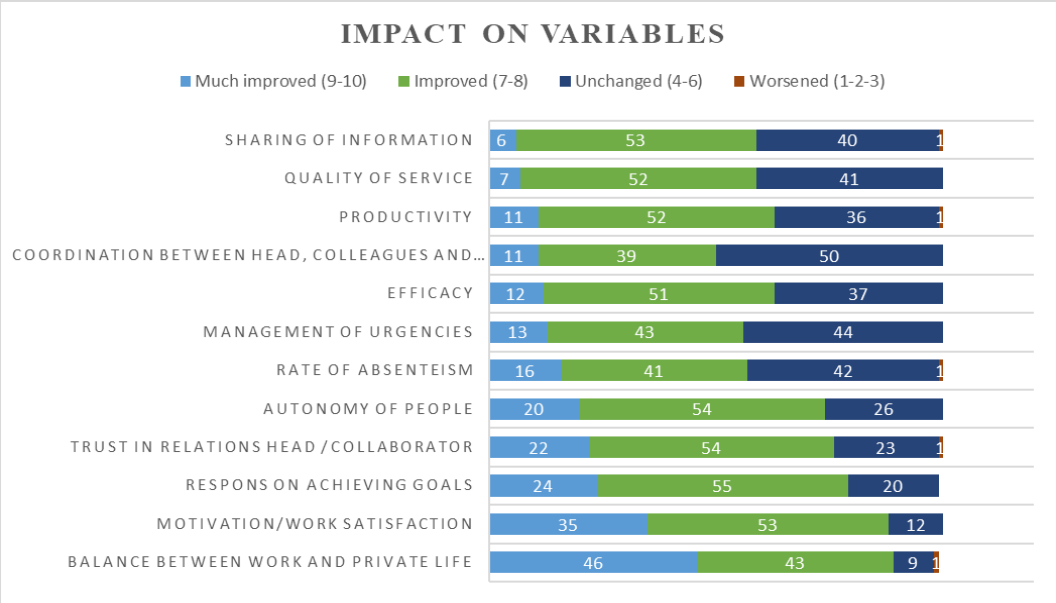


Figure 5 - Impact on Variables

The graph shows all the factors that were taken in analysis and the results on a range of 100.[4] In particular, Big Enterprises were asked to answer on a scale of evaluation from 1 to 10, on how the variables changed with the introduction of agile working. The results are shown in the figure before, in value %.

The Observatory summarised the values in four different ranges.

Who answered with 9 or 10, considered really better the analysed variable with the smart working. From the graph, the condition that significantly improved is the "balance between work and private life" (for the 46% of Enterprises). Only the 6% of Big Enterprises, instead, considered much improved the "sharing of information".

The range most used in the answers is that of values 7 and 8, this corresponds to the consideration of a better result, but not so relevant. In that group, the majority of variables were considered upgraded. For almost all the factors, the 50% of answers reflect an improvement, except the "Coordination between the head, colleagues and external", which was considered improved only by the 39% of surveyed.

[4] Bulgarini d'Elci Giuseppe, 2020, pp. 12-13.

The third range 4-6 registered a varied number of responses with the answer "Unchanged". That covers a different percentage of answers from the 9% related to the "balance between work and private life", the 12% to "Motivation /work satisfaction", and a maximum percentage of 50% of respondents to the "Coordination between the head, colleagues and external".

The last range that was taken into consideration corresponds to values 1-2-3. In that case, who answered with these numbers, considered the introduction of smart working a drawback for some variables. The graph shows that only 1% of people claimed on the agile working and just on some specific aspects of work-life: "balance between work and private life", "Trust in relations head/collaborator", "Rate of absenteeism", "Productivity" and "Sharing of information".

1.1.1. Italian digital market and digital life-place

The Italian digital market is growing gradually during the years, mainly driven and inhibited by[5] various aspects such as Macroeconomic and geopolitical scenario, Government policies, Business trends in the main sectors, ICT Offer and Technological scenario.

All the paths of digital development are correlated with word dynamics from those standards (Big data, Cybersecurity) to those not fully demonstrated (Blockchain). All the experimental processes are aimed to increase efficiency in business solutions and are used and spread through sectors and market segments (Banks, Utilities, Telecom etc.).

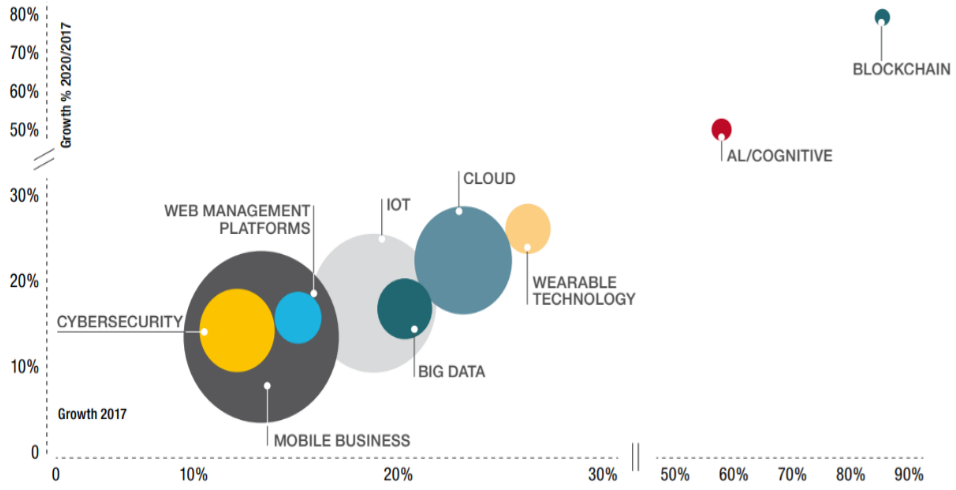


Figure 6 - Digital market trends in Italy

[5] Assinform, 2016.

The figure shows the market trends among the key Digital Enablers in Italy.[6] On the X ass is registered the growth rate in 2017, on the Y ass the graph forecasts value for the year 2019 and 2020 (being the article published in 2018).

Values are considered in percentage and, as it is possible to see, the areas with high relevance are mainly four: "Mobile Business" in 2017 was an area of investment of 3.5 billion euros but is estimated to grow at 11,3% for 2017-2020. All these types of applications are considered able to transform organizational and process schemes and, accordingly, the business models; "IOT" was a segment which covered in 2017 2,5 billion euros and was expected to reach 16,7% in 2017-2020. This aspect is strategic for a lot of sectors such as Industry, Insurance, Healthcare, Transportation etc; "Cloud" was a segment of 1,861 million with an estimation of growth till 21,8% for 2017-2020. In the analysis of this sector, there could be some external drawbacks such as the limited access to broadband networks; "Blockchain" is a really growing market with esteem of growth of 90 to 100 million by 2020.

As we already said, the digitalisation of the Italian market is growing gradually throughout the years, even if with a slow trend. The aspects that should be analysed are different, even if all related to each other: I) The broadband access, II) The rate of use of the internet, III) The type of devices used, IV) The type of services used, V)The digital knowledge of users.

In 2019, the Italian population that has the possibility of broadband access (fixed and mobile), has increased by 1% respect the year 2018, which was 73,7%[7]. Actually, the growth rate of the years 2017 and 2018 was higher, so the increase in access in 2019 slowed down.

By analysing more deeply the broadband access, it is possible to assert that the gap between regions has decreased by 2,5%. Only in Umbria and in Liguria exceed the rate of 5% of the population that declares to not have the possibility to access the broadband. The economic reasons cover only 9,8%, instead the main rationale is the inability to use the Internet, with a peak of 65% in Molise and an Italian mean of 58,4% equally distributed among all the Italian Regions[8].

In 2019 the rate of use of the Internet was 67,9%, with a slow increase of 1,5% respect the year 2018. On the contrary, the daily use of the Net considerably increased from 51,3% to 53,5%.[9] The use of the Internet and, the broadband access, is highly correlated with two main factors[10]: The age of family's members (almost the totality of families with a minor use broadband access) and the qualification (for example a degree: the percentage of graduated of 54-73 years and of 23-34 years who serf on the net is about 88%)[11].

[6] Anitec- Assinform, 2018.
[7] Istat, 2019.
[8] Istat, 2019.
[9] Istat, 2019.
[10] Iacono Nello, 2019.
[11] Istat, 2019.

In addition, in a broader context, the PISA[12] survey shows that about 5% of students in all OCSE Countries, on average, have no access to the Internet and those who access, spent at least three hours per day.

The third aspect that has been analysed by ISTAT is the type of devices used by the Italian population. To summarise the findings: the use of smartphones covers 91,8% of the population but, the Italians who use more frequently the Net are used to access multiple devices (Tablet, Pc, Smartphone).

As regards the type of services exploited on the Internet, it is possible to summarise the findings on the following graph[13]:

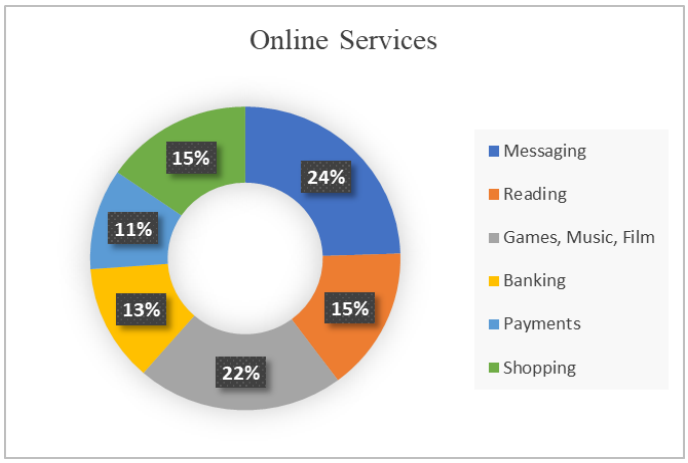


Figure 7 - Online Sevices

The main use of the Net is related to the messaging and to the entertainment, on the contrary, the littlest use is for online payments.

As regards the level of digital knowledge of the Italian population, it is likely to divide inhabitants into four categories[14], according to the competences identified: Foundation (simple tasks), Intermediate, Advanced and Highly specialised.

This overview is limited only to the users of the Net, for that reasons all that are not considered in this analysis are under the "foundation" level.

In particular, the percentage rate of population with at least a basic level of digital competences is about 39%, even if there could be some variations based on age and instruction. The maximum level of percentage is reached by 20-24 years (67%) and the minimum level by 65-74 years (15%). Generally speaking, it is possible to assert that the level of Italian population on digital competences is quite low.

The most important information regards the youngest generation: only 45% of 20-24 years older who access the internet have a high level of digital competences.

[12] Schleicher Andreas, 2019.
[13] Iacono Nello, 2019.
[14] Carretero S., Vuorikari R.,Punie Y, 2017.

The present pandemic period gives us the possibility to identify the real digital conditions of Italy: Tim declared a doubling of traffic on the fixed network, a 20%[15] increase on the mobile network and a high increase in voice traffic.

The data analysed before (i.e. the diffusion of the broadband access, the digital competences, the knowledge of the network and so on) are elements that, added to the inadequacy of Italian general network, let us assert that it lacks a general culture on the internet.

1.1.2. Digitalization process among Sectors

From 2017 all sectors increased their spending in digital transformation, for the exception of Public Administration which has registered a slow growth.

Sectors differ each others on the speed of the digitalization process and on the areas of interest.

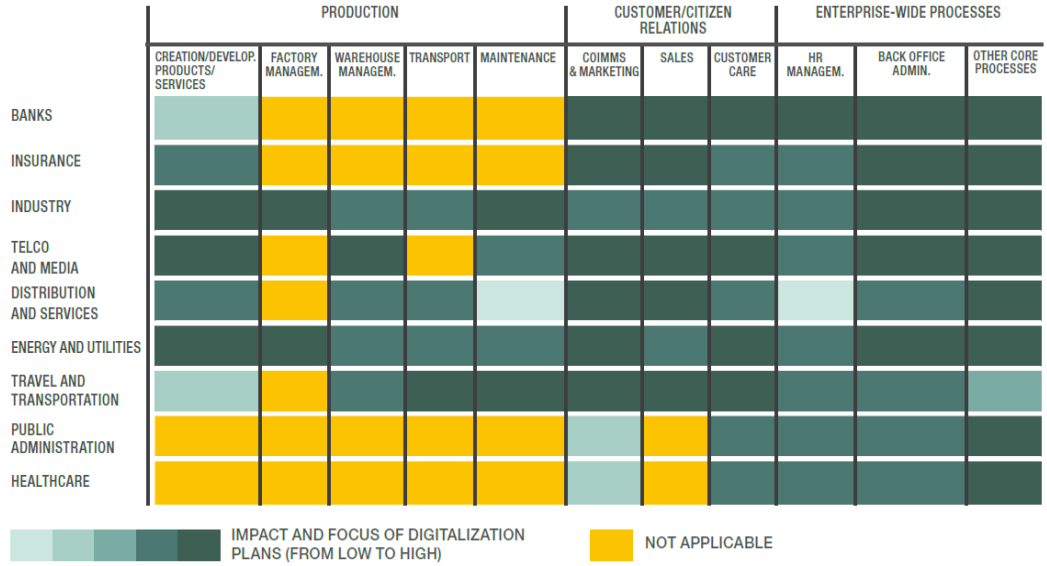


Figure 8 – Digitalization process among sectors

The graph[16] shows where divisions mainly focused on their digital transformation and the intensity of the investment.

Thanks to the deep analysis of *Confindustria Digitale*, it is possible to analyse the digital transformation in Italy per sector of interest.

Banks are considered drivers of the digital market, from 2017 this sector spent more than 7 Million in innovation and is expected to continuously grow in future years. All the digital processes are concentrated on innovating the relationship between officers and consumers. The back-office activity is that of the most innovated both in costumer relationship management both in commercial activities by digitalising the customer experience and the marketing and sales activities. The credit sector is the first

[15] Tremolada Luca, 2020, pag 84-85.
[16] Anitec- Assinform, 2018

that created a national contractual framework that is based on three main aspects[17]: voluntarism, protection of dignity and respect for health and security. That means that in banks the agile working is only on a voluntary basis, it can be carried on by another hub or by home, if it is authorised by the Company. The national contract established the work schedule, the breaks, the maximum number of agile days (nowadays is 10). In general, the wish is to continue on the digital innovation by maintaining contact with the client, in a few words the aim is to integrate digital and physical channels. Another important aspect that is involving the financial sector is the spread of digital money and the diffusion of online payments: future years will probably be cashless.

Another sector that started the introduction of Smart Working from various years is that of insurance. This sector pursues the objective to guarantee flexibility and a better work-life balance, for example, Allianz started a Structured Project in 2014[18] with the 70% of participation of women. The graph shows that the main areas of innovation in this sector are marketing, sale and back office. Also in this area, the desire is to combine traditional and digital channels. The main digital instruments that are supposed to be exploited are Big data, IoT and Mobile. In this sector are spreading phenomena like the "Connected Insurance" and the "Smart Home": those are two of several ways to better control the client and to prevent opportunistic behaviours.

In the industry segment, there are no areas of not-applicable digital transformation. The division of industry is that of stronger involved in the innovation process. The 4.0 industry is spreading over time and all the digital investment are a mean to improve production, relationship with the customer and internal process of management. There are lot of aspects that could be analysed and studied on the industry 4.0 but one of the most relevant factors is the spread of Big Data called Industrial Big Data[19]. *Those are all data generated inside the industry by machines, mobiles, human-machine interfaces, surveillance cameras or Internet of Things devices installed inside the plant, data on cloud, smart sensors data, cyber-based data etc*.

For the distribution and services sector, the graph shows that the only not applicable area is the factory management. From 2017 the Distribution and Service line reached investments of 4.250 million euros and continued to grow with a positive rate through the years. The processes of digitalization are related to costumer-relationship management in all the steps of the customer journey in both physical and technological points. The areas most affected by innovation are Sales and Marketing and Security.

In telecommunications and media sector, half of the investments are related to fixed and mobile Telecom network infrastructure, the rest to digital products and solutions. The tools are Big Data and Business Analytics Solutions, exploited in particular in the relationship with the customer, on the support of its needs and on the creation of a Tailor-made approach to its proposals.

[17] Casadei Cristina, 2020, pag 51-53.
[18] Pezzatti Federica, 2020, pag 54-56.
[19] Nayyar A., Kumar A., 2020, from pag 58.

Travel and transportation is a division that really enjoyed the introduction of in digital presence among firms and places. The key input are Internet of Things and the Digital Transformation which provide solutions to better perform the customer experience. The use of Apps and Collaborative Platforms create great stuff for personalized services.

Public Administration offers low possibility to the application for digital innovation, the graph shows that all the areas of production are out of application and, the others are low penetrated by the digitalization process. The only one with a high rate of innovation is related to the core business. The slow introduction is highly correlated with the government directives and the decisions of the Law of Stability (for example in 2017, the Law of Stability of 2016 modified the spending process in IT).

A sector, similar to the previous one, is Healthcare. This has a lot of areas not accessible to the digital innovation that is concentrated on the core business. Respect the previous sector, instead, the trend of investment is positive and in increase. The Internet of Things is a clear example of the usefulness of digital. In healthcare is translated into wearables with the possibility of remote medical care services, telemedicine and security.

The last one is that of the consumer. This was one of the most involved sectors of digital innovation with an investment of Italians of more than 29 billion euros. The wearables (smartwatches, fitness tracker, biomedical instruments) and Smart TVs. One of the segments which registered a drop is that of tablets because of the vast acquisition of smartphones and PC.

1.1.3. Small and Medium Enterprises

As we already presented before, there are several reasons to introduce Smart Working into Enterprises. In detail, Small and Medium Enterprises are introducing agile working for two main reasons: Bettering organizational welfare (50%) and bettering organizational processes (20%).

There are other aspects to deeply analyse in the environment of Enterprises.

To have a general overview of the penetration rate of agile working into this segment of Business, the *Smart Working Observatory of School of Management of Polytechnic of Milan* creates a meticulous comparison with the year 2018 on the percentage rate of diffusion.[20]

There were identified seven different segments, divided per the intention of introduction and level of awareness. The groups are: Not informed, Not interested, Uncertain on the introduction, Probable introduction, Planned Introduction, Unstructured Initiatives, Structured Initiatives.

[20] Digital observatory of polytechnic of Milan,, 2019.

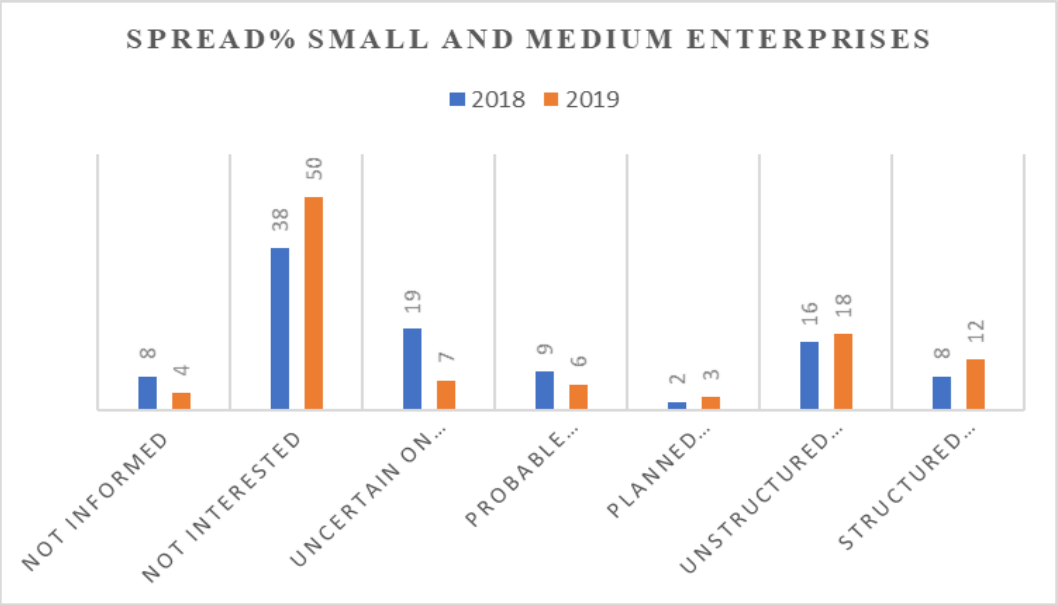


Figure 9 - Spead % small and medium enterprises

As is shown in the graph, the highest percentage both in 2018 and in 2019 is related to the "Not Interested" group. This value encourages reflection: why Small and Medium Enterprises are not interested in the introduction of agile working?

Beside these firms there are also them "uncertain on the introduction". The survey of the Observatory underlines some barriers[21] to the introduction such as the impossibility to apply agile working to their corporate situation (for 68% of Enterprises) and lack of interest and opposition by heads (for 23% of cases).

These barriers could be justified by the low awareness about what "agile working" means, some people still associate this type of job to the only ability to work by home. Among these, the number that mainly changed through the years 2018 and 2019 is that of Absent Enterprises, but "uncertain on the introduction". These passed from 19% to 7% with a great increase of "Uninterested" ones.

On the other side, there is a huge cluster of surveyed enterprises, that are thinking to introduce smart working, are structuring the launch and are planning the ways to act. The most relevant percentage regards the "Unstructured Initiatives", in 2019 these types of projects increased to 18% from 16% of the year 2018. The lowest number, among all the segments, is that of "Planned Introduction", values rise of 1% from 2018 to 2019, reaching 3%.

The most involved subjects are those who manage the human resources (56% of surveyed), who manage the property (31%), the IT management (30%).

The analysis also gets some references on what actions need to be implemented to support the activities of smart working. In small and medium enterprises, the most important areas to retouch are the training for managers on types of leadership and management of employers (66%) and all the communication activities, which aim to explain the policy and all the operational issues of smart working (59%).

[21] Digital observatory of polytechnic of Milan, 2019.

1.1.4. Big Enterprises[22]

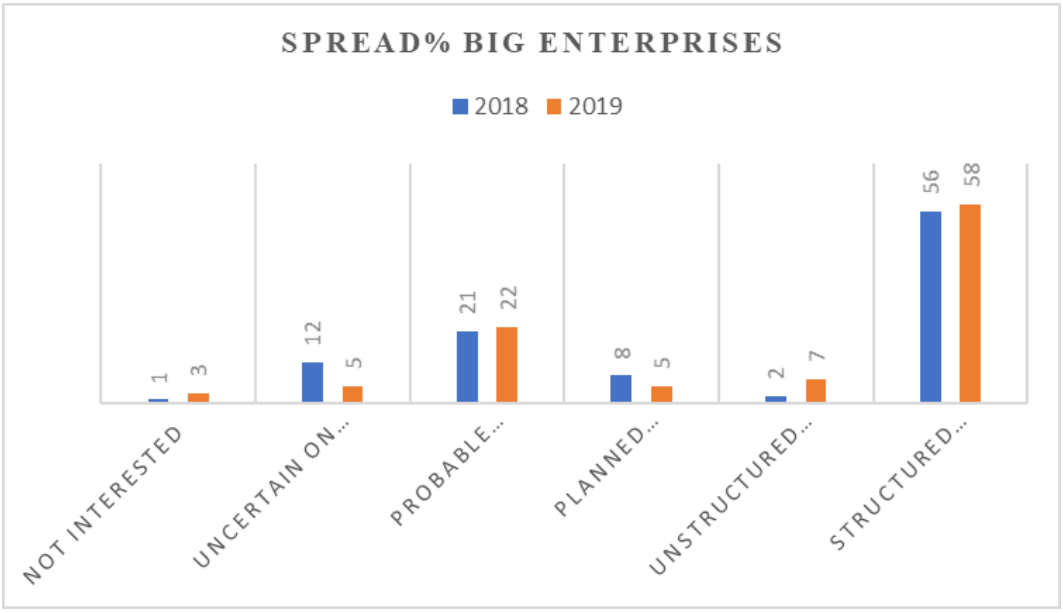


Figure 10 - Spread % Big Enterprises

The most evident value of the graph is the huge percentage of firms that activated "Structured projects". The rate of smart working penetration between 2018 and 2019 is basically the same, with an increase of 2% in 2019 by reaching 58% of Big Enterprises.

The scenario of this segment quite different from the previous one in which, the most widespread category was the "Not Interested". There is a clear difference in the approach to this new wave of digitalization. Among the reasons why to introduce agile working, there is not only the volunteer to bettering the work-life balance (78%) but also the aim to engage and attract talents (59%) and to change the culture (43%). Besides the reasons, there is clear evidence that Big Enterprises are more aware of what Smart Working means and, probably, is considered not only as a means to increase the organizational welfare but also as managerial leverage.

To have a general overview respect the values in 2016[23], reasons and priorities were really different, especially on the importance Big Enterprises attributed them: the wish to attract new talents was at the fifth-place respect today, that places the second position; the desire to change the culture in a goal-orientated direction, was about 37%, six points lower than today.

Continuing the analysis of the graph, is possible to see that, respect the previous one, the segment of "Not informed" Enterprises is not present at all. This is a positive data because it means that, even if some Enterprises decided to not undertake the project, the decision is based on the awareness of what agile working means, and so is based on a rationale.

The *Smart Working Observatory of School of Management of Polytechnic of Milan* individuated some barriers to the introduction of these projects for Big Enterprises too. It has been reelevated that is still

[22] Digital observatory of polytechnic of Milan, 2019.
[23] Digital observatory of polytechnic of Milan, 2017.

high the value of lack of interests by the head, that covers the half of surveyed enterprises, the 31% of them are scared about the security of data and the 31% declared to not have introduced Smart Working into their companies because of deficiency of digitalization of their activities.

1.1.5. Public Administration

In the public sector, the introduction of smart working is being slower and harder. In 2017, with the Directive[24] of Minister Madia, it was established to reach, in three years, at least a penetration rate of 10% in the public sector.

The values in 2019, are about 12% of penetration rate, this can be considered a good value if we look at the minimum level established by the directive but, at the same time, it gives a clear idea that the public sector is acting only to respect the laws imposed and not to increase the performance.

By talking with some Public-Sector executives, it results clear that implementing Smart Working is a difficult task, especially at the bureaucracy level. A lot of administrators complain about the long process of permits and documents required by the government.

Among these aspects, that could be considered reasons why to not introduce smart working, the survey of *Smart Working Observatory*, reveals some official barriers got from their survey: for the 43% of Public Offices interviewed, the introduction seems to be not applicable to their own business reality, the 27% declares to not be aware of benefits of the introduction and the 21% of Public Organizations declare to not be in line with the digitalization process needed to introduce Smart Working.

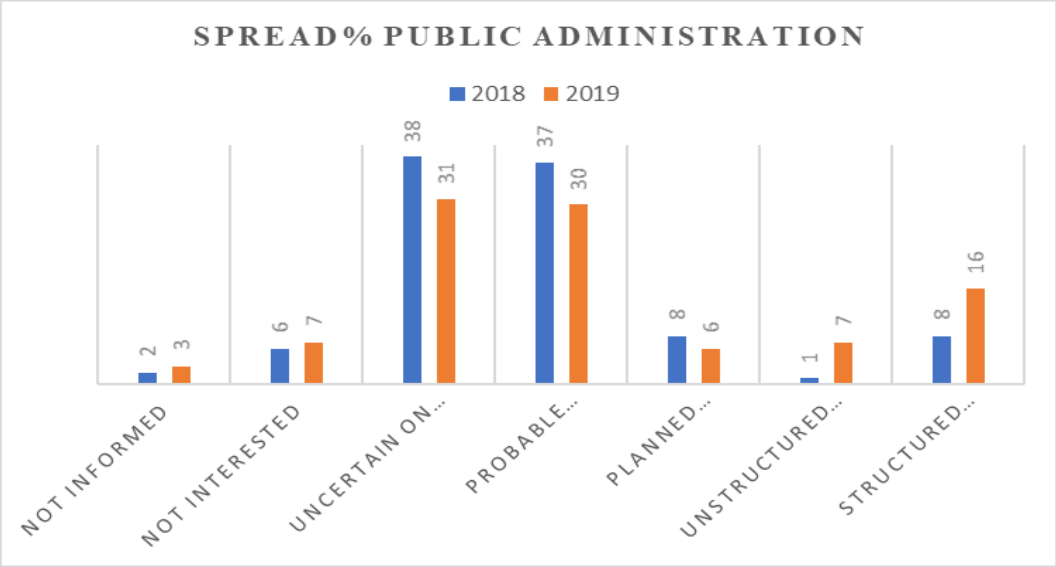


Figure 11 - Spread % Public Administration

The graph[25] shows the difference, in terms of penetration rate, among the years 2018 and 2019.

[24] Directive No. 3/2017, Presidency of the Council of Ministers.

[25] Digital observatory of polytechnic of Milan, 2019.

The most relevant segments are the “Uncertain on introduction” and “Probable introduction” with 31% and 30% rates in 2019. The reasons why could be attributed to the barriers analysed before but also to the perception of a work detached from the workplace, and so not perfectly performed if it lacks documents and necessary servers.

On the other side, it is possible to notice that in 2019 the “Structured Projects” doubled respect the year before reaching a penetration rate of 16%.

Public Companies who are “Not informed” and “Not interested” remain the same, with a little growth of 1% in the year 2019.

Among these discouraging numbers, the 78% of Public Enterprises that decides to introduce Smart Working, declares that they want to better the work-life balance and the 71% wish to improve the organizational welfare. The awareness of positive consequences is high from Organizations that introduced Agile Working. The third reason why is that of the desire to improve productivity e work quality (62%).

1.1.6. Identikit of smart workers

The smart workers[26] are those who have flexibility and autonomy in the choice of time and place of work, and that are equipped with digital tools suitable for working in mobility. The socio-demographic analysis reveals that values are constantly changing.

In 2016[27] the 69% of smart workers were men, with an average age of 41 and with this type of dispersion among Italy.

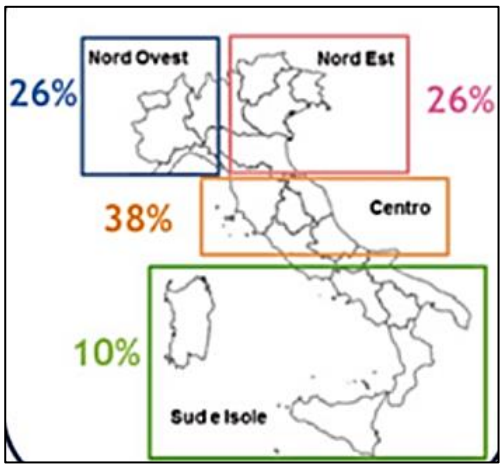


Figure 12 – Geographical origin of Smart Workers

[26] Digital4, 2018.
[27] Bucci Valentina, 2016

From the survey of the Observatory, in 2019, smart workers were mainly men (76%), among this percentage the 50% belongs to the X- generations, so they are 38-58 years old and the 48% is resident on the Nord-West of the Country.

According to the *Smart Working Observatory*, the number of Smart Workers passed from 480.000 of 2018 to 570.000 in 2019, with an increase of 20%.

Inside the Organizations, some criteria drive the selection[28] of employers to involve in this type of working such as "personal and familiar condition", for example disabled family members, which impact for the 57% of cases and the "type of task carried out by the employer" which impact for 57% of cases. Among the reasons already mentioned at the beginning of the chapter, there are many other rationales[29] why employees decide to start working from home.

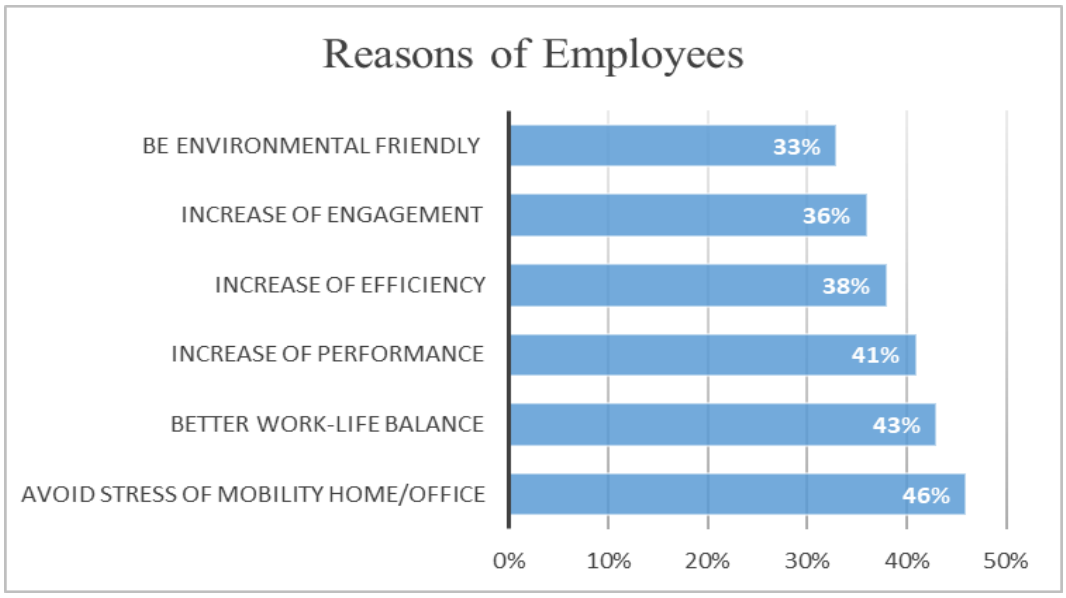


Figure 13 - Reasons of Employees

The graph shows, in order of importance, all the main answers of surveyed workers. The numbers reveal that 46% of workers really feel the stress of mobility, especially during peak hours. Moreover, the choice of Agile Working is for them, a way to avoid traffic and waste of time. The other reasons refer to the execution and to the engagement. On average, about 40% of workers answered the survey with positive feedback on their concentration and performance on tasks.

To deeply analyse why people are more productive working by home, FlexJobs' 7th Annual Super Survey[30], collected some top reasons that are shown in the chart:

[28] Digital observatory of polytechnic of Milan 2019.
[29] Digital4, 2018.
[30] Reynolds Brie Weiler, 2018.

Figure 14 - Reasons of better Productivity

After a period of agile working, it has been possible, for the Observatory, to compare results and opinions of smart workers respect hat of Office Workers.

The diagram[31] shows some positive differences in favour of smart workers.

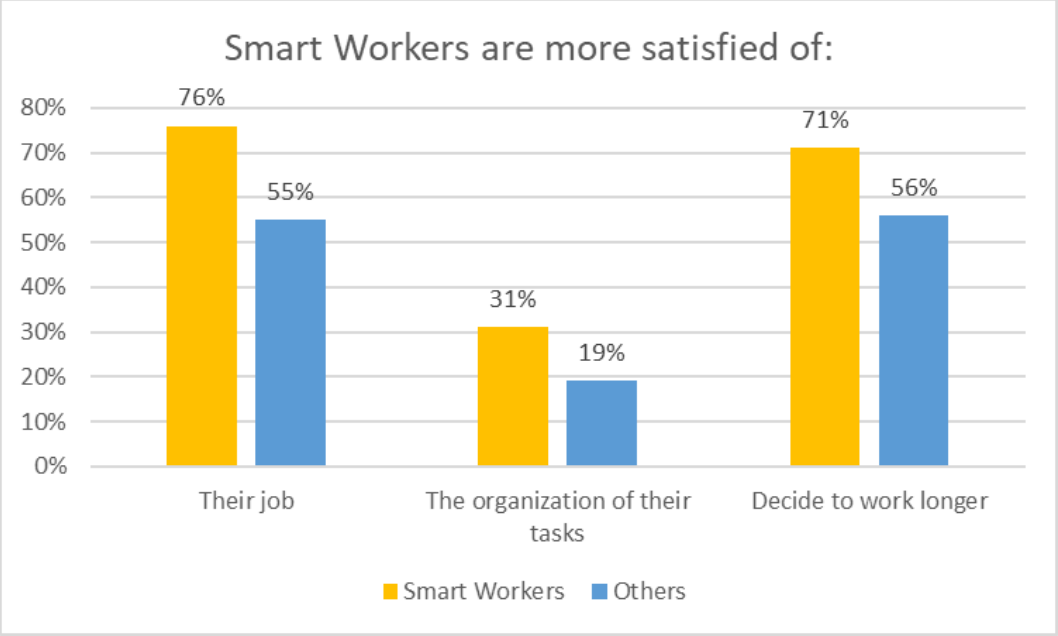


Figure 15 -Satisfaction of smart workers

The introduction of agile working seems to have improved the satisfaction of the job for the 76% of cases, considerably higher respect the 55% of office workers. The satisfaction in the work's organization is also higher respect the office workers, in fact the difference among the two categories is of 12% in favour of smart workers.

[31]The Confindustria Studies Centre, 2020.

The second relevant factor, in order of importance, regards the decision to remain at work longer respect the standard hours to do. Workers who digitalize their job, and so who perform their tasks from home, for the 71% of cases work longer respect the 56% of normal workers.
These data let assume that agile working is a positive mean both for employers, for the reasons analysed at the beginning of the chapter, both for the employee that find out advantages not only in terms of work-life balance but also in terms of performance and involvement in their tasks.

1.2. The change in the internal culture of Italian Enterprises

The introduction of Smart Working in the business reality is a hard track, that requires changes in several fields. Actually, this new working method is an innovation that involves all the areas of the organization but in particular, it affects the managerial model, the cultural approach, the relationship of workers with their tasks. It also requires changes in the approach with colleagues and head, and an increase in technological capabilities.
Among these, there are a lot of other aspects that usually are underestimated but that requires attention and control.

1.2.1. Main changes and managerial models

A Management Model[32] is the set of decisions made by managers about how the act of management gets performed, about how they identify goals, encourage effort, coordinate actions, and distribute resources. The key elements are the definition of the Management Model (so the way to make decisions), the description of where the organization is going in terms of goals, the actions aimed to motivate people to agree with the decisions taken, the coordination of activities with the decision-making process.
One of the biggest changes with the introduction of agile working is, therefore, the way Organizations perform their goals.
The launch of the agile working cannot be considered just an application of laws or regulations, but it needs a specific training and some specific devices to allow employee performing tasks as they were in the office. Some firms consider Smart Working just the change in geo-localization, in reality instead, it affects several areas of changes and it needs to be matched with training activities, awareness-raising initiatives and coaching. The process may require years, not only for the change in organizational design but also for employees to get used to digitalization[33].
To better clarify the steps, what is needed to successfully integrate smart working into a business?
There are some necessary tools to carry out[34]: firstly, employers encourage agile working by offering technological devices and using internal marketing campaigns; then, they have to change the culture by

[32] Birkinshaw J., 2010.
[33] Corso Mariano, 2020, pag 23-24.
[34] Newsroom Morning Future, 2018.

rearranging performance evaluations processes; third, they need to integrate smart working into the business and so, into the company hierarchy.

The other main question is: how firms can guarantee smart working to take effort?

The action to mainly carry on is to encourage motivation and awareness of workers. Organizations have to focus on internal communication to clarify the reasons for the change management and then, they need to offer training courses. Effectively the change regards, above all the others, the usage of innovative tools of communication, meeting online, work in teams remotely and so on.

Of course, the change has some difficulties in the application because it requires organizations to pass from a work based on employees being together and so easily monitorable, to the ability to control them remotely and to delegate responsibilities.

1.2.2. Work-life balance of workers

According to data previously analysed, it is possible to assert that the second reason for employees to accept smart working is the wish to improve their work-life balance. The graph "reasons for Employees" shows that this wish refers to the 43% of workers.

Another survey that *involved more than 5000 professionals of Human Resource Management, Internal Communications and General Management departments, the biggest advantage is the opportunity for employees to establish a better work-life balance*[35].

The term "Work-Life balance" refers to the equilibrium between time dedicated to working time and time dedicated to private life. This aspect is occupying an always more important role in the management approach of organizations.

This argument could be analysed by different points of view: Juridical, Social and Economic.

On the legal aspect, these changes have necessitated development of the political agenda and a renewal of the legal context at the European and domestic level to simplify the distribution of duties between the work and family sphere for women and men.

For a long period of time, Community interventions on the work-life balance have concentrated mainly on the issues of female workers. In March 1992 the Council of Europe, with Recommendation 92/241/EEC[36], proposed to al the European States to introduce gradual initiatives aimed at permitting women and men to balance their work-life with their family life. Thus, the Council introduced a new notion, based on the concern that this equilibrium does not regard only females, but all workers, regardless the gender.

The article number five of the Recommendation, regarding "Environment, structure and organization of work" is that more interesting for the analysis in this place: "*As regards the environment, structure and organization of work, it is recommended that Member States, taking into account the respective*

[35] Newsroom Morning Future, 2018.
[36] European Economic Community, 1992.

responsibilities of national, regional and local authorities, management and labour, other relevant organizations and private individuals, and/or in cooperation with national, regional or local authorities, management and labour, other relevant authorities and private individuals, should take and/or encourage initiatives to:

1. *support action, in particular within the framework of collective agreements, to create an environment, structure and organization of work which take into account the needs of all working parents with responsibility for the care and upbringing of children;*
2. *ensure that due recognition is given to persons engaged in child-care services as regards the way in which they work and the social value of their work;*
3. *promote action, especially in the public sector, which can serve as an example in developing initiatives in this area.*"

Since 1992, there are specific mentions to collective agreements and cares on create a work organization that aims to guarantee equilibrium with the private life of employees. A particular reference is to families composed by more than two members, so couples who have children need to be considered a segment to be dedicated to, in terms of needs.

After that, in 2000, the Council of Ministers for Employment and Social Policy published Resolution 218/2000[37] which introduced the proposal to create an equilibrium between men and women in the private and working life. The most relevant article is number five, which directly addresses public and private employers, workers and social institutions at national and European levels.

The sensitive issue of equal treatment among men and women has been deeply analysed and discussed also in the following directives, with specific references to the introduction of smart working for at least one member of the family.

To be more precise, there are some specific directives to analyse:

- European Parliament Resolution of 9 June 2015[38] on the EU Strategy for equality between women and men post 2015.

  In the section "Work and times" in comma 28, there is a focus on the proposal from the European Parliament to the European Commission to sustain the Member States in the adoption of measures in favour of a better work-life balance in particular in the introduction of a flexible working method and in the introduction of a paternity leave of at least 10 days, providing, in particular, strong incentives for fathers.
- The resolution approved on 13 September 2016 by the European Parliament[39].

  In the section "Quality Employment", at point 47, the Parliament pressures that employees should be given the opportunity of using flexible working measures to adapt these to their

[37] Council of the European Union and Ministers of Employment, 2000.
[38] European Parliament, 2015.
[39] European Parliament, 2016.

personal conditions. In addition, point 48, sustains 'smart working' as a method to arrange work through a mixture of flexibility, self-government and teamwork and highlights the potential of smart working for a better work-life balance.

- Proposal for a Directive of the European Parliament and of the Council 2017/0085[40] on work-life balance for parents and carers.

  The main impact of the proposal on smart working is the granting of the right to ask reduced working timetable, flexible working hours and flexible work-place.

  These rights are granted for all working mothers and fathers of children up to 12 and carers with dependent relatives.

This subject is continually evolving with a focus even harder on the introduction of smart working into organizations.

Going ahead, I have said before that the impact of agile working could be analysed both on a Juridical point of view but also on a Social and Economic perspective.

As regards the social aspect, it is related to the focus on gender equality and to the improvement of life-style for workers.

As regards the Economic aspect, instead, it results that poor balance among private life and working life, creates barriers to participation in the work market, especially by women.

According to the European Commission, the economic losses[41] due to the gender gap in employment levels amount to 370 billion per year.

1.2.3. Main leverages of application

The introduction of agile working is not simple and requires different steps depending on the type of Organization (the design and the core business), and the objectives that it wants to achieve.

Nevertheless, it is possible to individuate some standard steps[42], common for all the businesses that want to start this technological project. At first, it is necessary the analysis of the initial context: in this phase, it is necessary a "Readiness Assessment", in which there is an evaluation of the organizational and technological arrangement in order to identify the pilot projects to start the initiative. At this moment it could be useful to create some teams, then, it is necessary a corporate analysis at macro and micro level. As regards the macrostructure it is essential to individuate the core activities, processes and departments in which there is the wish to introduce agile working; on the Microstructure level, it is useful to map workers and their needs. In this step the four main leverages that need to be exploited are the cultural aspects, the organisational policies, the norms and the costs/benefits analysis.

40 European Commission, 2017.
41 Save the Children, 2019.
42 ELENA, 2018.

After this first process, it is necessary to build the project and to structure the activities: in this stage it is required to define the objectives, identify the main recipients, identification of the policy (for example how many days it is possible to work in agile-modality and all that concerns the flexibility on this argument).

The following action is the analysis of the effectiveness and efficiency (cost-benefit): this is a crucial step before the decision to introduce smart working into a Corporate. The economic analysis is the key point to verify if there would be concrete advantages for the Organization. Among the several advantages that could be identified, the main that are wishes are the improvement of efficiency, efficacy, engagement and innovation. Obviously, for the success of the introduction it is needed a good application of some planning leverages such as good technical infrastructure, the ability to reshape the physical layout of the organization and good training for the development of soft skills.

The last step is the commitment to monitor, control, and assess the project in terms of the definition of indicators. When introducing a new project into a Corporate, the monitoring activity is vital to estimate the advantages and the costs of the innovation. The control needs to conduct both before, during and after the introduction in order to evaluate all the possible changes and drawbacks.

To carry on a complete evaluation, it needs to estimate and individuate a set of basic indicators, these will be used to monitor the achievement of fixed goals, the coherence with tools and the global effect of the introduction inside the Organization.

After having individuated these indicators it is vital to involve all the workers in the monitoring activity because there will be them to record and communicate the achievements. The key means that are used to carry on this type of activities are questionnaires and, sometimes, swot analysis.

The following table[43] shows an example of indicators that could be useful.

[43] ELENA, 2018.

14

OUTCOMES	INDICATORS
COMPANY PRODUCTIVITY pre and post introduction of the smart working policy:	no. of extra activities/services implemented by workers compared to period X preceding the start of smart working
COMMITMENT TO COMPANY	Enhanced link between worker and company compared to period X preceding the start of smart workinge
WELLNESS	Salary, Health, Work, Social Life, Free Time, Life in general
WORK-LIFE BALANCE INDICATOR	no. of female/male workers who have a better work-life balance compared to period X preceding the start of smart working
PROACTIVE aspects and the quality perceived by the client (both internal or external to the organisation)	Proactive actions can be assessed by the number of e-mails/ telephone calls made, the quantity of sales, the number of complaints received and the renewal of the purchase by customers.
LOWER COSTS	Difference (in terms of saving) compared to period X preceding the start of smart working
INCREASE IN WORKING SATISFACTION	no. of workers who say they have greater work satisfaction or motivation compared to period X

Figure 16 – Indicators for the evaluation of smart working

1.2.4. Advantages and disadvantages of change

The American producer Oprah Winfrey said: "The greatest discovery of all time is that a person can change his future by merely changing his attitude".

This is mainly the concept behind smart working. The change in attitude both from employers than employees' point of view, is the key input to guarantee a successful introduction of this innovation.

Every change could provide advantages and disadvantages. In the context of agile working, there are several points of view in both areas.

As regards the advantages, it could be identified three segments of benefit: I) Workers, II) Organizations, III) Society.

Smart workers enjoy lots of benefits. On average they are more satisfied than their colleagues and, as it is possible to see in the graph[44] below, the pleasure comes from distinct aspects:

[44] Trabucchi Marco, 2020.

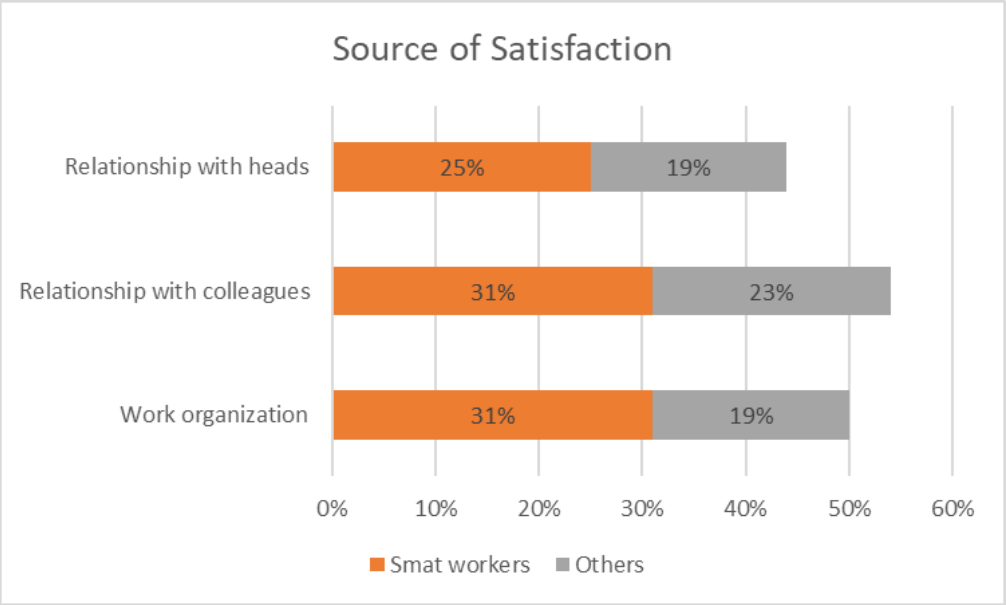


Figure 17 - Source of Satisfaction

Besides the satisfaction, there are a lot of other sources[45] of advantages, for example the opportunity to save time and costs due to displacement, the improvement of work-life balance, greater autonomy and flexibility in managing work and greater organisational welfare.

As regards the advantages on the Companies' point of view, those are probably even more than the advantages from the worker's perspective. The main ones that result from the analysed surveys are the optimization of costs of work, the increase in efficiency and productivity (about 15% per worker that means an overall benefit of 13,7 Billion countrywide[46]), the reduction of management costs of physical spaces, the streamlining of instrumental resources, the reduction of the rate of absenteeism and the improvement of company climate.

Just to have a complete overview of the impact of smart working, it is also possible to individuate some advantages for the society. Obviously, these are a direct consequence of the previous advantages. The main ones are the creation of more efficient services, the reduction of commuting and the improvement of urban mobility and the reduction of road traffic and CO2 emissions. A study[47] revealed that even just one day of smart working can save on average 40 hours a year of travel and 135 kg reduction in carbon dioxide emission per year.

Among all these positive aspects there are also some disadvantages[48]:

45 ELENA, 2018.
46 Newsroom Morning Future, 2017.
47 Newsroom Morning Future,2019.
48 Casadei Cristina, 2019.

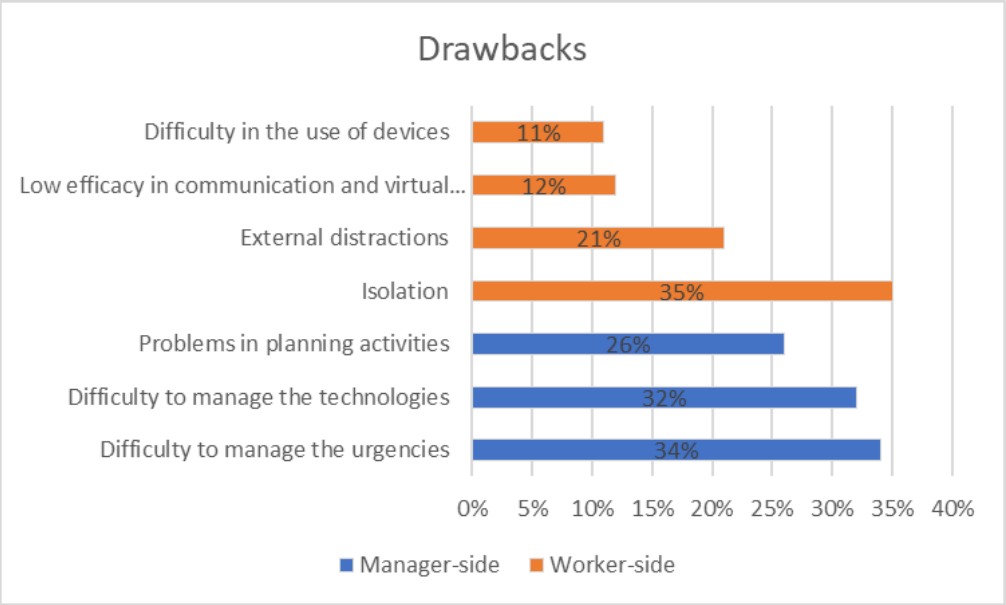


Figure 18 - Drawbacks

On the manager side, in the first place, there is the difficulty to manage the urgencies (for the 34% of interviewed), then the 32% of heads declared the difficulty to manage the technologies and in the third place, 26% has detected problems in planning activities.

On the smart worker side, 1/3 suffered for isolation (35%) and one on five spotted external distractions (21%). In addition, there are also some drawbacks connected with technology: a low percentage of respondents declared low efficacy in communication and virtual cooperation (12%) and difficulties in the use of devices (11%).

The two last disadvantages could be considered so low because, according to recent studies[49], who enjoy most of the smart working possibilities are the younger generations, so the X generation, who have natural digital skills.

1.3. Focus on Europe

Before analysing in detail the number of smart workers around Europe and the evolution of these data during the years, it is possible to assert that the agile working is spreading in Europe ever more.

In 2018[50], according to the Eurostat, only 11,6% of European workers started the agile modality occasionally (8,7%) or constantly (2,9%).

In 2019 Italian percentage rate was 2%, it involved 354thousands of workers, mainly concentrated in the segment of "constantly working from home". These numbers classified Italy at the bottom of the European countries (except for Cipro and Montenegro) and also really far away from the United Kingdom with a percentage rate of 20,2%, France with a rate of activation of 16,6% and Germany (8,6%).

[49] Chung Heejung, 2018, pag 2.
[50] Pogliotti Giorgio, 2020, pag 20-22.

These values could be considered reachable, but if the focus is moved on Northern Europe, it is easy to assert that Italy is really on a condition of backwardness on this innovation. Except for Norway (8,3%), in fact, the other Countries registered really high values such as 31% in Sweden and Netherland, 27% in Island and Luxemburg, 25% in Denmark and Finland.
Regarding the gender, even if you might think that female workers are much interested in this approach, in Italy and around Europe average values are quite balanced: in Italy, it works from home the 2,2% of women and the 1,8% of men; in Europe the values are 12,1% for women and 11,2% for men.

1.3.1. Diffusion of smart working per European Country

Thanks to the Eurostat statistics, it is possible to deeply analyse the number of smart workers around Europe in terms of age, sex, frequency of smart working and employment status.[51]
In this analysis I decided to focus on two main segments of time: "Usually" and "Sometimes", and on a single segment of age: from 15 to 64 years old.
The Eurostat also distinguishes two categories[52] of workers:

- Employee: *is a person who works for an employer on the basis of a contract of employment and receives compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind.*
- Employed persons: *total number of persons who work in the observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams).*

In this analysis I decided to focus on a wider range of people, so I will report data for the "Employed Persons" segment.
The first Eurostat table shows percentage rates of employed persons, of age range 15-64, who actuate smart working "Usually":

[51] Eurostat, 2020.
[52] Eurostat, "Glossary: Persons employed - SBS", Eurostat Statistic Esplained.

GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	6,9	6,6	6,9	7,2	8,1	8,7	8,8	9,2	9,9	9,7	9,4	8,8
Bulgaria	0,5	0,3	0,3	0,2	0,3	0,4	0,5	0,5	0,6	0,4	0,5	0,6
Czechia	4,6	4,0	3,9	3,8	3,5	3,4	3,3	3,4	3,2	3,2	2,7	2,6
Denmark	7,8	7,8	8,8	8,4	9,0	9,9	11,0	11,7	12,0	10,9	10,1	10,4
Germany	5,2	5,0	4,8	3,2	3,3	3,2	3,3	3,5	3,6	3,3	3,4	4,1
Estonia	6,8	7,6	5,9	6,0	5,6	5,5	6,2	5,7	4,8	4,8	3,6	2,6
Ireland	7,0	6,5	5,0	3,3	3,7	3,6	4,1	4,8	6,9	7,0	7,2	6,9
Greece	1,9	2,0	2,3	2,6	2,6	2,7	2,2	2,1	2,1	1,8	1,9	1,7
Spain	4,8	4,3	4,3	3,5	3,6	4,3	4,3	4,4	4,0	3,7	3,3	3,1
France	7,0	6,6	6,7	6,9	7,0	6,8	7,3	11,5	11,3	10,9	10,3	9,8
Croatia	1,9	1,4	1,4	1,4	1,2	1,4	1,0	0,9	1,0	0,9	0,9	0,9
Italy	3,6	3,6	3,5	3,3	3,4	3,2	3,1	3,3	3,0	3,1	3,2	4,0
Cyprus	1,3	1,2	1,2	1,6	1,5	1,7	1,6	1,0	0,9	1,0	0,7	0,8
Latvia	3,0	2,9	2,1	2,6	2,1	2,5	2,1	2,0	2,1	2,8	2,3	2,0
Lithuania	2,4	2,5	2,6	2,7	3,0	4,1	3,9	4,0	3,4	3,5	3,7	4,6
Luxembourg	11,6	11,0	12,7	12,0	13,2	14,1	12,4	11,4	12,0	12,3	10,7	8,9
Hungary	1,2	2,3	2,5	3,0	3,4	3,4	3,9	3,1	2,8	2,3	2,2	2,4
Malta	6,1	5,8	4,4	3,6	2,6	2,7	2,2	1,8	1,6	1,7	5,0	4,1
Netherlands	14,1	14,0	13,7	13,4	13,6	13,1	12,6	11,5	11,3	11,0	11,0	10,7
Austria	9,9	10,0	9,5	9,9	10,2	10,7	10,4	10,3	10,7	10,3	10,0	10,1
Poland	4,6	4,6	4,5	5,3	5,6	4,6	4,0	4,6	4,7	4,5	4,2	3,8
Portugal	6,5	6,1	5,9	6,3	6,2	6,6	6,7	6,3	5,6	0,9	1,0	1,1
Romania	0,8	0,4	0,4	0,5	0,5	0,4	0,3	0,4	0,5	0,2	0,3	0,4
Slovenia	6,8	6,9	7,2	7,5	7,9	7,7	7,1	6,6	6,7	6,7	5,9	4,8
Slovakia	3,7	3,6	3,5	3,2	3,2	3,5	3,5	3,5	3,6	3,0	3,6	3,7
Finland	14,1	13,3	12,3	11,9	12,0	10,6	10,6	9,8	9,7	9,1	8,9	9,3
Sweden	5,9	5,3	5,0	5,1	5,1	4,9	4,8	4,5	4,3	4,2	3,9	3,6
United Kingdom	4,7	4,4	4,0	4,1	3,8	3,6	3,4	3,5	3,5	2,9	3,0	2,9
Iceland	5,7	6,5	7,2	7,6	7,9	7,1	7,4	7,2	8,5	8,7	7,8	8,3
Norway	5,0	5,5	5,1	4,9	4,1	4,4	5,1	4,7	4,2	4,6	4,9	4,2
Switzerland	3,9	4,1	4,0	4,3	4,2	4,0	4,0	3,9	4,0	4,0	4,2	4,6

Figure 19 – Employed persons, "Usually"

The second one refers to the same target of persons in terms of age and working category but it differs for the frequency of smart working: "Sometimes":

GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	17,7	16,1	16,5	15,5	14,2	13,7	12,3	11,3	10,6	9,6	8,8	8,2
Bulgaria	0,6	0,7	0,6	1,0	0,7	1,0	1,1	1,4	1,2	1,4	1,2	1,7
Czechia	5,4	5,4	5,2	5,0	4,1	4,4	4,7	4,6	4,6	4,0	4,0	3,9
Denmark	20,7	19,6	21,1	23,7	18,2	18,2	18,5	18,6	18,1	18,1	18,7	16,8
Germany	7,4	6,6	6,0	7,7	8,0	7,7	7,7	7,9	8,1	9,6	9,5	9,9
Estonia	13,5	12,5	10,7	9,6	7,9	7,5	6,2	6,1	6,7	6,5	6,2	3,8
Ireland	12,9	12,8	11,5	9,3	9,6	9,9	10,2	9,9	7,3	6,5	6,7	5,9
Greece	3,4	3,1	3,2	3,4	3,0	2,5	2,6	2,7	2,0	1,9	2,4	2,8
Spain	3,5	3,2	3,0	2,9	2,9	2,6	3,2	2,8	2,7	2,5	2,5	2,4
France	15,7	14,1	13,6	13,4	12,4	12,4	12,2	8,8	8,6	8,6	8,3	7,6
Croatia	5,0	5,3	4,6	3,9	3,1	2,4	3,2	2,7	2,6	2,3	2,3	2,3
Italy	1,1	1,2	1,1	1,0	1,0	0,9	1,2	1,2	1,2	1,3	1,3	1,5
Cyprus	1,2	1,0	1,3	1,3	1,1	1,4	1,4	1,0	0,8	0,5	0,4	0,5
Latvia	1,8	1,9	1,2	1,6	1,0	1,4	1,3	1,1	0,9	1,1	0,9	0,9
Lithuania	2,1	2,1	2,1	2,1	1,9	1,4	1,6	1,5	1,4	1,8	2,5	4,0
Luxembourg	21,5	19,8	20,9	20,4	18,9	13,4	12,7	12,2	10,4	10,2	10,4	2,2
Hungary	3,4	3,7	4,1	4,2	5,3	6,3	6,8	6,3	5,8	5,8	5,3	4,6
Malta	5,4	3,9	3,1	2,9	2,3	2,3	1,8	1,8	1,7	1,8	4,5	4,4
Netherlands	23,0	21,7	21,4	21,2	20,9	:	:	:	:	:	:	:
Austria	12,1	11,7	12,1	12,1	11,8	11,0	11,1	11,5	11,1	11,1	10,7	10,1
Poland	9,8	9,4	9,1	9,4	10,2	8,5	8,7	7,9	8,0	8,2	7,8	7,8
Portugal	9,0	8,6	8,3	8,1	8,0	7,8	7,2	6,4	4,7	3,8	3,9	4,2
Romania	0,6	0,3	0,2	0,3	0,3	0,2	0,2	0,3	0,2	0,1	0,2	0,2
Slovenia	11,0	10,9	11,0	10,1	10,8	10,6	10,0	9,0	8,7	8,3	6,8	5,3
Slovakia	5,8	5,4	4,9	5,0	5,6	5,5	5,0	5,3	4,5	4,2	4,0	3,6
Finland	17,6	17,0	16,2	15,4	14,8	14,3	14,0	12,9	12,5	11,8	11,9	11,5
Sweden	31,3	29,4	27,4	26,8	25,9	25,3	24,7	23,1	21,3	18,9	17,0	14,6
United Kingdom	21,7	19,4	19,8	19,5	20,2	20,4	20,7	20,6	20,1	20,6	19,9	19,9
Iceland	24,1	25,0	26,7	28,0	28,3	26,5	29,3	27,0	25,1	24,2	25,6	24,0
Norway	5,2	5,9	5,3	6,1	6,0	6,3	6,6	6,0	6,5	6,8	6,8	6,3
Switzerland	7,5	6,9	6,4	14,5	13,1	12,6	12,0	11,2	10,9	10,6	12,1	11,6

Figure 20 – Employed persons, "Sometimes"

By firstly analysing only data about Italy, according to Eurostat, is clear that it is most common that employees accept to work by home "usually" than "sometimes". Probably for a deep sense of stability and to avoid the stress of changing the workplace.

Even if it must be considered that data are expressed on the percentage of employment rate, it is relevant to the strange trend in which, from 2008 to 2019 there was registered a 4% degree for both the categories.

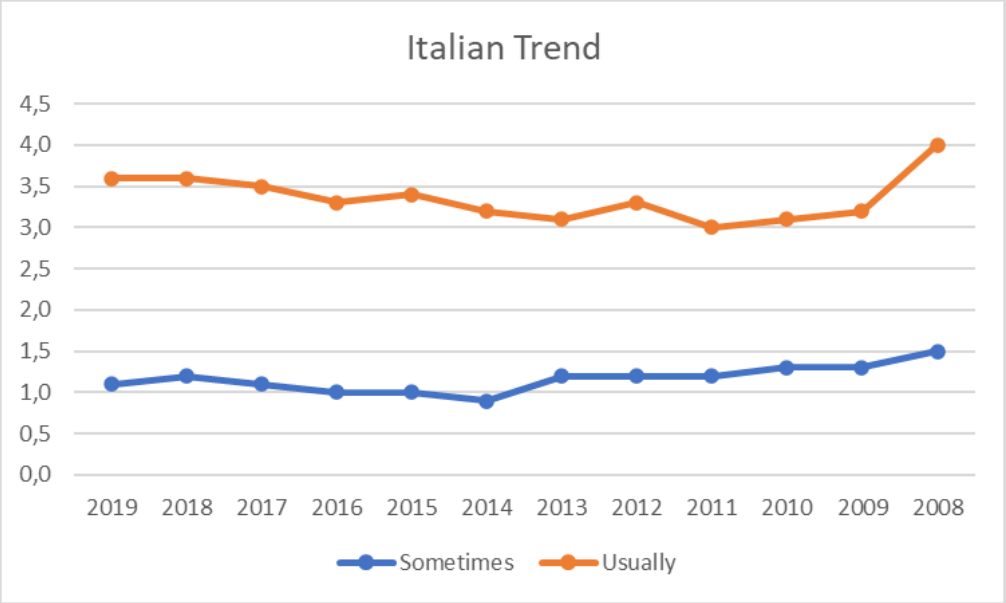


Figure 21 - Italian Trend

The chart of trends shows that there are some common evolutions, for example a common decrease in years 2009, 2011 and 2019; and a common increase in the years 2015, 2017, 2018.

Nevertheless, besides this, there are some opposite trends in which a category increased its rate of involvement in smart working, and the other one decreased (or vice-versa). This happens, for example, in the year 2012 in which the contract of smart workers "Usually" really increased respect the others one in which the percentage rate remained constant respect the year before. Another similar event occurred in the year 2016.

In the year 2013, instead, it happened the opposite scenario: "Sometimes" increased while "Usually" decreased. In the year 2014 there was registered the most relevant drop in "Sometimes" class: from a percentage rate of 1,2 to 0,9 with a consequent (but lower) increase in "Usually" smart workers.

Probably all these trends relate to laws, changes in regulations, incentives and discipline that are continually evolving.

Despite these little fluctuations, the average rates of Italian smart workers remained the same: for the "Usually" workers is the 3% of employed persons, for the "Sometimes" it remained on the 1%.

By comparing the Italian position with the other European Countries, in descending order of implementation of the project, Italian Smart employees place at the bottom three Countries on the approach to agile working. As regards "Usually" smart workers, instead, numbers are better. Italy places

at the bottom as well, but it overcomes more Countries than the other group. For both categories, northern Europe remains on the top of the ranking.

"USUALLY"	
GEO/TIME	2019
Netherlands	14,1
Finland	14,1
Luxembourg	11,6
Austria	9,9
Denmark	7,8
Ireland	7,0
France	7,0
Belgium	6,9
Estonia	6,8
Slovenia	6,8
Portugal	6,5
Malta	6,1
Sweden	5,9
Iceland	5,7
Germany	5,2
Norway	5,0
Spain	4,8
United Kingdom	4,7
Czechia	4,6
Poland	4,6
Switzerland	3,9
Slovakia	3,7
Italy	3,6
Latvia	3,0
Lithuania	2,4
Greece	1,9
Croatia	1,9
Cyprus	1,3
Hungary	1,2
Romania	0,8
Bulgaria	0,5

Figure 22 – Average rate per Country, "Usually".

"SOMETIMES"	
GEO/TIME	2019
Sweden	31,3
Iceland	24,1
Netherlands	23,0
United Kingdom	21,7
Luxembourg	21,5
Denmark	20,7
Belgium	17,7
Finland	17,6
France	15,7
Estonia	13,5
Ireland	12,9
Austria	12,1
Slovenia	11,0
Poland	9,8
Portugal	9,0
Switzerland	7,5
Germany	7,4
Slovakia	5,8
Czechia	5,4
Malta	5,4
Norway	5,2
Croatia	5,0
Spain	3,5
Greece	3,4
Hungary	3,4
Lithuania	2,1
Latvia	1,8
Cyprus	1,2
Italy	1,1
Bulgaria	0,6
Romania	0,6

Figure 23 - Average rate per Country, "Sometimes"

By maintaining the same target in terms of age and working category, a deep analysis can show differences among men and women smart workers around all Europe:

As regards the segment of frequency "Sometimes" males and females remain into the average of 1% involvement rate, even if for each year males are a little higher than females.

Having an overview of the other European countries it is possible to assert that males tend to perform more smart working than females. [53]

[53] Messenger J,Vargas Llave O., Gschwind L., Boehmer S., Vermeylen G., Wilkens M., 2017, pag 19.

Males "Sometimes"												
GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	18,6	17,1	17,5	16,4	15,1	15,0	13,9	12,6	12,0	10,6	9,9	9,3
Bulgaria	0,6	0,4	0,6	0,8	0,7	1,0	0,9	1,1	0,9	1,0	0,9	1,3
Czechia	6,0	6,3	5,8	5,7	4,4	4,9	5,6	5,2	5,4	4,6	4,4	4,3
Denmark	21,8	20,6	22,4	25,3	19,6	19,9	20,3	20,3	20,2	20,5	20,7	18,9
Germany	8,5	7,7	6,9	8,9	9,2	8,9	8,9	9,2	9,4	11,2	10,9	11,4
Estonia	13,3	12,3	10,7	9,9	8,1	7,7	6,4	6,0	6,9	6,3	5,8	4,0
Ireland	14,1	14,0	12,8	10,7	11,2	11,3	12,0	11,8	8,9	7,7	8,1	7,1
Greece	3,2	2,8	2,9	3,3	2,8	2,3	2,3	2,2	1,6	1,6	2,1	2,3
Spain	4,0	3,7	3,5	3,2	3,4	3,0	3,5	3,2	3,1	2,7	2,9	2,7
France	16,8	15,3	14,9	14,6	14,0	14,0	13,8	10,6	10,3	10,3	10,0	9,0
Croatia	5,3	5,5	4,5	3,8	3,0	2,3	2,9	2,9	2,7	2,4	2,4	2,3
Italy	1,2	1,3	1,2	1,1	1,1	1,0	1,3	1,3	1,3	1,5	1,4	1,7
Cyprus	1,4	1,2	1,8	1,5	1,2	1,9	1,8	1,1	0,7	0,5	0,4	0,5
Latvia	1,6	1,8	0,9	1,5	0,8	1,1	0,9	0,9	:	0,9	0,7	0,9
Lithuania	2,2	2,0	1,7	1,8	1,9	1,5	1,7	1,4	1,3	1,9	2,0	3,4
Luxembourg	23,9	22,1	21,9	23,2	21,8	15,4	15,0	14,6	12,3	12,2	12,4	2,0
Hungary	3,3	3,8	4,2	4,3	5,3	6,4	7,0	6,2	5,8	5,8	5,1	4,5
Malta	5,1	4,0	3,0	2,6	2,0	2,1	1,8	1,7	1,6	1,8	4,3	4,3
Netherlands	22,1	20,9	21,3	20,6	20,8	:	:	:	:	:	:	:
Austria	14,0	13,6	14,2	14,2	14,0	13,1	13,2	13,7	13,2	13,4	12,9	12,0
Poland	9,6	9,2	8,9	9,1	9,7	7,9	8,1	7,3	7,2	7,4	7,0	6,9
Portugal	9,2	8,9	8,6	8,5	8,1	8,2	7,3	6,5	4,8	4,2	4,4	4,6
Romania	0,6	0,3	0,2	0,3	0,3	0,2	0,2	0,3	0,3	:	0,2	0,2
Slovenia	10,7	10,3	10,0	9,8	10,5	9,9	9,4	8,6	8,7	8,3	6,2	4,6
Slovakia	5,8	5,2	4,7	4,6	5,5	5,4	4,9	4,9	4,2	4,1	3,5	3,2
Finland	19,1	19,7	18,5	17,5	17,1	16,6	16,8	14,9	15,2	14,9	14,5	13,6
Sweden	32,3	30,8	29,2	28,6	27,8	27,5	26,9	25,5	23,7	21,0	19,4	16,8
United Kingdom	22,5	19,9	20,8	20,3	21,7	21,5	21,7	22,2	21,5	22,2	21,1	21,8
Iceland	25,2	26,3	29,4	30,2	30,1	28,6	31,5	29,0	27,4	26,9	28,4	25,9
Norway	5,5	6,6	6,0	7,1	7,2	7,1	7,7	6,8	7,5	8,0	8,1	7,4
Switzerland	6,9	6,5	6,1	15,3	13,8	13,1	12,5	11,6	11,1	11,0	12,7	11,4

Figure 24 – Males, "Sometimes"

Females "Sometimes"												
GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	16,8	14,9	15,4	14,4	13,0	12,1	10,5	9,8	8,9	8,3	7,5	6,8
Bulgaria	0,6	0,9	0,7	1,1	0,7	1,1	1,3	1,7	1,5	1,8	1,5	2,2
Czechia	4,6	4,3	4,4	4,2	3,7	3,8	3,6	3,8	3,5	3,1	3,4	3,2
Denmark	19,6	18,5	19,6	22,0	16,7	16,3	16,5	16,7	15,8	15,5	16,5	14,5
Germany	6,1	5,3	4,9	6,5	6,6	6,4	6,3	6,5	6,5	7,9	7,8	8,2
Estonia	13,7	12,7	10,6	9,2	7,7	7,3	5,9	6,1	6,5	6,7	6,5	3,6
Ireland	11,4	11,5	10,0	7,7	7,7	8,1	8,1	7,9	5,6	5,1	5,1	4,5
Greece	3,6	3,5	3,6	3,6	3,4	2,8	3,1	3,3	2,5	2,3	2,9	3,6
Spain	3,0	2,6	2,4	2,5	2,3	2,1	2,8	2,3	2,1	2,1	2,1	2,1
France	14,6	12,8	12,3	12,2	10,7	10,5	10,5	6,8	6,8	6,8	6,3	6,0
Croatia	4,7	5,2	4,7	4,0	3,2	2,5	3,5	2,5	2,4	2,2	2,1	2,4
Italy	1,0	1,1	1,0	0,9	0,9	0,7	1,1	1,0	0,9	1,1	1,1	1,2
Cyprus	1,1	0,7	0,8	1,0	0,9	0,9	1,0	0,9	0,8	0,6	0,4	0,5
Latvia	2,0	2,0	1,6	1,8	1,2	1,7	1,8	1,3	1,3	1,3	1,0	1,0
Lithuania	2,0	2,2	2,6	2,5	1,9	1,4	1,6	1,5	1,5	1,8	3,0	4,6
Luxembourg	18,7	17,2	19,8	17,0	15,5	11,0	9,9	9,2	7,9	7,6	7,9	2,5
Hungary	3,4	3,6	4,0	4,2	5,3	6,1	6,5	6,3	5,7	5,8	5,6	4,7
Malta	5,7	3,7	3,1	3,2	2,7	2,5	1,9	2,1	1,9	1,9	5,0	4,5
Netherlands	24,1	22,6	21,6	21,8	21,1	:	:	:	:	:	:	:
Austria	10,0	9,5	9,8	9,7	9,4	8,7	8,8	8,9	8,8	8,5	8,3	7,9
Poland	9,9	9,6	9,3	9,7	10,7	9,3	9,5	8,7	8,8	9,1	8,8	8,9
Portugal	8,9	8,2	8,0	7,6	7,8	7,3	7,2	6,4	4,7	3,5	3,3	3,7
Romania	0,5	0,3	0,2	0,2	0,2	0,2	0,2	0,3	0,2	:	:	0,2
Slovenia	11,3	11,6	12,0	10,4	11,1	11,4	10,8	9,6	8,7	8,3	7,4	6,2
Slovakia	5,8	5,7	5,1	5,6	5,7	5,6	5,2	5,8	5,0	4,3	4,5	4,0
Finland	15,9	14,1	13,7	13,2	12,5	11,8	11,1	10,7	9,5	8,6	9,3	9,3
Sweden	30,2	27,8	25,4	24,9	23,9	22,9	22,2	20,5	18,7	16,5	14,4	12,1
United Kingdom	20,8	18,8	18,8	18,5	18,6	19,2	19,5	18,9	18,6	18,8	18,4	17,8
Iceland	22,9	23,5	23,7	25,7	26,3	24,3	26,8	24,8	22,6	21,3	22,5	21,7
Norway	4,8	5,1	4,7	5,2	4,7	5,3	5,3	5,1	5,3	5,5	5,3	5,2
Switzerland	8,1	7,3	6,8	13,7	12,4	12,0	11,4	10,8	10,7	10,1	11,4	11,7

Figure 25- Females, "Sometimes"

By considering 2019 data, it is possible to notice that in Bulgaria and in Slovakia males and females of the group “Sometimes” are perfectly the same: 0,6% and 5,8% respectively.

In Latvia, Malta, Netherlands, Poland and Switzerland the trend reverses because males are lower than females.

Males "Usually"												
GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	6,3	6,4	6,6	7,1	8,1	8,5	8,8	9,4	10,1	9,8	9,4	8,8
Bulgaria	0,4	:	:	:	:	:	0,4	0,5	0,5	0,4	0,3	0,5
Czechia	3,9	3,5	3,3	3,3	2,8	2,8	2,7	2,7	2,6	2,6	2,2	2,0
Denmark	8,5	8,5	9,8	9,2	10,2	11,0	11,7	12,7	13,2	12,2	11,2	11,5
Germany	5,1	4,8	4,7	3,0	3,1	3,1	3,2	3,3	3,3	3,0	3,1	3,8
Estonia	6,4	7,3	5,9	5,6	5,5	5,2	6,3	5,8	4,5	4,4	3,7	2,3
Ireland	7,6	7,2	5,4	3,7	4,2	4,2	4,7	5,9	9,1	9,2	9,6	8,8
Greece	1,7	1,7	1,7	2,2	2,1	2,4	1,7	1,5	1,5	1,4	1,4	1,2
Spain	4,8	4,3	4,4	3,6	3,6	4,2	4,1	4,4	3,9	3,5	3,1	2,9
France	5,7	5,2	5,6	5,3	5,3	5,1	5,6	9,8	9,7	9,4	8,7	8,2
Croatia	1,3	0,8	1,1	1,1	1,1	1,3	0,8	0,8	0,8	0,7	0,7	1,0
Italy	3,8	3,8	3,6	3,5	3,6	3,4	3,5	3,6	3,2	3,2	3,4	4,3
Cyprus	1,0	1,2	1,2	1,5	1,6	1,6	1,3	0,9	0,6	0,5	0,4	0,4
Latvia	2,7	2,9	2,3	2,4	1,8	2,6	2,1	2,0	2,3	2,6	2,3	2,0
Lithuania	2,3	2,5	2,9	2,9	3,3	4,2	4,1	4,3	3,5	3,4	3,9	4,5
Luxembourg	11,0	9,8	11,4	10,6	12,1	12,9	11,2	10,4	10,8	11,1	9,9	6,8
Hungary	1,1	2,0	2,3	2,8	3,2	3,1	3,7	2,9	2,8	2,2	2,1	2,3
Malta	5,1	4,7	3,6	2,8	2,0	2,5	2,1	1,6	1,4	1,6	4,1	3,5
Netherlands	15,4	15,5	14,7	15,0	15,3	14,6	14,7	13,2	13,1	12,7	12,7	12,3
Austria	9,1	9,3	8,5	9,1	9,4	9,8	9,6	9,7	10,0	9,7	9,2	9,4
Poland	4,3	4,4	4,4	5,2	5,6	4,4	3,7	4,2	4,3	4,2	3,7	3,4
Portugal	6,3	5,6	5,8	6,0	5,7	6,1	6,2	5,6	5,1	0,7	0,7	0,6
Romania	0,5	0,3	0,3	0,4	0,4	0,3	0,2	0,3	0,4	0,1	0,2	0,3
Slovenia	5,7	6,1	6,1	6,4	6,9	6,6	6,1	5,3	5,4	5,2	4,5	3,4
Slovakia	3,5	3,7	3,3	2,9	2,8	3,3	3,1	3,1	3,2	2,9	3,1	3,0
Finland	14,7	13,4	12,8	13,4	12,4	11,7	11,3	11,1	10,2	9,6	8,9	9,5
Sweden	6,4	5,7	5,3	5,4	5,4	5,3	5,3	4,9	4,6	4,5	4,1	3,8
United Kingdom	4,0	3,7	3,2	3,4	3,0	2,7	2,6	2,9	2,9	2,1	2,3	2,2
Iceland	5,8	6,2	7,4	8,6	8,9	7,4	7,8	7,5	9,0	8,9	8,0	8,5
Norway	5,8	6,2	5,7	5,8	5,3	5,3	6,3	5,9	5,0	5,5	6,3	5,3
Switzerland	2,9	2,7	2,7	2,8	2,9	2,8	2,6	2,4	2,7	2,7	2,6	2,9

Figure 26 – Males, “Usually”

Females "Usually"												
GEO/TIME	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belgium	7,7	6,8	7,3	7,3	8,1	8,9	8,9	9,1	9,7	9,6	9,3	8,9
Bulgaria	0,5	0,3	0,4	:	:	0,4	0,6	0,6	0,7	:	0,7	0,8
Czechia	5,4	4,6	4,6	4,5	4,4	4,3	4,1	4,3	4,0	4,0	3,3	3,5
Denmark	7,1	7,0	7,7	7,5	7,7	8,7	10,3	10,6	10,6	9,6	9,0	9,2
Germany	5,3	5,1	4,9	3,4	3,5	3,4	3,5	3,8	3,9	3,6	3,8	4,4
Estonia	7,3	8,0	5,8	6,4	5,8	5,8	6,1	5,6	5,2	5,1	3,5	2,9
Ireland	6,2	5,7	4,4	3,0	3,2	2,8	3,3	3,6	4,5	4,4	4,5	4,4
Greece	2,1	2,6	3,1	3,1	3,3	3,1	2,7	3,0	2,8	2,5	2,6	2,5
Spain	4,8	4,2	4,2	3,4	3,5	4,3	4,5	4,4	4,1	4,0	3,4	3,4
France	8,4	8,2	8,0	8,5	8,7	8,6	9,2	13,5	13,0	12,5	12,0	11,6
Croatia	2,6	2,0	1,8	1,7	1,4	1,5	1,2	1,1	1,1	1,1	1,2	0,9
Italy	3,3	3,3	3,3	3,1	3,1	2,9	2,7	2,9	2,7	2,8	2,9	3,6
Cyprus	1,6	1,2	1,3	1,8	1,5	1,8	2,0	1,2	1,2	1,4	1,1	1,2
Latvia	3,3	2,9	2,0	2,7	2,4	2,4	2,1	1,9	2,0	2,9	2,3	2,0
Lithuania	2,4	2,5	2,4	2,5	2,8	4,0	3,7	3,8	3,2	3,5	3,4	4,7
Luxembourg	12,4	12,5	14,2	13,7	14,5	15,7	14,0	12,6	13,5	13,8	11,8	11,6
Hungary	1,2	2,6	2,7	3,1	3,6	3,8	4,0	3,3	2,7	2,3	2,4	2,5
Malta	7,5	7,4	5,7	4,8	3,6	3,0	2,4	2,2	2,0	1,8	6,8	5,3
Netherlands	12,5	12,3	12,6	11,7	11,6	11,4	10,2	9,6	9,1	8,9	8,9	8,7
Austria	10,9	10,8	10,6	10,8	11,0	11,7	11,2	10,9	11,5	11,0	10,9	10,8
Poland	4,9	4,7	4,7	5,5	5,7	4,8	4,4	5,0	5,1	5,0	4,7	4,2
Portugal	6,8	6,6	6,0	6,7	6,7	7,1	7,3	7,0	6,1	1,1	1,3	1,6
Romania	1,1	0,6	0,5	0,6	0,6	0,6	0,5	0,6	0,7	0,4	0,5	0,5
Slovenia	8,2	7,9	8,4	8,7	9,1	8,9	8,4	8,1	8,2	8,6	7,5	6,4
Slovakia	4,0	3,6	3,8	3,7	3,8	3,9	4,0	4,0	4,0	3,2	4,3	4,6
Finland	13,3	13,2	11,8	10,4	11,6	9,4	9,9	8,5	9,3	8,7	9,0	9,2
Sweden	5,5	4,9	4,7	4,7	4,8	4,5	4,2	4,1	4,0	3,9	3,7	3,4
United Kingdom	5,4	5,1	4,9	4,9	4,8	4,7	4,3	4,1	4,1	3,8	3,7	3,7
Iceland	5,5	6,8	6,9	6,5	6,8	6,8	6,8	6,9	7,9	8,4	7,5	8,0
Norway	4,0	4,7	4,4	3,9	2,9	3,5	3,8	3,4	3,2	3,5	3,5	3,1
Switzerland	5,1	5,7	5,6	6,0	5,8	5,4	5,5	5,6	5,6	5,6	6,0	6,6

Figure 27- Females, "Usually"

By analysing the year 2019, strangely, the trend is inverted for the group "Usually" in which, involvement rates of females are constantly higher than those of males. Exception for Italy, Norway, Finland, Netherlands and Denmark.

Comparing rates, it is possible to notice that In Spain, rates of this group are perfectly the same.

Just to provide a complete analysis of the target 15-64, the following tables report values for the year 2019 of males and females that "Never" worked from home:

Males "Never"	
GEO/TIME	2019
Bulgaria	98,9
Romania	98,8
Cyprus	97,6
Latvia	95,7
Lithuania	95,5
Hungary	95,5
Greece	95,1
Italy	95,1
Croatia	93,4
Spain	91,2
Slovakia	90,7
Switzerland	90,2
Czechia	90,0
Malta	89,7
Norway	88,6
Germany	86,5
Poland	86,1
Portugal	84,5
Slovenia	83,6
Estonia	80,3
Ireland	78,2
France	77,5
Austria	77,0
Belgium	75,2
United Kingdom	73,5
Denmark	69,7
Iceland	69,0
Finland	66,1
Luxembourg	65,1
Netherlands	62,5
Sweden	61,4

Figure 28 - Average rate per Country, "Males, Never"

Females "Never"	
GEO/TIME	2019
Bulgaria	98,9
Romania	98,4
Cyprus	97,4
Italy	95,7
Lithuania	95,6
Hungary	95,3
Latvia	94,7
Greece	94,3
Croatia	92,7
Spain	92,3
Norway	91,3
Slovakia	90,3
Czechia	90,0
Germany	88,6
Malta	86,8
Switzerland	86,7
Poland	85,1
Portugal	84,4
Ireland	82,4
Slovenia	80,5
Austria	79,2
Estonia	79,0
France	77,0
Belgium	75,5
United Kingdom	73,8
Denmark	73,4
Iceland	71,6
Finland	70,8
Luxembourg	68,9
Sweden	64,3
Netherlands	63,3

Figure 29 – Average rate per Country, "Females Never"

As expected, Northern Europe Countries are placed at the bottom of the list, but Females are in higher positions than males. That means that even if, on a European overview, "Usually" female workers are much more than "Usually" male workers, this is not enough to guarantee a general women involvement higher than those of men.

According to the study conducted by ILO-Eurofound on 10 Eu Member Countries: some professions require workers to operate at a fixed workplace in order to perform work-related tasks. Other jobs require employees to constantly work outside the employer's permission.

The highest share of T/ICTM [telework/mobile work] *workers are the so called "knowledge" workers, high qualified employees, often in managerial and professional positions*.

Just having a look on some European Countries, it is possible to distinguish certain categories of workers: In UK, for example, these works are representants of the following areas[54]: 18% of them are managers, 24% have professional occupations, 25% are associated professional and technical occupations. In Netherlands 41% are managers and 24% are professionals.

Generally speaking, workers in agile modality are mainly occupied in higher level professions.

[54] Messenger J,Vargas Llave O., Gschwind L., Boehmer S., Vermeylen G., Wilkens M., 2017, pag 18.

By analysing the economic sectors that implemented the agile modality of work, instead, in the Netherlands the most widespread involvement is registered in information and communications (42%), in financial activities (36%) and in scientific and technical activities (28%); in Hungary, the presence is really spread in non-profit and non-governmental organizations; in Spain he prevalence in registered in the service sectors; in Sweden, the agile working is connected with high-status professions.

1.3.2. Worldwide overview

Just to have a general viewing of the worldwide introduction of agile working, from home and remote locations, it has grown 159% since 2005[55], more than 11x faster than the rest of the workforce.
The following graph[56] summarizes at the best the situation of the percentage rate of global businesses that are using flexible workspace policies:

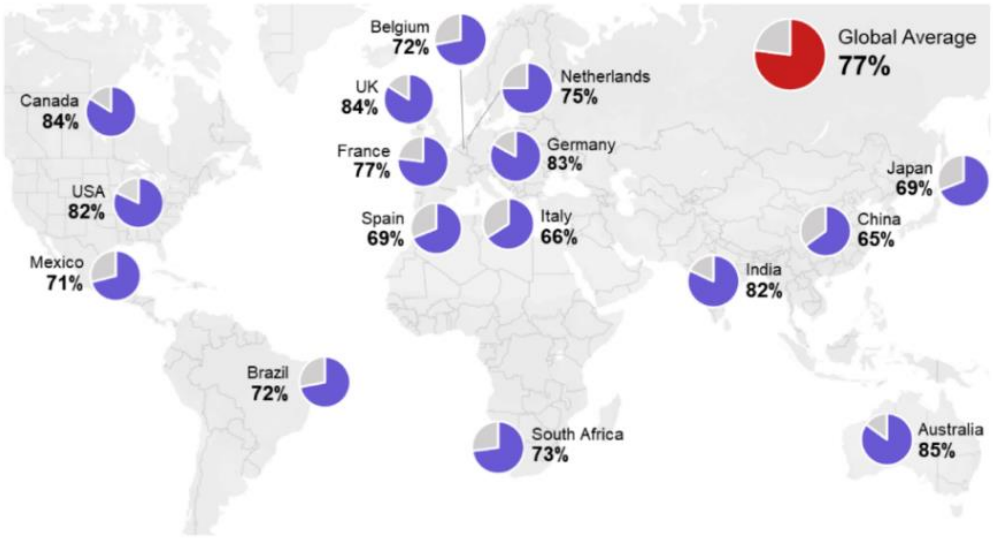


Figure 30 – Worldwide overview

It is possible to see that, on average, Europe places between America and Asia, mainly thanks to Germany and the UK. The most relevant value is that of Australia with an introduction rate of 85%.
According to twelve Worldwide Countries (such as US, Canada, Brazil, Japan, Germany, UK, India, Singapore, Russia, France, Australia and China), the biggest advantages on flexible working[57] are the following one, divided per range of age:

55 Merchant Savvy, 2020.
56 Dixon Mark, 2019.
57 Polycom, 2017.

Figure 31 – Biggest advantages divided per range of age

Chapter 2

Regulatory aspects of smart working

2.1. The legal definition of smart working

Before analysing the smart working in detail from a juridical perspective, it is worth introducing a wider concept: the job design[58]. The traditional name job design refers to the group of processes aimed to specify and redefine a working position, in terms of contents, methods, instruments, and relations. The main point is to satisfy the needs of both the organization and the employees. The subject reflects a way to organize all the workers' actions and tasks (job enrichment, job enlargement, job rotation) and to formalize all the competencies aimed to act (job description).

The job description analysis started in the first 1900 through the specific subject of "Scientific management", many authors analysed the topic, such as Gilbreth and Taylor (1900), Hackman and Oldham (1976), Herzberg (1959) and so on. The theme is wide and several factors were analysed, such as the task design, the job characteristic model, the motivating potential score, the job performance and dimension, and so on.

All these features impact on the workers' motivation and on their relationship with colleagues, heads, and instruments of work. Some authors assert that smart working is a specific type of job design, endowed with its own rules and principles.

Smart working (or agile working) is one of the main relevant themes introduced by the Italian Law no. 81/2017, specifically regulated by Articles 18-24.

Before the final introduction of this specific Law, the Italian regulation passed through various legislative decrees. The first one, the N. 2229, aimed to regulate the agile work in subordinated work, by distinguishing and eluding the circumstance of self-employment. The second one, the N. 2233, represented the first draft of the successive Legislative Decree N.2233 b, later become Law. The first version of the Decree omitted the specific features of work performance inferred in the individual agile employment contract. The Legislator intended to identify the performance through "objectives", however this meaning could have provided the risk to evaluate the work performance mainly, or only, by analysing results.

The Law. N. 81/2017 is divided into three Chapters (Ch. 1 on the protection of self-employment, Ch.2 on agile work, and Ch.3 on final disposition). It is evident the contrast between the first two chapters: one related to the independent work, the other concerning the subordinated work discipline.

[58] Martone A., Galanto A., Montonati P., Ramponi M., Righetti A., Sciaroni F., 2018.

The starting Article 18 presents the smart working not as a new contractual agreement, but just like a new way to perform a subordinated work performance. This new modality is a way to guarantee competitiveness in the labor market and higher productivity through a new work-life balance. The new employment-based work is established through an agreement between the worker and the employer, even with the organization of stages, cycles, and objectives. The agreement provides for the possibility to use technological tools to perform the working activity and specify the absence of specific time constraints and a fixed workplace. The only time limits are those of the daily and weekly work schedules. This represents one of the main differences with telework, in which the place needed to be previously established, and the work was carried on regularly, out of the standard workplace.

In smart working occurs a clear alternate between outside and inside the office. Besides, the workplace does not need to be previously established, in that sense the position lack specific importance.

From that aspect, it descends one of the main problems related to the smart working introduction: the control. It is clear that, without a worker's fixed position, the head cannot guarantee security and safety in the workplace and he would find difficulty checking upon the behavior of the worker. The head is responsible for the security and good performance of technological tools, provided to the worker. The method was not entirely unknown to the system: a regulatory precedent is found in article 14 of the Law no. 124/2015, for the promotion in the public sector of "new space-time modalities for carrying out the work performance".

The new discipline is also extended to the public administration within the limit of compatibility but it does not provide a specification on type of works that could be subjected to the new smart modality. In that sense, Law could be considered applicable to all the employed works. However, in practice, the agile working modality only fits with tasks that can be performed remotely.

On the point of smart working compatibility, I will present two specific models[59]: theoretical compatibility and organizational compatibility.

Concerning the former point, some contractual agreements could not be in line with the agile working's features, for example, apprenticeship contracts and part-time contracts. Even if not much wider, the past shows that some part-time contracts include the agile modality.

Regarding the organizational compatibility, instead, each enterprise has the role to analyse its internal professional figures and to evaluate whether they are suitable with the agile working modality. For this reason, before implementing the smart working, it is necessary to draw up an "Access clausula". This instrument is not only an evaluation process but also a strategic tool, used inside the organization, aimed to allow access to agile work, only to some specific organizational tasks.

In particular, some specific performances are not in line with the remoteness: those that require a constant presence on the field, working with machinery, and/or direct contact with the public.

[59] Cairo L., D'Avanzo F., Ferretti F., 2018.

To summarize, the specific functions that could match with the smart working are those for the employed personnel, in particular, roles in clerical tasks.

Just to get a complete overview of article 18, paragraph 4 refers to the fiscal incentives for the smart workers stating that "Tax and social security incentives, recognized to increases in productivity and employee efficiency, are also applicable when the work activity is provided in agile work mode."

This provision remarks the Ministerial Decree 25/03/2016[60] (Article 2, paragraphs 1 and 2), that predicts a subsidized taxation regime for result bonuses, linked to increases in productivity, profitability, quality, efficiency, and innovation. These increases are measured with objective standards, established in the corporate collective bargaining.

Analysing the Article 18 there arise some critics and some difficulties in the understanding of what regulator meant by. It is clear that agile working modality is viewed as a way to increase productivity and efficiency. The article focuses on two main themes: flexibility and subordinated work, based on cycles and objectives. Initially, agile work was supposed to be identified as a more independent and autonomous work in which the employee bears the risk of his performance; conversely, the establishment by the regulator of "agile work on objectives", creates an opposite vision of the starting wish. In fact, it is specified the importance of the employer's control on the worker, both related to the performance, both on the health and safety conditions, particularly linked to the alternating workplace.

Moreover, some jurists criticized the "establishment of agreement among parties" because it delegates the bargaining power to the individual power instead of collective bargaining. More specifically, the general thought criticises the value hierarchy: it could be better to delegate the agile work regulation to the individual agreements only in the absence of collective bargaining.[61]

About the form of the contract, it is specified (in the Article 19) that "The agreement is stipulated in written form for administrative regularity and proof, and regulates the execution of the work performed outside the company places. [...] The agreement also identifies the times of worker rest, as well as technical and organizational measures necessary to ensure the worker disconnection from the technological work equipment."

Essentially the paragraph clarifies minimum requirements for the validity of the agreement, then the second one explains terms for the withdrawal that "may take place with a notice of not less than thirty days […]".

On reflection, the request for the written form serves the interest of both the employer and the employee. On the worker side, it is useful for the clarity of the agreement: using the written form the employer needs to specify its control power and all the wrong behaviours that could lead to disciplinary sanctions; accordingly, on the employer side, the written form guarantees the public form of the conducts liable to disciplinary sanctions, by making effective any disciplinary action.

[60] Ministry of Labour and Social Affairs, 2016.
[61] Iodice D., Colombani R., 2017.

Moreover, the concept of withdrawal is crucial but, some critiques arise regarding what the legislator wanted to mean. It is doubtful whether the term "withdrawal" only refers to the agile work modality or the entire employment relationship. In that case, the collective bargaining is crucial for the legal understanding.[62]

Smart workers are also subjected to the same economic and legal treatment of employed workers that carry on the same tasks. That is clarified in the first paragraph of article 20 on "Treatment, right to lifelong learning and certification of workers' skills". This provision perfectly underlines the principle of equal treatment that bans any type of discrimination between the agile worker and the standard worker. It means that, even if the job performance is implemented outside the enterprise, the agile worker has the right to enjoy the same salary, the same discipline of premises, vacations, and trade union rights. The equal treatment discipline also regards obligations and duties which relate to the employment relationship: requirements of professional diligence, obedience, and loyalty, according to Articles 2104 and 2105 of the Civil Code.

Even if both agile and standard workers are subjected to the same norms and treatments, some aspects are not regulated by the Law, that need to be policed by the specific corporate agreements. These aspects could be: rules on meal vouchers, tickets, and travel allowances[63].

Moreover, Article 20 paragraph 2, refers to a fundamental feature of workers: the right to continuous learning. It establishes that agile workers have the possibility, but also the duty, to keep learning and to certify their new skills.

Among the discipline, the employer is considered the first liable for the safety and security of its employees, in the Civil Code this responsibility is mentioned in the Article 2087[64]. "The entrepreneur is required to exercise the measures that, according to the particular nature of the job, the experience and the technique, are required to protect the physical integrity and the legal entity of the workers". It follows that, to guarantee protection and security, the employer is indirectly required to monitor its workers (Article 21 of the Law 81/2017). At the same time the Article 4 of the Law no. 300/1970 underlines the bans of remote controls, and specifies that it is allowed only under some specific conditions: "The control systems and equipment […] from which also derives the possibility of distance control of workers' activity, can be installed only by agreement with the company union representatives, or, in the absence of these, with the internal commission". It is clear that controls on the workers' behaviour are legal only if they are aimed to verify the workers' unlawful conduct and detrimental to the company's assets. Infact, all the collected information can be exploited by the employer under conditions that guarantee privacy and protection to the worker.

[62] Iodice D., Colombani R., 2017.
[63] Cairo L., D'Avanzo F., Ferretti F., 2018.
[64] Art 2087 c.c.

Moreover, the head has the responsibility to guarantee safety and security in the workplace, even if the worker is in agile modality (Article 22 of the Law no. 81/2017). The head position is not easy, especially when the worker performs his activities in places unknown to the employer. That is why the legislator predisposes a particular document, to be presented by the head, in which he shows all the general and specific risks connected with the smart working. Even if the employer must guarantee these conditions, the worker needs to cooperate and complain about all the measures for the prevention of risks (paragraph 2).

Later, the successive INAIL memorandum no. 48/2017, remembered all the articles related to the agile working and clarified the characteristics and the use of devices for the agile modality.

To summarise the laws, regulations, memorandum, and articles, I will report them in a table to clarify the different rights and duties of workers and employers.

Summary of the regulation of safety in agile work[65]		
Obligation	**Source**	**Description**
General obligation of the employer	– Art. 2087 c.c. – Art. 18, c. 2 e 22, c. 1, L. no. 81/2017	- General obligation to guarantee the health and safety of the worker. - Obligation to guarantee the safety and proper functioning of the instruments assigned to the worker
Rest time	Art. 19, L. no. 81/2017	The individual agreement governing agile work must establish worker rest times.
Obligation to ensure disconnection	Art. 19, L. no. 81/2017	The individual agreement that regulates agile work must establish the technical and organizational measures necessary to ensure the disconnection of the worker from technological equipment.
Information on risks and use of equipment	– Art. 22, c. 1, L. no. 81/2017 –INAIL memorandum no. 48/2017	- The employer must provide the worker and the workers' safety representative with written information that identifies the general risks and the specific risks connected with the execution of the employment relationship in agile modalities. - The information must be updated at least annually. - The employer must inform the worker about the correct use of the equipment made available for the performance of the work in agile modality.
Cooperation of the worker	Art. 22, c. 2, L. no. 81/2017	The worker must cooperate in the implementation of the prevention measures adopted by the employer to eliminate or at least

[65] Table structure taken from Cairo L., D'Avanzo F., Ferretti F., 2018, pag 33.

		reduce the risks deriving from carrying out the work outside the company premises.
Maintenance	– Art. 18, c. 2, L. no. 81/2017 –INAIL memorandum no. 48/2017	The employer must ensure the constant compliance of the equipment supplied to the worker with safety standards through adequate maintenance.

The articles number 23 and 24 are the last ones related to the smart working, respectively referring to compulsory insurance for accidents and occupational diseases and contribution.

A key, not obvious point, is that agile workers can perform their tasks outside of the organization but not necessarily inside their houses. That is why, according to the Law no. 81/2017 Article 23, the worker "has the right to protection against accidents on the work and occupational diseases dependent on risks related to work performed outside the company premises" and "The worker has the right to protection against accidents on the work occurred during the normal trip from home to the place chosen for the performance of the work outside the company premises". The paragraph ends with a clarification on the worker's choice of workplace that needs to respond to "standard of reasonableness".

This type of criteria reflects a crucial element of juridical uncertainty because the legislator assigns to the INAIL a verification power about the merits of protection of the agreement.[66]

Even if the discipline is wide and it has been perfected over the few past years, there remain some problematic aspects and some issues on the application.

To summarize, the main problems are[67]:

- The impossibility for the head to control the performance of its workers. The feature of control is usually underestimated when employees work inside the organization. In the case of smart working, some issues might arise both in terms of protection of personal data and, in terms of juridical normative of work.
- The ability of the head to guarantee safety and security in the workplace. This is due to the lack of a fixed workplace and, accordingly, to the impossibility to establish a constant monitoring of safety at work.
- The relevant difference with the telework. This is essential to identify and evaluate all the duties of workers and heads on circumstances and performances at work.

[66] Iodice D., Colombani R., 2017.
[67] Cairo L., D'Avanzo F., Ferretti F., 2018.

2.2. Telework

Scholars assert that telework is the predecessor of the agile work. The discipline is based on the European agreement concluded on 16/07/2002[68] and implemented nationally in the agreement of 09/06/2004[69].

The starting European agreement between Social and Economic Committees was signed in Bruxelles and it is inserted into the European strategy perspective. Through the agreement, the European Council requested the Member States to modernize the organization of work. Among all the possible strategies to implement, the agreement referred to flexible working.

The negotiations on telework started in 2001 and were directed to all the Member States to guarantee a common arrangement. All the parties proposed telework to renovate work, but also to better the private life and to give workers more independence.

As already said, the agreement aims to guarantee a common framework at the European level, additionally, all the Member States need to implement the directives according to their national common traditions. In the application of the tools, States need to guarantee the same level of protection for workers. Moreover, the single States can add or adapt the agreement at their national level to afford their specific requirements.

These General considerations are followed by the body of the agreement, composed by twelve sections: II)Definition and scope, III)Voluntary character, IV)Employment conditions, V)Data protection, VI)Privacy, VII)Equipment, VIII)Health and Safety, IX)Organisation of Work, X)Training, XI)Collective right issues, XII)Implementation and follow up.

The second section fully describes the telework as "A form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer's premises, is carried out away from those premises regularly". The place constitutes one of the main differences with respect the smart working. While the telework needs to be performed regularly outside the organization places, in the smart working discipline the worker has greater freedom: he can perform its tools alternating both inside and outside the corporate. Also, teleworkers need to predetermine their workplace, usually the house constitutes the common choice. After having established and communicated it, the employer has the right and the duty to access in the place, to evaluate risks for the health and security of his workers.

In smart working, instead, the place is not fixed neither communicated. In that case, it descends the great difficulty for the head to guarantee safety and security.

Going back to the proper definition of telework, according to the second and third Articles of the Agreement, telework is a completely voluntary agreement from both parties' perspectives (Employer and Employee).

[68] Gabaglio E., Jacobs G., Bonetti A., Plassmann R., 2002.

[69] Interconfederal agreement for the transposition of the European framework agreement on telework concluded on 16 July 2002 between UNICE / UEAPME, CEEP and CES, 2004.

The structure of the agreement is predetermined: parties need to specify all the information on the type of work to perform, the person teleworkers can address their questions, the department teleworker is attached, and so on. Being a voluntary agreement both involved sides can refuse the proposal: according to Article 3, in fact, "If telework is not part of the initial job description, and the employer makes an offer on that, the worker may accept or refuse this offer. If a worker expresses the wish to opt for telework, the employer may accept or refuse this request." The refusal by the worker does not change any character of the contractual agreement and job conditions.

Jointly to the voluntariness of the agreement, the regulator also established its reversibility. Teleworkers can turn back to the standard modality following the head or its request. The European agreement did not establish a specific way to modify the contract, this aspect is delegated to the single collective agreements.

The "Employment Conditions" established in the Article 4 of the European Agreement, underline that teleworkers benefit the same rights of standard workers but, being them a special target of workers, the discipline needs to be integrated by collective or individual agreements.

Going ahead, the Article 5 deals with a sensitive aspect of telework: the data protection. This feature remains similar in the successive smart working discipline and provides that the employer is liable for the protection of data, used and managed by the teleworker in its professional activities. Here the legislator underlines a dual responsibility: the employer needs to inform his worker of all rules and laws about the data protection (for example restrictions in the use of the internet and sanctions), on the other side the teleworker needs to comply with these rules.

A similar aspect is faced in the "health and safety" section of the Article 8. Also, in that case, the employer is responsible for the health and safety conditions of his worker, by complaining about the Directive 89/391 and other collective agreements. The employer is required to inform the teleworker about all the company conditions and rules, he has to control their application and the right to access to workplaces; on the other side, the teleworker must apply the safety policies.

As already said, one of the main differences between telework and smart working is the stability of the external workplace. In teleworking, the employer can control and monitor his workers, it descends a soft issue on privacy. In that sense, Article 6, asserts that there exist some limits on the checking activity of the employer because the monitoring systems "need to be proportionate to the objective".

Among all the heads' legal responsibility, there stand some softer issues regarding the equipment (Article 8): the employer needs to guarantee provision and installation of tools which are necessary to work outside the company premises (if the telework isn't able to lonely get them) and the cost support for losses and damages to the apparatus and data used. On the contrary, teleworker needs to be responsible for the protection of the equipment and data used in his activity.

In the European Regulation, the employee has some duties and responsibilities too: he is responsible for the work organization (Article 9) and he needs to trainee both on the specific activities and on the

regulation and peculiarity of his particular form of remote work (Article 10). Teleworkers also have the same rights as standard workers (Article 11) both in elections and in terms of representatives into bodies. The last Article of the Agreement, the number 12, regards possible disputes and how to solve them.
As already said, the Agreement here described, is the European one signed on 16/07/2002. Italian jurisdiction instead, applied and implemented the accord later, in 09/06/2004.
Norms and articles are essentially the same, the main difference entails the Article 11: while in European Agreement the Article 11 regards teleworkers' collective rights in terms of representants into bodies, in the national implementation it refers to the collective bargaining. In that sense, in the first paragraph, it is provided that, being the telework a particular form of working, parties can conclude collective agreements to integrate or implement some principles. These bargaining, or induvial contracts, should consider the reversibility of the agreement (paragraph 2).

2.3. Differences between telework and smart working

After having analysed both telework and smart working in detail, it is easier to underline and summarize the main differences among them. Even if both forms exclusively refer to the subordinated work, there exist some visible differences.
At first, scholars and enterprises just considered smart working as a new way to intend telework, so a new modified form of working from home. Despite that, the regulation proposes to completely differentiate smart working from the previous discipline and legal definition. The analysis brings out some interferences and overlaps between the legal aspects and community bargaining, for both the two remote work forms.
The first difference, juridically relevant, is the workplace: Article 18, paragraph 1, of the already analysed Law N. 81/2017, specifies that the smart working can be performed both outside and inside the corporate premises. Only collective bargaining could impose some limits, that are related to the working time. The aspect of displacement could provide some legal difficulties, especially in measuring the timing of agile performance. In that contest, in telework, the problem was considered less prominent because, even if the performance was carried on outside the organization, the workplace was stable and fixed. Regards this aspect, there is no law or institutional document (both national and international) that reveals the absence of a fixed workplace as a distinctive difference between the two legal aspects[70].
Probably the presence of a fixed external place to perform the work activities was obliged by the impossibility to move on. In fact, in the years of telework promotion, the use of the internet and technology, in general, were linked to a fixed connection and position. That is why, some authors[71], assert that the requirement of a fixed workplace in telework was just a condition caused by technological innovation.

[70] Tiraboschi, 2017.
[71] Tiraboschi, 2017.

Other soft difference is the scope of the discipline: Article 18 on smart working, underlines the wish to better the work-life balance and to increase productivity and competitiveness.

On the other side, telework was considered a means to modernize the work organization for enterprises and public administrations and to guarantee more independence to workers. The difference is low because both express the wish to promote flexible work forms and to guarantee a better life standard. More interesting, in this aspect, is the single corporate bargaining that better specifies the theme of productivity and work-life balance in smart working.

Going ahead, the workers' protection in terms of privacy and health conditions is a relevant difference between the two aspects. While in telework, the fixed place guarantees the possibility to manage and monitor the conditions of the workplace, in smart working this action is quite impossible. Some corporate bargaining[72]do not consider applying to the smart working the norms on safety and health conditions provided by the Law no.81.

In terms of time and work agenda, telework is quite different from smart working. While in the last one the worker follows his colleagues' schedule, in terms of daily hours and weekly ones; in the telework, this was considered impossible. In the first introduction, the timing of work performance cannot be predetermined or measured, that is why the legislation did not consider applicable "normal working time arrangements, maximum working time, overtime, daily rest, breaks, duration and organization of night work"[73]. The law no.81/2017 attributed to collective bargaining the individuation of rest time and all the aspects concerning the work schedule. In the introduction of smart working the legislation tried to solve this issue by, actually, argue with the directives on telework.

Despite these differences, there are some common aspects[74]: the private and working life conciliation, the worker independence, the presence of common advantages between the firm (e.g. cost reduction) and personnel (self-government), and the use of ICT. However, Smart Working is more complete than teleworking.

Both the systems are similar in terms of workers' power even if telework differs in the level of their sovereignty and in the power delegated to the employee, who can, by agreement, discuss some authority conditions. Regarding the privacy and the right to rest, Italian regulation goes beyond, because it considers the right to disconnect.

[72] Snam and Femca-Cisl, Filctem-Cgil, Uiltec-Uil, 2015, Article 3 "Salute e Sicurezza".
[73] Legislative Decree no.66 8 aprile 2003, Articles 3,4,5,7,8,12,13.
[74] João Moreira Dias, 2017.

2.4. Collective Bargaining

According to the ILO convention, "Collective bargaining refers to all negotiations between trade unions and employers for determining working conditions and terms of employment, including issues related to pay and working time, and for regulating relations between employers and workers."[75]

In Italy, until before the introduction of Law no.81/2017, the existing regime of agile working was the result of collective bargaining. It could be considered as a very challenging legal regime, so it is tricky for firms to bear the burdens intrinsic in such a procedure.

The Law introduction was been accompanied by the single collective bargaining, mainly in Big Enterprises, and in Small and Medium Enterprises, even if only concerning some specific sectors such as Agricultural, Artisanship, Energy, Metal machinery, and Alimentary[76].

The idea behind the starting introduction is that productivity and performance should be principally offered through remote work, and it is necessary to modify attitudes and break with the concept of physical presence in the workplace[77].

According to Italian Law, Collective bargaining can take place at different levels[78]:

- Inter-confederal, whose task is the definition of general rules that affect all workers regardless of the production sector to which they belong
- National category
- Inter-Confederal and category territorial
- Corporate category

In that context, I will refer to collective bargaining at the National and Corporate category.

The agile work discipline is peculiar and not easy to implement, in fact since the introduction of Law no. 81/2017, there resulted in a contention between the Law itself and the role of collective bargaining. These two disciplines are not always in accordance, sometimes they overlap and sometimes are in contrast to each other, for that reason it is necessary to establish an order on the source's preference.

The theme that should be analysed is that of deliverability with regard to the collective and individual bargaining, even if it is complex and not easily exploitable. The examined Law no.81 defines all the specific aspects of the agile work and, in almost all the topics, does not refer to collective bargaining. Probably the legislator intentionally wanted to avoid the reference to this specific discipline, to allow the diffusion of agile work even without national collective bargaining or without collective bargaining, especially in Low and Medium Enterprises. The "saltum" of collective bargaining can relate to the direct consequence to allow even small enterprises the possibility to introduce agile working. There could be a rationale behind that, in fact, in Big and Multinational enterprises, there already exists a regulation of

[75] Eurofund, 2020.
[76] Occhino Antonella, (2018).
[77] João Moreira Dias, 2017.
[78] Dictionary of workers' rights.

smart working through collective bargaining at a national or international level (as already said, smart working is an application already implemented in the business reality even before the introduction of the official Law in 2017)[79].

In practice, it exists a double activation channel for agile work: the specific one, employing individual agreements in compliance with Law no. 81/2017; and collective bargaining. The main difference is that only the activation of agile modality through individual agreements can lead to normative advantages showed by the second section of Law no. 81/2017[80].

Concerning fonts and levels of application, it needs to be an order to refer to. In principle, however, the order of the sources must reflect the pre-eminence of law no. 81/2017 and also of the applicable collective agreement, if applicable, in compliance with the non-regression clause of the respective provisions by the individual contract. The indisputability "in Pejus" by the agile work pact, in theory, should be considered towards the law and then towards the collective agreement.

Accordingly, the collective agreement must then be considered in its relationship to the Law, to possibly recognize the derogation in pejus only in the cases provided for by art. 8 of the Legislative Decree no. 138/2011[81].

Among the complex discipline, there arise troubles in terms of time. The collective bargaining stipulated before the implementation of the Law no.81/2017 should provide some contrasts with the Law itself. Scholars questioned the derogation and in particular wondered about the possibility of collective bargaining to derogate "in Pejus" the Law (the answer should be negative), and if the collective bargaining cannot derogate "in Melius" the Law (the answer should be negative too). Some references are also made to the individual bargaining, even if there coexist differences among the specific Law and the contract, it always prevails the specific Law. Moreover, Article 18 of Law no. 81/2017, cannot be intended to derogate the normative neither to the individual bargaining nor to the collective one.

The key point is the understanding of the crossing mechanisms between general discipline and specific contacts.

Regarding the timing of contracts, it could be easy to deliberate that all the bargaining concluded before the introduction of the law no.81/2017, should be considered inapplicable. Actually, it is not so: the time is not consistent with the application and implementation of a specific contract because the topic of deliverability is considered independent from the starting date of the contract.

It is necessary to say that, even before the specific agile work regulation, some collective bargaining already previewed the smart-working implementation. The presence is detectable by the terms "Experiments" or "Pilot projects".

[79] Carinci F., Mainardi S., (2018),pag 81.
[80] Giovani giuslavoristi Sapienza Group, (2017).
[81] Carinci F., Mainardi S., (2018).

2.4.1. The target for agile working

The law no. 81/17 has been integrated by paragraph 486 of the Law no.145/2018.[82] The specific paragraph 3-bis enlarged article 18 by deeply providing the target of workers that should have the priority in enjoying the agile working discipline.

The paragraph 3-bis asserts that: "Public and private employers who enter into agreements for the agile work execution are required in any case to recognize the requests made by workers in the three years following the end of the maternity leave period […], or by workers with disabled children […]".

To summarise, there prevail two main criteria to prefer a worker to another one: the esteem of travel time from home to the office, and private reasons such as family conditions and medical necessities.

Beyond that, there could be several other reasons to favor a worker in the implementation of smart working, the specific rationale is subjective to each company and internal evaluations, that is why the single collective bargaining is in charge of establishing the priorities. In some contracts, it is possible to establish some strict access criteria, while in some others it is possible to find out just priority criteria. The first case includes, for example, the Agreement of Eni Group on the Smart Working. In particular, at point 3 it is specified that "The recipients of this agreement are new mothers, new fathers, and parents with a child in adoption / pre-adoptive foster care"[83].

The second type instead, is more common among collective bargaining and refers to a wider target. In practice, some contracts prioritize who lives far away from the office and so deploys high travel time (for example the agreement on the smart working of Credito-Assicurazioni Sara 2018[84]), some others prioritize workers who proved healthy problems or whose family members are sick (for example the agreement on the smart working of Credito-Assicurazioni Society Cattolica di Assicurazione 2018[85]), and again the agreement on the smart working of Credito-Assicurazioni Ubi[86] established the priority to "requests made by employees with particular personal and/or family situations "disability, pregnancy, the presence of children up to 6 years or family members in conditions of serious disability, minor children with behavioral problems or special educational needs or specific learning disorders, as well as the relevant distance between residence and assignment organizational unit", and many more.

In the introduction of the paragraph 3-bis, the legislator does not directly refer to the collective bargaining but, just in case of abundance of criteria, the Article 18 could be integrated with the collective bargaining directives; on the contrary, if the collective bargaining lack of information, it is necessary to integrate it with the paragraph 3-bis dispositions [87].

[82] Law n. 145 of 30/12/2018, Paragraph 486 *Italian Official Gazette, General Series* n.302 of 31-12-2018 - Ordinary Supplement n. 62.
[83] ENI Group and Femca-Cisl, Filctem-Cgil, Uiltec-Uil, (2017).
[84] Sara Assicurazioni, Sara Vita and First-Cisl, Fisac-Cgil, Fna, Snfia, Uilca, 2018.
[85] Cattolica Di Assicurazioni Group, First-Cisl, Fisac-Cgil, Fna, Snfia, Uilca, 2018.
[86] Ubi and Fabi, First-Cisl, Fisac-Cgil, Uilca, Unità Sindacale, Falcri Silcea Sinfub (2018).
[87] Cozzi Giulia, 2019.

To summarize, those workers who have specific priorities could be individuated through some specific parameters, divided into four macro-areas: I) Technical and Organizational conditions (such as type of task and compatibility with remote work); II) political and management choices (such as type of contract, seniority); III) experimentation in some fields or production units; IV) Sustainability of work (it is intended to favorite workers with health problems or those who live far away from the office)[88].

After the introduction of these principles and priorities there arose several doubts and critiques:

First of all, the limited choice of recipients was not understood: there are many similar worker categories, already protected by the Law, which are excluded. In general terms, where a Law introduces lists of selective, and therefore mandatory workers categories, there stands the risk to exclude people deserving of equal protection. Moreover, the real nature of the Law and the terms within which to enforce it, is not so clear. In particular, it exists the doubt on the submitting time of applications and if the possibility of implementation cannot be granted to other workers, in the three years following the end of the leave. The third element of perplexity is the total absence of references to the necessary compatibility between the right and the company's objective organizational/production needs, and on the other with the tasks of workers[89].

2.4.2. Powers and Duties

"The new provisions of Law no. 81/2017 on the subject of agile work are added (and if contradictory they replace) to the ordinary ones, in the various aspects relating to the governing and conforming powers, the control or supervision, the disciplinary, the resignation and dismissal, and the obligations both for work and remuneration payments, and the protection of the company's competitiveness (so-called loyalty obligation) and health (so-called safety obligation). It is a mere "modality" for the execution of the subordinate employment relationship"[90].

In regards to the powers, the introduction of Law maintains the matter of the general discipline by means a sort of reference to the individual agile employment relationship regulation, which determines a subordinate structure "remodeled" at the level of the individual contract. However, the agile work pact proves to be a real pivot not only for the constitution of the modality, but for its particular discipline, authorized by the Law also in a matter, crucial for the confirmation of the contract subordinate nature. Nevertheless, the Law is explicit on the devolution of powers' regulation to individual private autonomy. These provisions can directly affect the relationship between the Law and the individual contract, which in this case can directly limit the exercise of the employer powers as already limited by Law.

In regards to the duties, the interaction between sources is more intense and it is fair to see how the particular agile Law provisions prevail over ordinary ones, unless they are secundum or praeter legem

[88] Dagnino E., Tomassetti P., Tourres C., (2016).
[89] Cozzi G., Menegotto M., 2019, pag 20-23, 2019.
[90] Occhino Antonella (2018).

(since in such cases they are joined), replacing them based on the mechanism of the abrogation. They almost repeal the previous ones, not because the new Law regulates the entire matter already regulated by the previous Law, but due to incompatibility between the new and previous provisions, if the new (particular) are found contra legem (general).

It is a familiar mechanism, similar but not equal to the abrogation, due to the particular structure of the work discipline, which generally applies to the only subordinate employment contract and at the same time one by one to the many particular relationships that derive from it. Each one is regulated not only by the general discipline, but also by the particular one relating to the individual relationship in question, and now also to the agile employment relationship. It follows that the contradiction between a provision on the agile employment relationship and one of a general nature, determines the non-application of the last one to give space to the application of the agile one[91].

2.4.3. Secundum Legem and Praeter Legem

In the agile working discipline, it takes effort the convention that "constitutes a typical source of the unwritten law. The peculiar characteristic consists in the fact that it is not the product of the will of a specific body with regulatory power, but a rule that is formed as a result of the constant repetition of a given behaviour within a given community"[92].

Traditionally it distinguishes in: secundum legem, which is that referred to by written laws; praeter legem, which regulates matters not regulated by written sources; and contra legem, that is the repeal custom of legal regulations.

Collective clauses can be considered secundum legem because they anticipated the Law in imposing the principle of equal treatment of the agile worker concerning other employed workers. Collective agreements have often anticipated the Law in this regard.

Collective clauses governing the various issues relating to working hours and which remain applicable, if not improved individually, can be considered praeter legem. That is because it constitutes an innovative discipline developed in an area where the legislature has not intervened with its provisions[93].

2.5. Security and Privacy in Smart Working

Through the diffusion of smart working, it occurs a spread of information and soft data, that run outside the Corporate premises, moreover, the diffusion of the Internet of Things (IoT) increases the data available and the possibility to penetrate the corporate and to steal information.

Moreover, all the remote employees, who have access to the corporate Net by using their own devices, can be easily penetrable by hackers who steal private information through the use of malware.

[91] Occhino Antonella (2018).
[92] La Legge Per Tutti (2015).
[93] Occhino Antonella (2018).

On the side of IoT, those are really risky devices because they rarely own their security protections.
Technically speaking, the devices connected to the Net, which could be one of the main access to treats are called “Endpoint”. These Endpoints are one of the most vulnerable and sensitive concepts related to cybersecurity.
The year 2018 was the worst period in terms of cyber-attacks, the number increased ten times respect the previous year and the economic loss is estimated to be about 500Miliards of dollars[94].
Regarding the sensibility of the Endpoint, some Reports show that the risk is high: corporates face security problems daily and probably they should developpe a system to defeat them internally.
Just to give some numbers: 100% of security systems fail after a period; 70% of privacy violations start from the endpoint; antiviruses can block only 43% of threats[95].

2.5.1. Legal aspects of security

The spread of smart working, and in particular the coercive introduction after the pandemic situation due to the Covi-19, created a sensitive approach to the theme of computer crimes.[96]
Even if the smart working creates a wide range of advantages and, for sure, the possibility to generate the “Business continuity” by the ongoing work, perform and carry on tasks preventing the contact with other people, it creates a risk for companies that could lose control on its information and in particular, could be subjected to a loose in application of policies and technical measures established in terms of security and privacy. This event could happen when employees, work in BYOD (Bring Your Own Device) modality. That means that the company does not comply with measures regulated by article 8 of the already described European regulation, but they allow workers to use their proper equipment.
The legal starting point of cybercrimes is the Legislative Decree no. 231/2001. It represents an anti-corruption Law that was emanated to govern the administrative responsibility of legal persons, companies and firms but also associations and corporations which have not legal personality. In the beginning, the only crime considered was that of “computer fraud against public bodies” (Article 24). This Article provides for pecuniary sanctions in case of frauds against State or public bodies.
In 2001, as we already anticipated, cybercrimes were not mentioned. This juridical aspect was introduced by Law no. 48/2008 that ratified the Budapest Convention of the Council of Europe on cybercrime by making some changes to the criminal code and the criminal procedural one and consequently to the Legislative Decree 231/01 introducing, among the predicate offenses, this case.
With the update of the Legislative Decree, any subject with a juridical personality, but also societies and associations without a juridical personality (unless the State and public bodies), has a criminal liability arising from administrative wrongdoing.

[94] Ruggiero Gianpiero, 2019.
[95] Ruggiero Gianpiero, 2019.
[96] Zabbeo Nadia, 2020.

Just to give a parallelism, while analysing the telework and smart working, the various mentioned responsibilities (such as security, safety, devices, and so on) lied on the employer and not on the entire corporate.

In that case, penal responsibility refers to the company itself. It is a strange assumption because the Italian Constitution, in Article 27 of the first section "Right and duties of citizens", underlines that the penal responsibility is a personal tool. With the introduction of Legislative Decree 231/2001, instead, it has been established the penal responsibility of bodies. It is impossible to arrest a public or private body, that is why both Legislative Decree 231/2001 both the Law no. 48/2008 refers to pecuniary sanctions.

The Decree underlines some specific cases in which the Corporate is responsible for the actions carried on by its workers. Specifically, according to the Article 5, "The entity is responsible for crimes committed in its interest or to its advantage: a) by persons who perform functions of representation, administration or management of the entity or by an organizational unit with financial and functional autonomy as well as by persons who exercise, the management and control of the same; b) by persons subject to the direction or supervision of entities in letter a)."

Meanwhile, the second paragraph of Article 5, underlines that: "The entity is not liable if the persons indicated in paragraph I have acted in their exclusive interest or that of third parties." The article asserts that the two conditions of interest and advantage do not need to coexist. That means that it is sufficient an interest (that could be identified ex ante) or an advantage (that could be identified ex post) to result criminally liable.

Article 6 of the same Legislative Decree refers to all the possible situations in which the Corporate could be considered exempt by the responsibility. The By-law distinguishes two types of subjects: person in top management positions and subordinated persons. In the distinction it is central to underline that if the crime is committed by a top manager, the corporate penalty is not certain but alleged, in the case of criminal action carried by an employed, the corporate will be considered guilty if the organization didn't comply with obligations and supervision.

2.5.2. Updates in data protection

Talking about Data protection and privacy the mention to the European General Data Protection Regulation (GDPR)[97] is necessary. The Law imposes responsibilities to companies that focus or accumulate data linked to people in the EU. The regulation was activated on May 25, 2018[98]. GDPR replaced the older data protection directive from 1995[99] where companies were required to protect personal data, even if the requirements were very fewer.

[97] European Parliament and Council Of The European Union, 2016.
[98] Ben Wolford, 2020.
[99] European Parliament and Council of European Union, 1995.

Several aspects[100] were enforced or modified such as:

1. Clarity when managing client data,
2. Duty to account data that has been missed, stolen, or opened by unapproved subjects. (In that situation, companies must inform the responsible data protection authority within 72 hours),
3. Privacy by Design (this aspect is aimed to limit the accumulated data),
4. Privacy by Default (that guarantees that personal data is not shared with the public),
5. Simple transfer of personal data (the transfer of data must be block free)
6. Nominate a data protection manager (Companies, which control sensitive information, must hire a data protection officer who can be internal or external to the company),
7. Data protection in non-EU states remains difficult because the data protection regulations of non-member states are often less severe.
8. Companies outside of the EU are also subject to the GDPR if they manage information of EU citizens.
9. Violations may be penalized with strong payments (it could reach 4% of the international annual turnover or 20 million euros).

More specifically, Article 83 of the GDPR, refers to the "General conditions for imposing administrative fines". It plans the sanction of 10 or 20 million or the 2% o 4% of worldwide turnover referred to the previous exercise.

By comparing the GDPR with the Legislative Decree no. 231/2001, there are some evident distinctions in terms of pecuniary sanctions. The Second and Third Sections of the Decree relate to this specific theme, respectively “General Sanctions” and “Administrative responsibility for criminal offenses under the Criminal Code”. These parts distinguish and describe all the different types of sanctions and the monetary entity of each of them.

One of the main differences is the amount of the sanction to pay in case of crime: the amount is lowered respect that established by the GDPR.

Obviously, the currency was established not in Euro, but nowadays it could be considered the updated according to which the sum can reach a maximum of just over 1.5 million euro according to a system based on quotas, set in the first evaluation by the judge who determines the number (not less than 100 and not more than 1000) and, in the second evaluation, by the court which has the task of establishing the share pecuniary value, whose maximum amount is 1549 euros. It is established in consideration of some variables: the seriousness of the crime, degree of responsibility of the entity, will and remedial actions, and actions of corporate reorganization[101].

[100] Dswiss, S&N, 2018.
[101] Zabbeo Nadia, 2020.

The specified amount could seem low and quite insignificant but, it does not represent the only sanction that could arise from a crime. Article 9 of the Decree underlines not only the pecuniary sanctions but also some other forms of punishment: I) Disqualification sanctions, II) Confiscation and III) Publication of the judgment. The first one is really hard because they provide to an interruption of the business, moreover, it is likely to add the interruption or revocation of concessions and allowances and the ban to bargain with public administration. Other sanctions can be identified as the exclusion from funding, subsidies, benefits, and possible withdrawal of those already granted, the prohibition of advertising of its services and/or products.

2.6.Legal iter in Public Administration

Public Sector experimented with a harder and tricky application of smart working respect the private sector. The private area was the starting point of the implementation and a means to experiment with the applicability. In fact, the key law N.81/2017 does not predict a direct application of smart working to the Public Administration. Article N. 18 (Paragraph 3) only indicates that smart working can be applied to the Public Sector within the limits of compatibility.

Law N.124/2017 (Madia Law[102]) was the beginning of the public sector reform on new forms of work. The objective was the better conciliation of work-life balance for public workers. The specific Article 14 establishes to set annual targets for the implementation of telework and its experimentation. The Law also fixed a minimum requirement for the agile workers: within the limit of three years, it needs to be ensured to at least 10% of public workers who want to experiment with the new modality.

The Madia Law introduced the successive Law N.81/2017. Both the Directives were applied and implemented in the successive Directive N. 3/2017. It essentially repeats and confirms the disposition of the two previous laws and directly regulates the smart working with a specific reference to the public sector.

Each administration has its budget and resources, that is why each of that need to enforce activities autonomously. According to the Decree, each public administration has the responsibility to establish criteria and priorities, individuate the compatible activities, set the objectives, and enforce conventions, agreements, courses, necessary to train and guarantee the activation of the modality within the limits of technological, human and monetary resources available. It is also confirmed the limit of at least 10% within the three years.

There are not many smart public contracts, because of the tricky iter and the difficulty in the implementation through the public platforms. The first smart public contracts were activated by the city of Milan, Turin, and then by the International Ministry and Economic Ministry. The agreements are

[102] L.n. 124 of 7/08/2015, *Italian Official Gazette, General Series n.187 del 13-08-2015*

heterogeneous, they change in period, hours of smart work, number of workers, type of control, and many other distinctive aspects.

2.6.1. Changes with Covid-19 pandemic

The spread of the Covid-19 pandemic forced all the public and private institutions to implement smart working. The first chapter already provides a clear overview of the agile working penetration rate, among the past years. It is clear that small and medium enterprises and public administration resisted the implementation. The great difficulty is the development of technology and the attitude of managers.

Until the spread of the pandemic, smart working was considered an experiment and a voluntary innovation, from March 2020 the first Coronavirus Decree n. 9/2020 officially started the process of coercive introduction of agile work among all the enterprises.

Public Administration had a longer and harder introduction, based on authorizations, modules, approvals, individual and collective bargaining. The Legislative Ministerial Decrees from March 2020 strongly simplified the introduction of smart working by providing easy solutions, such as public access to a common Cloud to share information, the possibility for public employed to use their own devices, the use of videoconferences to communicate and a simplified bureaucracy. These processes, even if forced and not easy, are driving the public sector to align with technological innovation and to experiment smart working in a perspective of development and improvement.

Chapter 3

Case Study: Survey of the Italian Public Administration

3.4. Classification of Public Administration

The structure of the Public Sector is complex and large, that is why, before presenting the survey, it could be helpful to the reader to have a general summary on it.

Factors that determine PA are various (norms, objectives, context, and individuals) and the number of institutions that compose the sector is huge. Starting from 2016 the National Institute of Statistics (ISTAT) decided to monitor data and update them every two years with the objective to get a statistic overview of public institutions' structural and organizational composition.

The second Permanent Census of Public Institutions was conducted in 2018, covering 12.848 institutional units and 106.262 local units, with 3.321.605 employees. The first results were released in December 2019, including human resources, personnel training and geographical distribution.[103]

A first classification is based on institutions legal form, that ISTAT aggregated in nine clusters:

1. State Administration and Constitutional Body
2. Regions
3. Province and Metropolitan City
4. Municipality
5. Mountain communities and municipalities
6. National health service company or body
7. Public University
8. Non-economic public body
9. Other legal forms

Basing on this classification it is possible to analyse various dimensions.

A relevant one is the type of contractual agreement. Human resources in public administration are mainly employees (94,5%). Their contracts are classified in permanent employment (3 million), fixed/term contract (290.000), not employed (195.000), co-workers (181.000) and temporary employees (14.000). The remaining 5.5% of staff in-service - about 195 thousand units - is represented by non-employees or staff employed in other forms of contract[104].

[103] ISTAT, (12/2019).
[104] ISTAT (01/2019), Table 1.2.

Among the employees, 54,6% fall into the first category "State Administration and Constitutional Body", immediately after it follows the "National health service company or body" with an employment rate of 19,8%. The following graph shows the percentage rate of employment in the nine juridical forms.

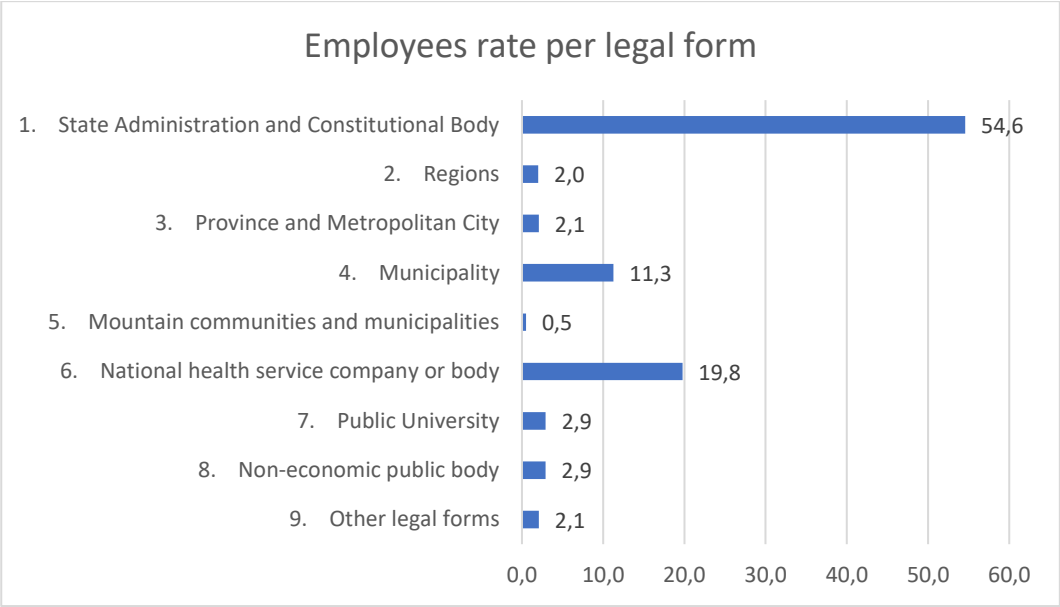


Figure 32 -Employees rate per legal form.[105]

In the period 2011-2015 Public Administration suffered some changes and reforms, due to the blocking turnover and the containing of public expenditure there was a decrease of employees (about 1,1%) that, however, bounced back in the following three years 2015-2017.

Regarding the gender, women employed in public administration are 2 million and represent the largest component (56.9% of the staff in-service)[106]. The highest presence of women is recorded in the bodies of the National Health System (SSN) and the lowest values in Regions and public universities.

Even if public sectors are still backward, employees periodically attend training activities mainly organised and financed by the National Health System.

The following figure shows that, till now, the activities were mainly provided through classes and seminaries so, the usage of internet such as video calls (3,1%) and e-learning (4%) is quite low and meaningless[107].

[105] Data taken from ISTAT (01/2019), Table 1.1. I aggregated clusters "Metropolitan cities" in the third cluster presented; and the cluster "non-economic public body" in the eighth one.
[106] ISTAT (01/2019), Table 1.3.
[107] ISTAT (01/2019), Table 4.7

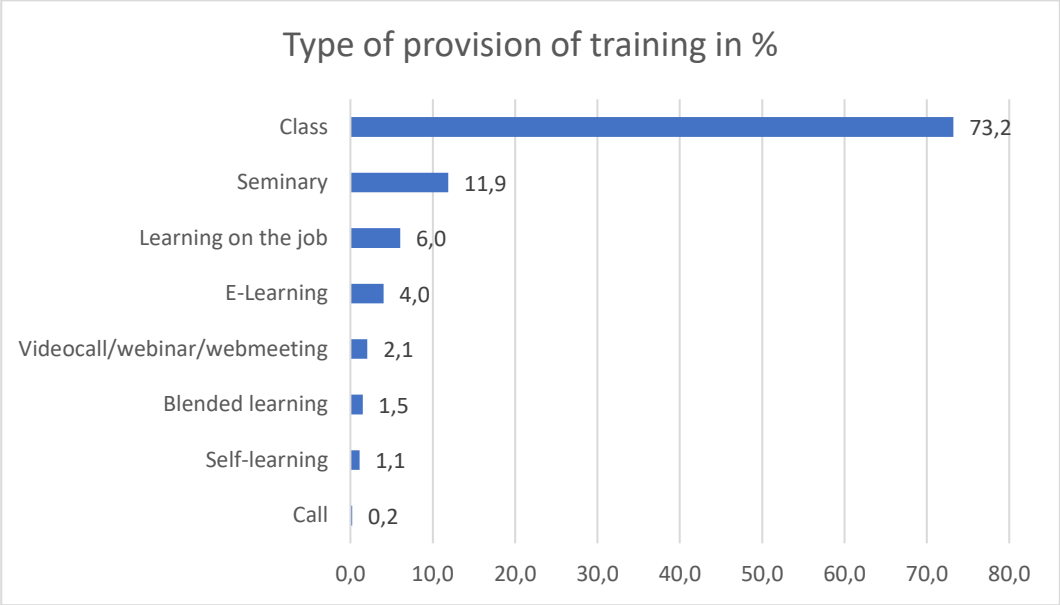


Figure 33 - Type of provision of training in %

Regarding the content, in 2017, public institutions focused on technical subjects training (45.2% of participants) connected to the exercise of institutional mission, and legal regulations (30.9% of participants). On the other hand, training on digitalisation involved less than 5% of participants.

Almost all public institutions used the web for data management and the provision of their services. The use of cloud computing services (30.5%) is more limited, but still significant, while mobile applications (19.4%) still seem little exploited[108].

Seven out of ten public institutions identify the lack of financial resources and the lack of adequate training in ICT as the main obstacle to the digitization process.

In fact, the most advanced technologies seem not to be very widespread: only 5% of public institutions analysed big data and used Internet of Things technology. In this scenario, public universities distinguish with a broader and more complete level of digitization: all or almost all use the web or social media, 84.5% developed cloud computing services and 73.2% experimented mobile applications. In these two technological segments, the propensity to digitization is greater in the North-East and Central regions, with values always higher than the national average values[109].

3.5. Issues and strengths

Before the Covid-19 pandemic, the penetration rate of smart working in Public Administration was really low, even de literature didn't focus on the investigation of this area, neither on leverages and possibilities of application. All the studies concentrated on private companies, that is why in 2017, the Smart Working Observatory of Milan started a deep study of smart working adoption level in public sectors.

[108] ISTAT (01/2019), Table 4.3
[109] ISTAT (01(2019), Table 5.1

Data, benefits, and weaknesses have been already discussed in the first chapter of this work. Just to remind, the smart working penetration rate in 2019 was about 12% respect the 58% of big enterprises, a number that clearly represents the slowness of the Italian public sector.

By analysing papers and numbers, the first question readers would ask is "Why Italian public administration is so lagging behind private enterprises?".

Undoubtedly there are a lot of issues that could raise for public services. In 2017, a study of the Oxford University analysed civil services of 31 worldwide Countries and collected strengths and weaknesses basing on an Index: the International Civil Service Effectiveness (InCiSe) Index. The InCiSe is an international indicator that analyses national governments, international organizations, civil society partners and academics on dimension and metrics.

The Italian civil services were ranked 27th overall on the Index. The three main values, below the mean of the total investigated Countries, were the capabilities, the integrity and the fiscal and financial management[110].

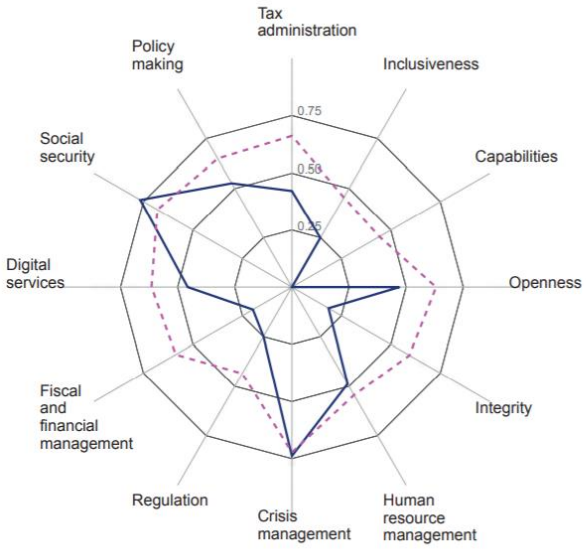


Figure 34 – Indicators of Italian civil services [111]

The connected Article of "Il Sole 24Ore"[112] also inserted in the main issues the Transparency defined a general picture of weak points of the Italian public sector.

Starting on human resources management, it could arise a lot of critics. Generally speaking, all the productive institutions rely on the attraction of new talents and encourage them to be more productive and to stay. Incentives could be based on competitive remunerations that respect the private sector and on meritocracy. The general operating of the Italian public sector slightly lacks that. Even if the Italian

[110] Blavatnik School of Government and the Institute for Government (2017).
[111]Figure taken from Blavatnik School of Government and the Institute for Government (2017). The spotted line represents the average value of all the analysed Countries per dimension; the blue line are the values of Italy.
[112] Tonin M. Trebbi F. (2017).

public salaries are among the huger remunerations respect the OCSE Countries, that doesn't reflect the competences and the background of employees. The general composition is based on old employees, with low levels of education and low capabilities of problem-solving.[113]

All these aspects strongly affect the performance, the digital progress and, accordingly, the introduction of smart working.

Obviously, there are not just negative aspects, according to the Incise Index, the Italian public sector has great strengths. The 2019 InCiSe based on 12 parameters, included 38 countries (7 more than 2017) and utilized more than 46 metrics to assess the performance of central civil services around the world.

I analysed this index to understand where the Italian public sector performs better and what is the positioning respect the other 37 world countries.

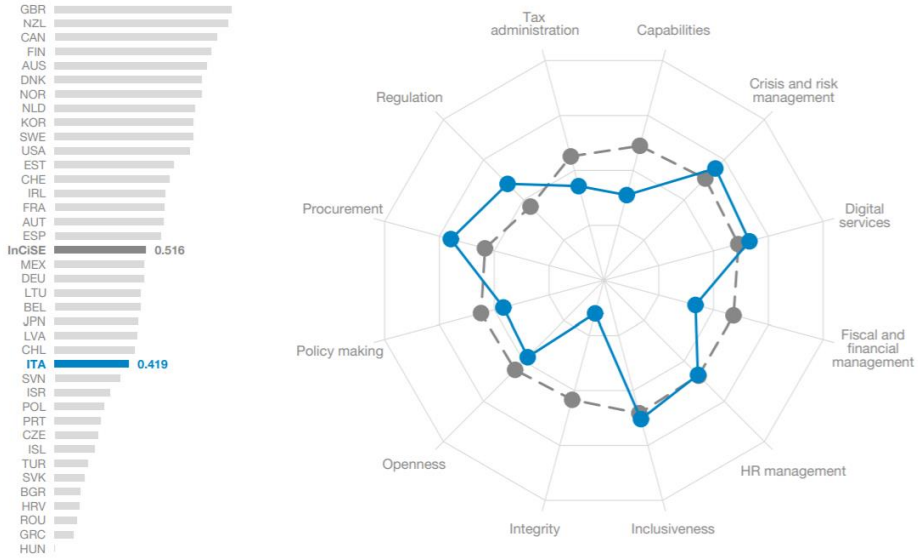


Figure 35 – Italian civil services, indicators and ranking [114]

According to the Results Report 2019, Italy is ranked 25th on the index. The graph clearly shows strengths and weaknesses to respect the average values. At first view, it is evident the improvement of values respects the previous two years (see prior figure).

The maximum value is achieved in the Procurement, in particular on metrics of e-procurement systems and policies for central government procurement. Also regulation, digital services, inclusiveness, crisis and risk management are above the average values. Absurdly, digital services metrics resulted high scored in the availability and usability of online services for frequent business actions. I commented on this value as absurd because it is not in line with data analysed till now and it proves that the Italian public sector has capabilities to implement and to avail of smart platforms and services. Another good metric registered in the Index analysis is the readiness to learn, this metric is included in the capabilities

[114] Figure taken from ISTAT (17/12/2019). The spotted line represents the average value of all the analysed Countries per dimension; the blue line are the values of Italy.

indicator that is ranked less strongly respect the average of other countries but, at the same time, drastically increased respect the two previous years. That probably means that the government strongly invested and incentivized employees' capabilities. Among the lowest values still fall in integrity and fiscal and financial management.

3.6. The survey

The analysis on the SW penetration in public sectors has been already conducted by the SW Observatory of Milan, it was the first institute to seriously study public institutions and the technological innovation inside them. Results were characterized by a small SW penetration rate in public offices. For that reason, in this working paper, I decided to investigate the same area in the extraordinary condition of the Covid-19 pandemic, in which the SW penetration rate is near the totality of workers.

The present investigation has multiple objectives. At the beginning of the chapter, I anticipated that my survey focuses on the reactions of public workers to the smart working forced introduction due to Covid-19. Besides this principal objective, I want to investigate how many public employees already knew smart working and how much of them already experimented with this work modality. In addition, I proposed some questions to identify the correlation between the Smart Working introduction and the employees' performances, work-life balance, satisfaction, and incentives to work.

The collection of data and literature presented before has been necessary to create a theoretical background, to structure an efficient model, and to better understand results.

3.6.1. Structure

The study has been conducted in an anonymous form. Workers answered an online questionnaire, based on 25 questions, by connecting with their own devices and by using a common link that I spread all over Italy. The use of social media and personal references helped me to get word-of-mouth and to reach different targets of workers.

The process that leads to results is based on different steps. First, I analysed all the answers collected, individually and collectively, to understand the main trends. Then I collected all the information on an excel-file in order to gather answers by different investigation areas. Finally, I built graphs for each question to present a clear overview of the answers.

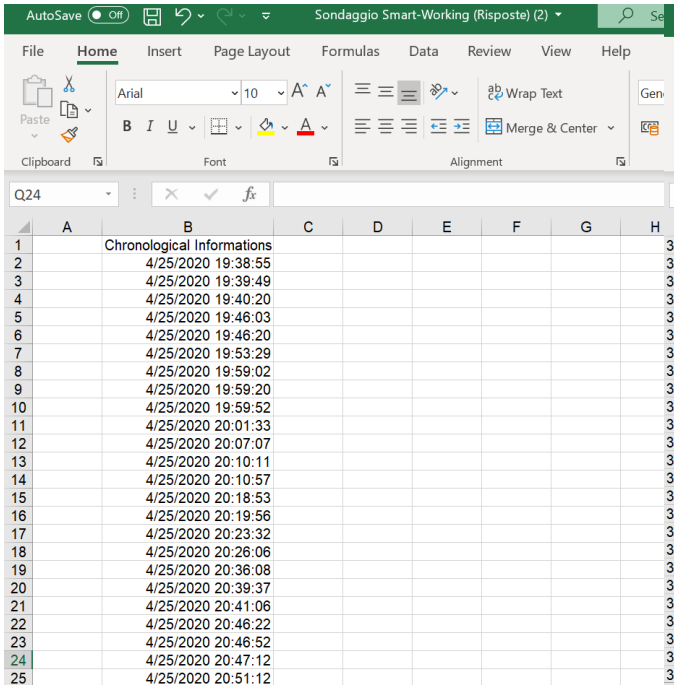
Questions that compose the survey have been proposed in different structures:

- Multiple choice questions where it was possible to select only one alternative (Yes/No; More/Less);
- Multiple choice questions where it was possible to select more than one answer;
- Likert scale questions where it was possible to answer on a scale of numbers (from 1 to 5), the selected number will indicate the degree of intensity of workers' opinion.

- In some questions, an empty box was provided to add information or answers do not present in the previous ones proposed.

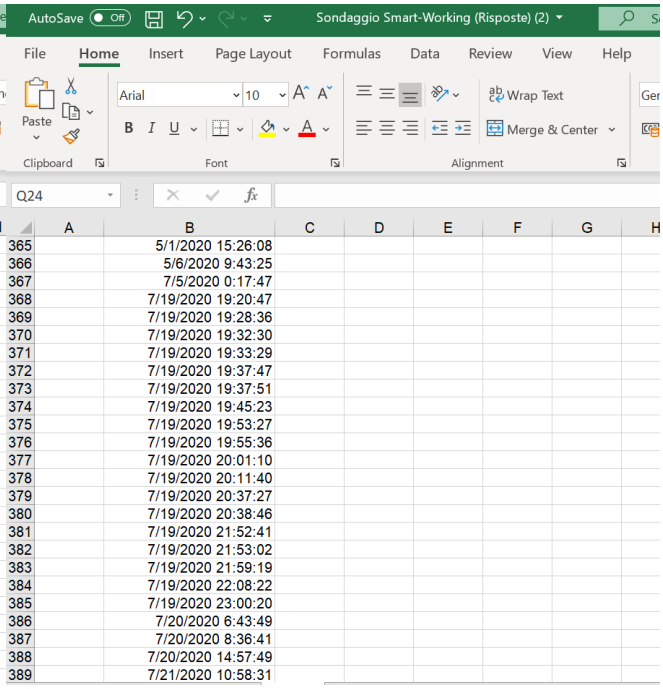
3.6.2. Population

The first step of my investigation was the identification of the population to analyse. It is already clear that the objects are public workers. With my questionnaire, I reached a survey cluster of 388 workers who started to answer on April 2020 till July 2020. In the following image, I will report the initial and the final chronological information of answers.



	A	B
1		Chronological Informations
2		4/25/2020 19:38:55
3		4/25/2020 19:39:49
4		4/25/2020 19:40:20
5		4/25/2020 19:46:03
6		4/25/2020 19:46:20
7		4/25/2020 19:53:29
8		4/25/2020 19:59:02
9		4/25/2020 19:59:20
10		4/25/2020 19:59:52
11		4/25/2020 20:01:33
12		4/25/2020 20:07:07
13		4/25/2020 20:10:11
14		4/25/2020 20:10:57
15		4/25/2020 20:18:53
16		4/25/2020 20:19:56
17		4/25/2020 20:23:32
18		4/25/2020 20:26:06
19		4/25/2020 20:36:08
20		4/25/2020 20:39:37
21		4/25/2020 20:41:06
22		4/25/2020 20:46:22
23		4/25/2020 20:46:52
24		4/25/2020 20:47:12
25		4/25/2020 20:51:12

Figure 36 - Chronological information of answers, 1



	A	B
365		5/1/2020 15:26:08
366		5/6/2020 9:43:25
367		7/5/2020 0:17:47
368		7/19/2020 19:20:47
369		7/19/2020 19:28:36
370		7/19/2020 19:32:30
371		7/19/2020 19:33:29
372		7/19/2020 19:37:47
373		7/19/2020 19:37:51
374		7/19/2020 19:45:23
375		7/19/2020 19:53:27
376		7/19/2020 19:55:36
377		7/19/2020 20:01:10
378		7/19/2020 20:11:40
379		7/19/2020 20:37:27
380		7/19/2020 20:38:46
381		7/19/2020 21:52:41
382		7/19/2020 21:53:02
383		7/19/2020 21:59:19
384		7/19/2020 22:08:22
385		7/19/2020 23:00:20
386		7/20/2020 6:43:49
387		7/20/2020 8:36:41
388		7/20/2020 14:57:49
389		7/21/2020 10:58:31

Figure 37 -Chronological information of answers, 2

I will show, from now, all the information that I collected by using graphs.

The first information I gathered concerns the gender, workers who answered are mainly females, this value perfectly reflects the second ISTAT “Permanent Census of Public Institutions” which reported that females are the highest percentage of workers employed in Public Institutions.

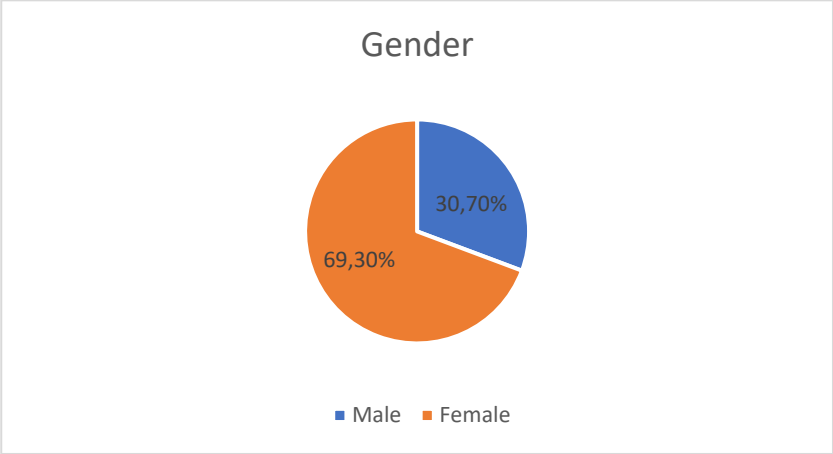


Figure 38 – Gender

Subsequently, I clustered respondents per age range. I identified three different groups: Employees who are less than 30 (whose percentage rate of answers was 1,8%), employees who age 30 to 50 (42,3%), and workers older than 50 (55,9%).

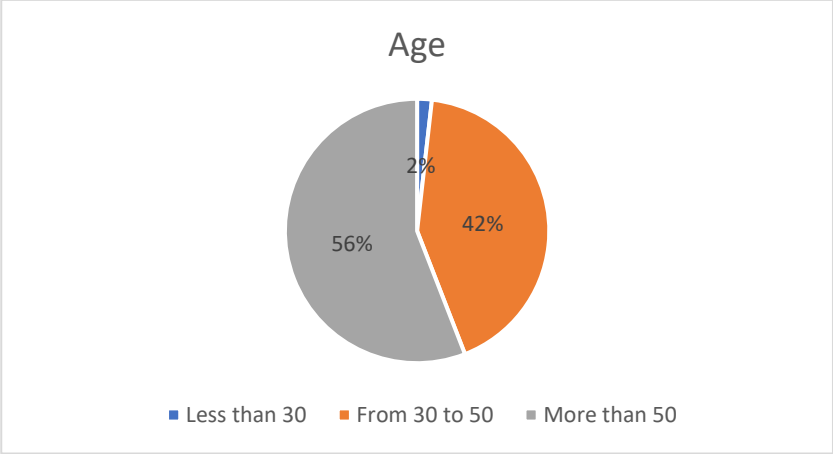


Figure 39 – Age

Answers reflect the general composition of public administration in which the higher number of workers is aged, this is mainly due to a long time of turnover.

According to the "Forum PA 2020" the Italian Public Administration is elderly; the medium age is 50,7 years. 16,9% of workers are even over 60 and only 2,9% is under 30. To modify the composition of employees the Italian Government introduced "Quota 100", a reform that aimed to anticipate employees' retirement. Actually, it significantly helped the turnover in fact in 2019 more than 50% of total pensioners anticipated the retirement, and only the 13,7% retired for having reached the age limit.[115]

To better cluster the population, I investigated where respondents come from. It resulted that the majority of them works in the Centre of Italy (74,2%), 52 respondents on 388 work in the South, and only 48 are employed in the North. Most respondents are confined to my geographical area, by considering the tools I used to reach workers, this concentration is reasonable.

[115] Giovannini R. (2020).

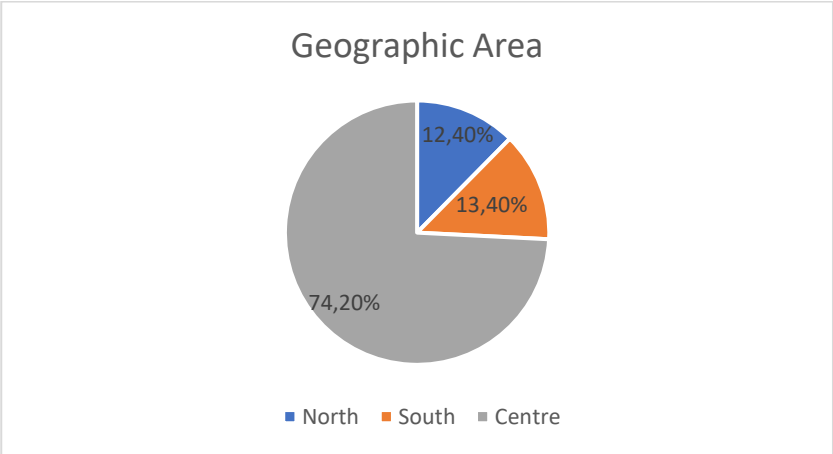


Figure 40 - Geographic Area

In terms of work position, the majority of respondents (361) are Employees[116]; accordingly, only 27 on 388 respondents are managers. In this work, I deliberately intended to investigate subordinated workers. The reason why is that, in my opinion, they better reflect the trend of innovations and they are more transparent in express drawbacks without conflict of interests.

Figure 41- Work Position

3.6.3. Thematic areas

The classification of public administration has been already proposed in the previous pages in which ISTAT deeply divided public offices in different juridical forms. In my investigation I decided to cluster respondents basing on sectors they work for, and not on the juridical type of institution. In my researches, I noticed that this type of analysis has never been done before.

[116] This term intends all subordinated workers.

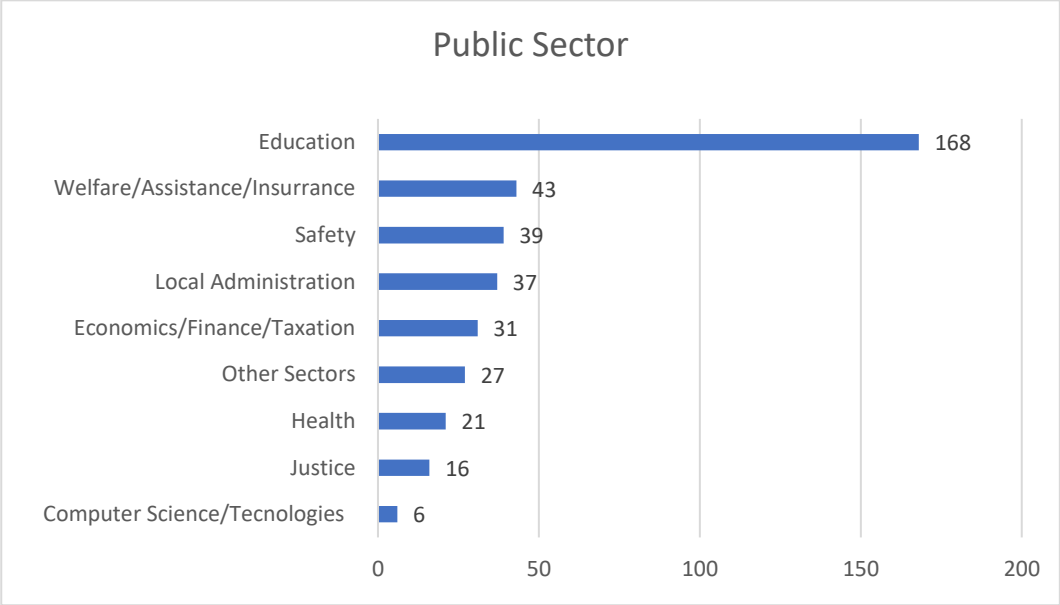


Figure 42 – Areas of public sector

The graph summarises the main sectors of the investigation. In the related question, I predisposed an empty box to allow respondents to provide additional information in case I forget some sectors. I grouped areas that are in low percentage in the category "other sectors" that, for example, comprehends Job agencies or Employment Agencies.

The highest percentage of respondents fall into the category "Instruction"[117], probably during the period of Covid-19, this was the sector that mainly suffered for the digitalization of work. In the second place, it classified workers of Welfare/Insurance/ Assistance (43 on 388) and Safety (39 on 388). I tried to cover all the sectors in order to have a complete overview of how smart working is perceived by all public workers. Some of them experimented SW for the totality of their tasks (such as teachers), some others for just a part of their job (such as doctors and law enforcement who tested this modality for refresher courses and seminars).

In the following pages, the main results of the investigation will be grouped into five areas.

3.6.4. Awareness

Above the questions presented before, regarding respondents' personal information, the questionnaire focuses on different investigation themes.

In the first moment, I asked workers if they already know SW and if they already experimented with this modality. This answer aimed to understand the SW penetration rate in Public Administration and the awareness of employees on SW. Answers are shocking: even if more than half of respondents already knew Smart Working (better saying already heard about it), only 13,7% experimented and worked in smart mode previous to the Covid-19 pandemic.

[117] In this category it doesn't fall students. In that case I considered the distance learning the complementary side of smart working.

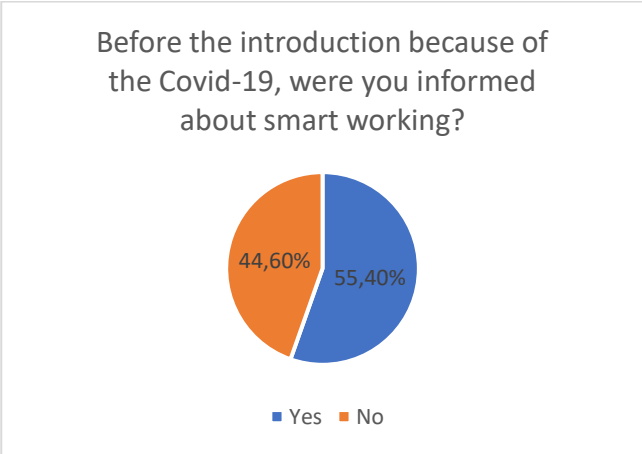


Figure 43 - Awareness

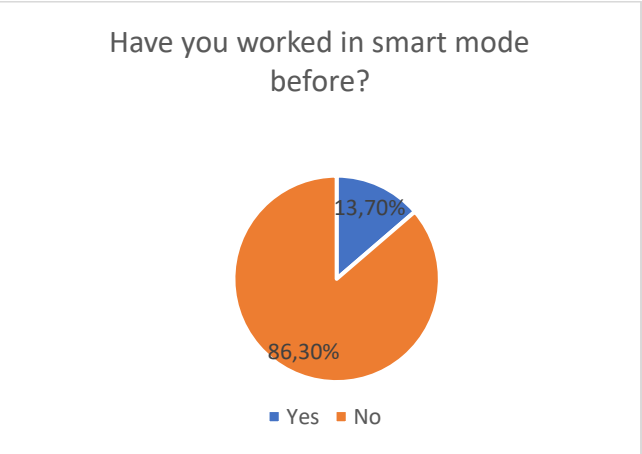


Figure 44- Penetration

In the previous analysis of SW Observatory data, it could be possible to predict a similar result. However, in that case, the Observatory included among those who didn't implement SW, also the institutions that are not interested, that are uncertain on the introduction and that are probably on the introduction. For that reason, data didn't arouse a feeling of backwardness because the reader understood that all these respondents were at least aware of the topic and that the lack of implementation was the result of a personal decision. On the other hand, it resulted that from the year 2018 to the year 2019 there was a 1% increase of respondents that didn't know the subject (from 2% to 3%). This increasing data could match with the high percentage of employees unprepared on the theme.

3.6.5. Productivity

In order to investigate how respondents perceive to be productive, I used two types of questions. The first multiple-choice question required only one answer; the second one asked employees to answer on a Likert scale (from 1- Not satisfied to 5- fully satisfied) to understand the perception of their increase in productivity.

More specifically, employees mainly declared to feel equally productive. That means that the majority of them didn't perceive to lose or increase their capabilities by dislocating in other work-places. Immediately after this group, it follows 34% of workers that perceived a decrease in their productivity and 29% who had the opposite feeling.

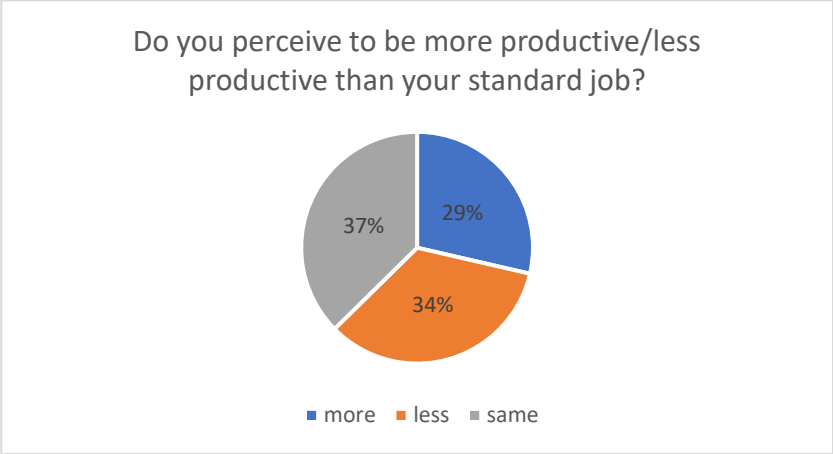


Figure 45 – Productivity

These results seem to be balanced, the 388 respondents are almost perfectly divided into the three different perceptions. That is why, to better understand the common feeling on this topic, I used the Likert scale.

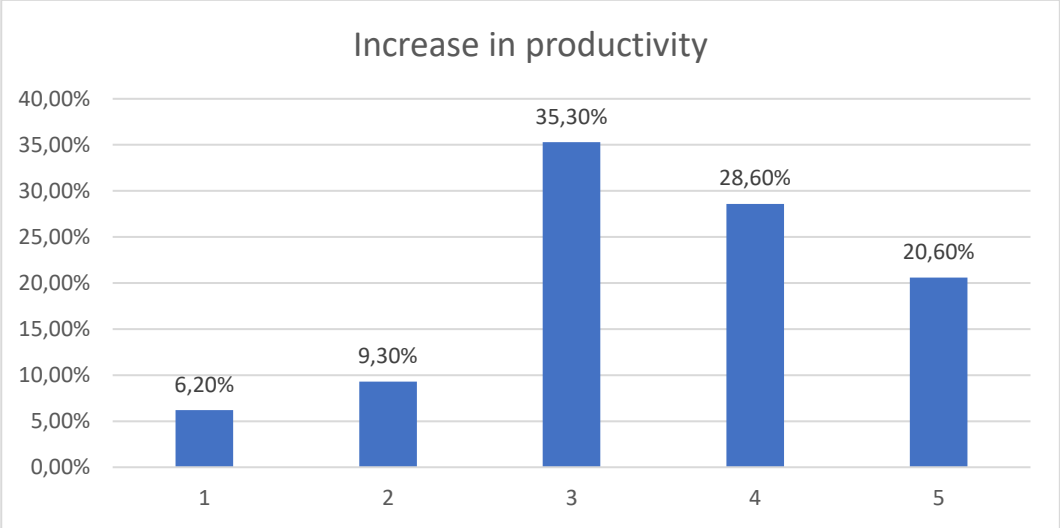


Figure 46 – Increase in productivity

Through this different type of question, it is possible to summarize that a small percentage of workers feels low satisfied with their more productivity (values 1 and 2) and the majority of them feels high satisfied with their increase in productivity. This is a result that leads to a reflection. Even if there are a lot of drawbacks to working from home, that in the next pages will be discussed and analysed, people perceive to work more productively or at least, in the same way than from their office.

What could be the reason why? In order to investigate this answer, I proposed a question that leads me to a justification.

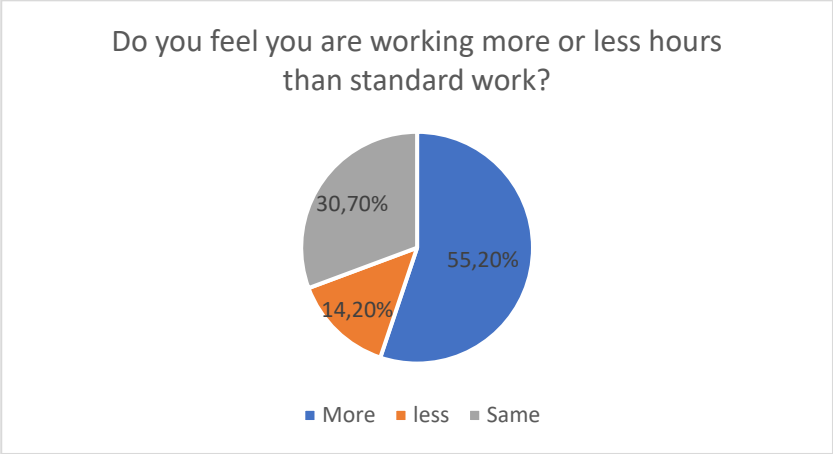


Figure 47 – time perception

It is clear that, by working more hours, people perceive to produce more. Indeed, more than half of the respondents declared to spend more time working.

In the first analysis, I thought workers spent more time working, in order to guarantee the same results they would obtain by working less in the office. Actually, by analysing data, it is not so. They declared to work more but also to be more productive. Why does it happen? What could justify the propensity of people to work more hours by home?

3.6.6. Work-life balance

A justification could be a better work-life balance, that guarantees workers to restore from their work hours with coffee breaks and time dedicated to hobbies.

Actually, more than half of the respondents (56,40%) declared that it is easier to take breaks during the smart working time.

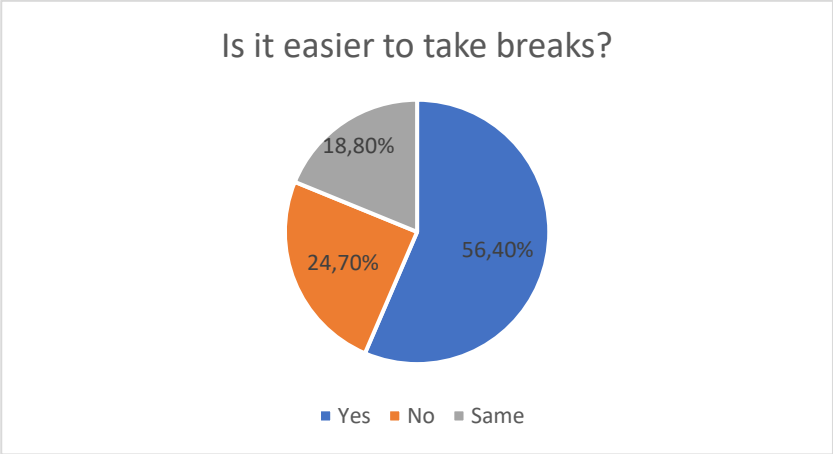


Figure 48 – Ability to take breaks during work

Despite this answer, the investigated population is perfectly divided regarding the perception of free time and private activities.

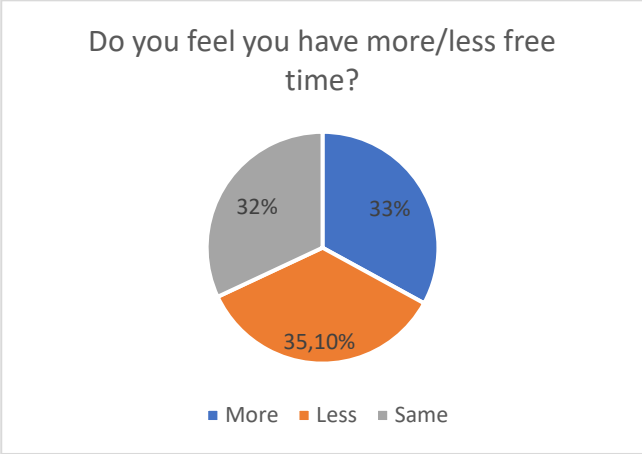


Figure 49 – Free time

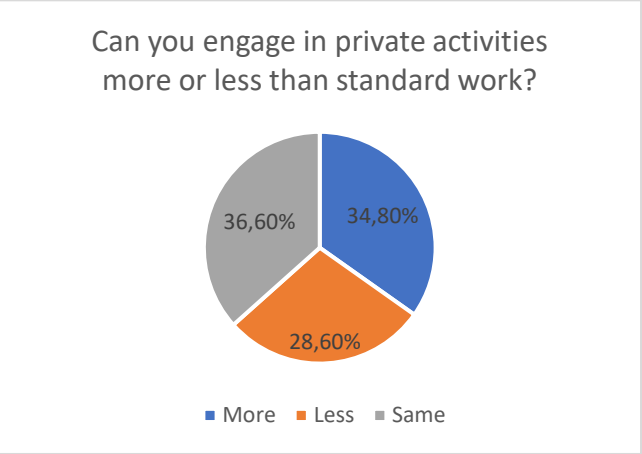


Figure 50 – Private activities

A little majority of workers perceives to have less free time (35,10%) but declared to engage in private activities in the same way than by working from office (36,60%).

I already showed how this type of multiple-choice questions, sometimes do not allow to properly cluster the investigated population. For that reason, even in that case, I proposed the Liker scale question.

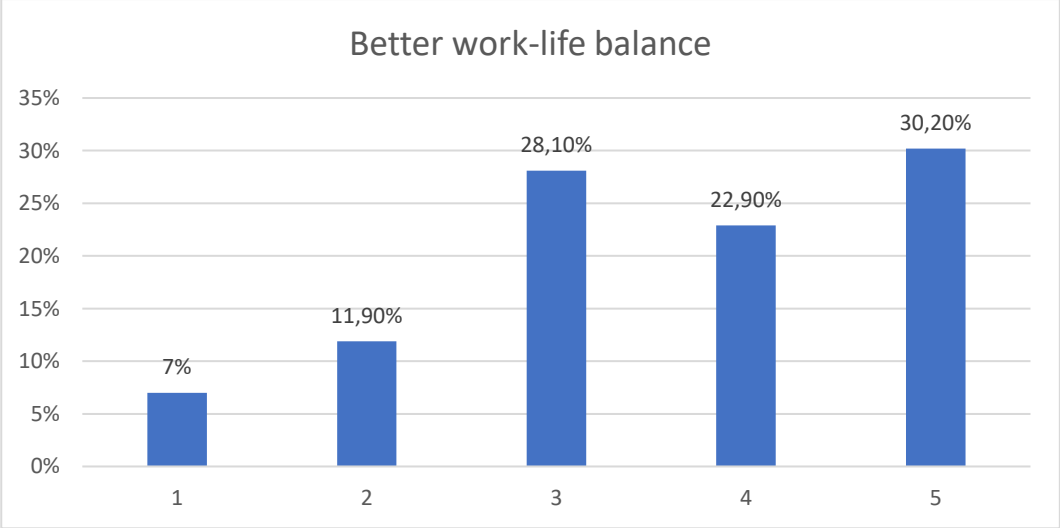


Figure 51 - Better work-life balance

Only 73 respondents on 388 answered negatively by declaring dissatisfaction. 109 on 388 answered "3" that reflect neutrality on the topic investigated, and 206 on 388 declared to have a great satisfaction on a better work-life balance. In summary, the majority of workers is satisfied with this topic.

3.6.7. Commitment to the company

Another reason why workers worked more and were more productive could be the commitment to their enterprises. In the Covid-19 pandemic corporate realities, all experimented difficulties both for the removal of workers from offices, both for the stop of some activities and for the total change of the way to work. For that reason, it is possible that employees felt the responsibility of their work and engaged to deal with this moment.

In confirmation of this reasoning, 51,50% of investigated employees declared that are less tempted to take days off and only 16% announced to be eager to take days off. So even if this cluster declared to work more hours and to produce more, the majority of them in Smart Working was less tempted to take vacations or long breaks.

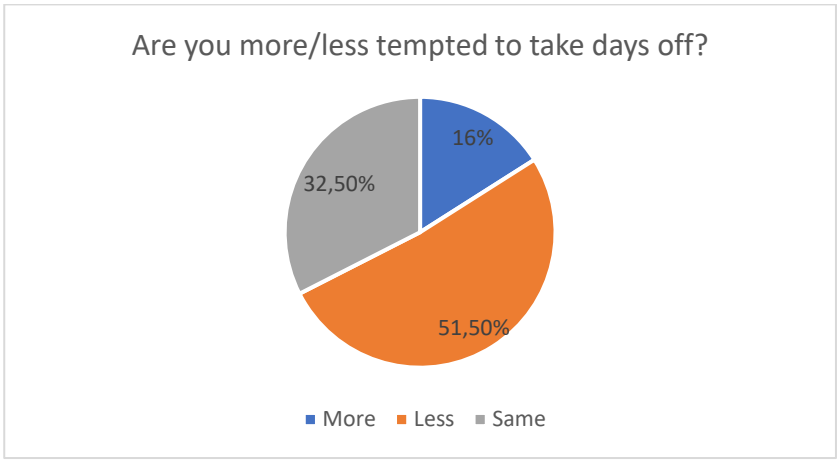


Figure 52 – Days off

In the area of commitment, I also investigated how relationships with colleagues and heads changed in the Smart Working modality.

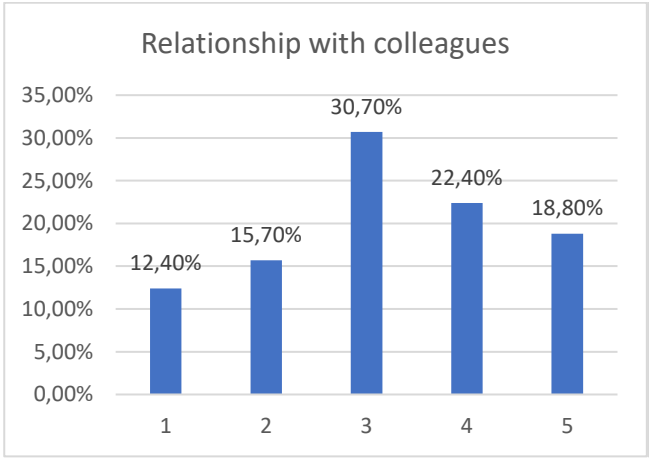


Figure 53 - Relationship with colleagues

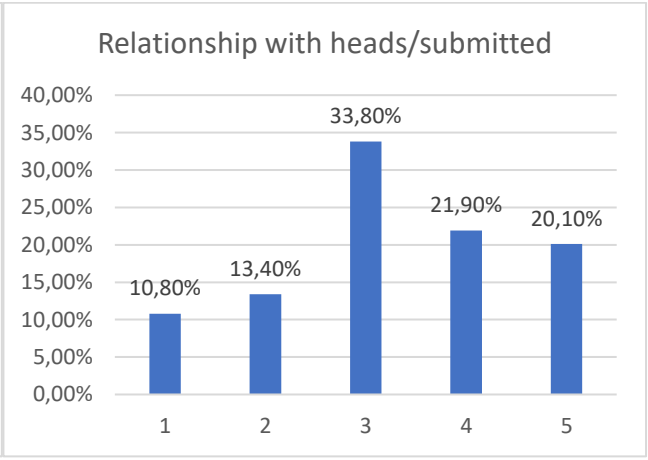


Figure 54 – Relationship with heads/submitted

It resulted that for about 30% of workers, both relationships remained the same. Almost one-third of respondents answered to be not satisfied with their relationship with colleagues (109 on 388) and with heads (94 on 388); accordingly, the remaining third felt to be really satisfied with their contacts. Therefore, in that case, I can assert that the investigated population is perfectly divided on these sentiments, with a little majority in satisfaction on the relationship with heads/submitted (Answers 4 and 5).

3.6.8. Welfare and satisfaction

Workers' welfare has been investigated through their answers on satisfaction related to various dimensions, both related to the work side (such as environment and work management), both concerning emotive aspects (such as distractions and perception of stress).

The first general question on satisfaction showed that 62,40% of respondents are satisfied with their smart working, and 28,40% would prefer to work by the office. There were really few respondents that considered their work satisfaction unchanged.

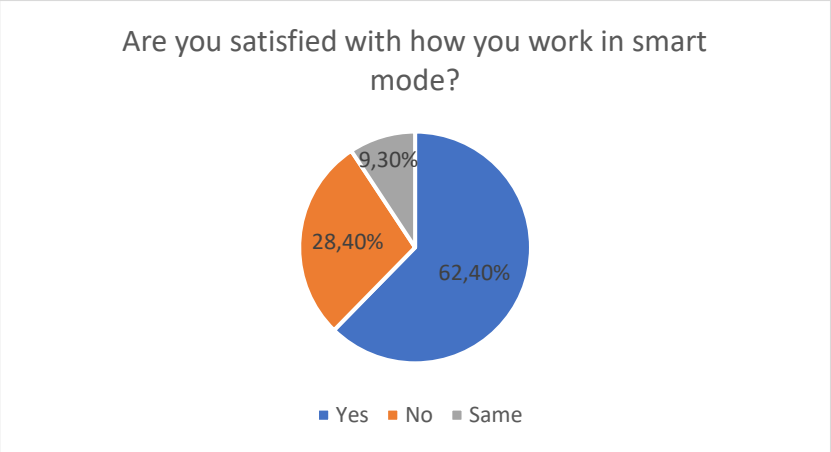


Figure 55- Satisfaction

In the first pages of this work, I deeply analysed the advantages of smart working. In particular, FlexJobs' 7th Annual Super Survey[118] (See page 15/ graph Number), listed reasons for better productivity. I decided to investigate these dimensions in order to understand how, in a particular period of closure, the investigated population perceived these aspects.

Answers can be grouped into three different trends:

The first one reflects the situation in which the majority of workers perceived to be really satisfied (answer 5). In that case, it happens in two dimensions: a more comfortable environment and less stress for moving.

[118] Reynolds Brie Weiler, 2018.

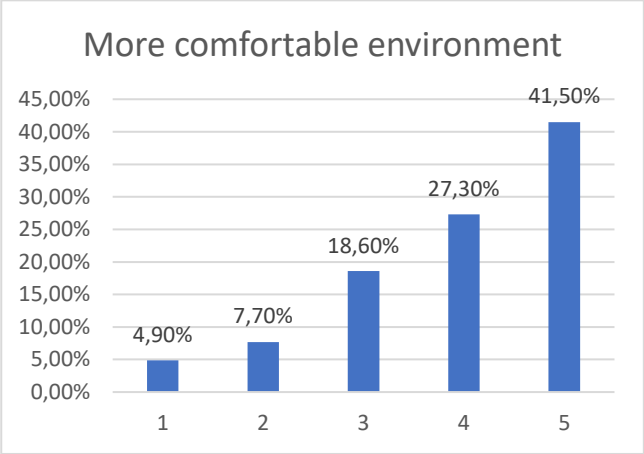


Figure 56 - More comfortable environment

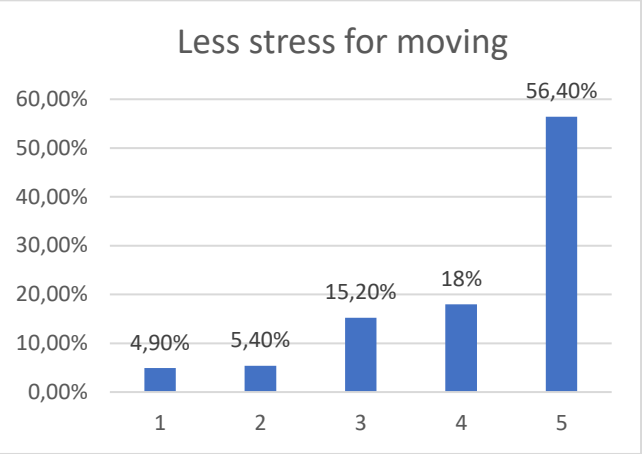


Figure 57 – Less stress for moving

For these two aspects, the main trend is high satisfaction. Really few people declared not to be fulfilled about the change of environment (49 on 388) and about the stress for moving (40 on 388). Probably for these few respondents the displacement from home, the trip to reach the office and, the change of environment are perceived as a stimulus to focus on work and to enter the work mood. In particular, the long pandemic period transformed houses into offices and conference rooms, in which there lacked discretion and direct contact with colleagues.[119] Actually, according to a study conducted by the University of Genova[120], during this period many workers have suffered for a lack of privacy, isolation, insomnia and depression. This could be a reason why of the few answers in favour of traveling and office placement.

The second trend regards answers that concentrate in the upper part of the satisfaction (answers 4 and 5). In smart working modality, the work management has improved and the interruptions from colleagues decreased.

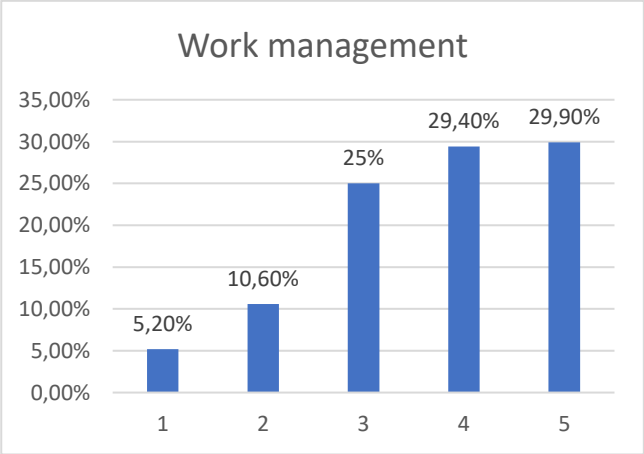


Figure 58- Work management

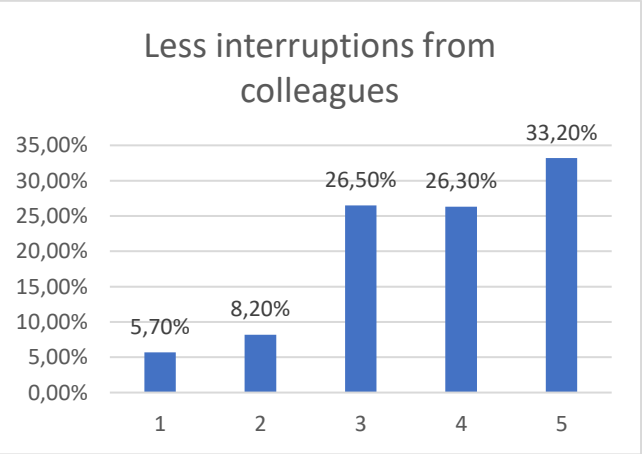


Figure 59 – Less interruptions from colleagues

[119] De Giorgio T. (2020)
[120] Università di Genova (2020).

Graphs show great satisfaction in work management. On reflection, communications, discussions, and debates on topics required video calls or video conferences and this required planning. This means that the SW necessarily guaranteed a higher organization in schedule work.

Additionally, interruptions from colleagues were fewer and the satisfaction arose. The result is reasonable: even the most trivial communication required more time to respect the simple communication in the office. Accordingly, this has caused a decrease in useless communications.

In that context it should be linked to the decrease of interruptions with the decrease of distractions during work hours from home, for the majority of workers this is true but for the remaining part, it is not obvious to create this linkage. By analysing data, it emerges the third trend of answers: the unchanged situation.

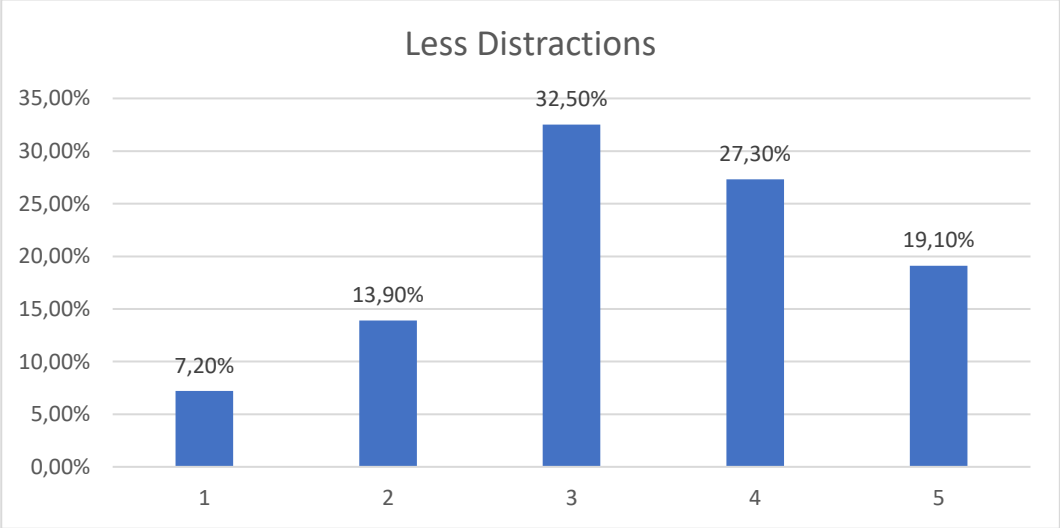


Figure 60 - Less distraction

A third of respondents (32,5%) declared to not perceive changes in distractions. The lack of improvement could be linked to the presence of interferences in their private life. Working from home lead workers (in particular women) to dedicate time to house and children that otherwise would not have done in that time frame. The research from "Valore D[121]" published by Ansa underlines that responsibility for family care continues to weigh heavily on women who, especially in this emergency, struggle to reconcile professional and personal life.[122]

[121] "Valore D" is an association of 200 Italian enterprises committed to gender balance and an inclusive culture in organisations.
[122] Ansa (2020).

3.6.9. Difficulties and proposals

To better understand what aspects workers encountered most difficulties and what they would need to work better, I investigated their sentiment through multiple choice questions and empty boxes.

In the following graph, I collected all the answers in decreasing order to better understand where the public administration lacked organization.

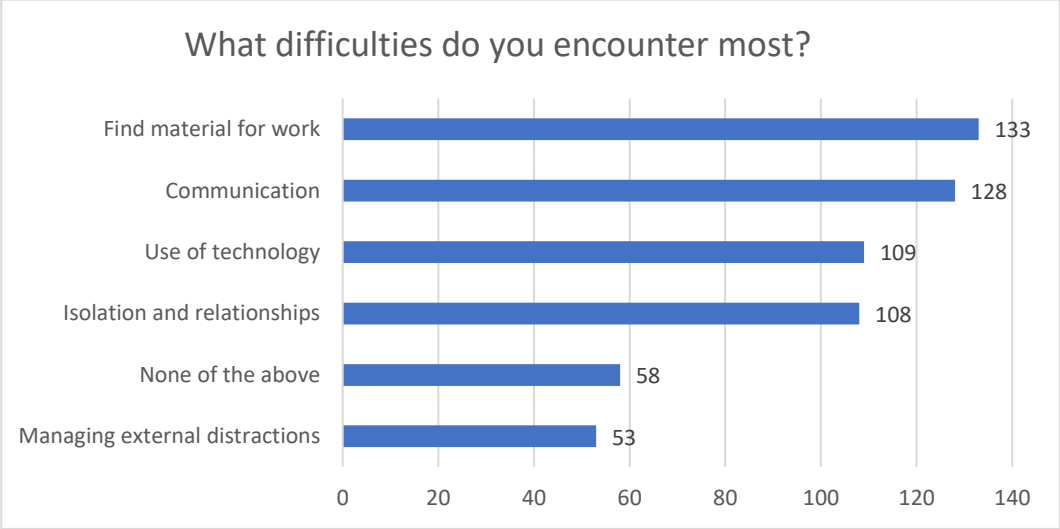


Figure 61- Difficulties

The majority of respondents had problems in reaching material for work, some of them wrote in the empty boxes that many works are still based on the paper system and not on the digital archive. Accordingly, employees were unable to find all the material they need to work. This backward system creates discomfort and a mismatch between how workers perform in office and how they work from home.

The second main trend of answers was the difficulty in communication. Even if in the previous analysis the main inclination was a general satisfaction on communication with colleagues, the majority of respondents here declared to be in difficulty about this theme. Also, the use of technology and the isolation is considered a problem for about one-third of respondents, distraction instead doesn't seem to be a trouble for most of them.

58 on 388 respondent declared to not have problems with the aspects proposed and filled the empty box by declaring to have troubles with colleagues and heads who are not competent in using technology and accordingly, slow down the entire work; some others complained about the mismatch in technological conditions of the community they come into contact (workers of public instruction sector complained about differences in students' tools, workers of local administration sectors complained about difficulties for the population who can't exploit digital services or online book services, set up, for example, to avoid queues during the pandemic).

In order to better mapping the desires of smart workers and to better understand where to take action to improve public smart working, I asked the investigated population what they would need to work better.

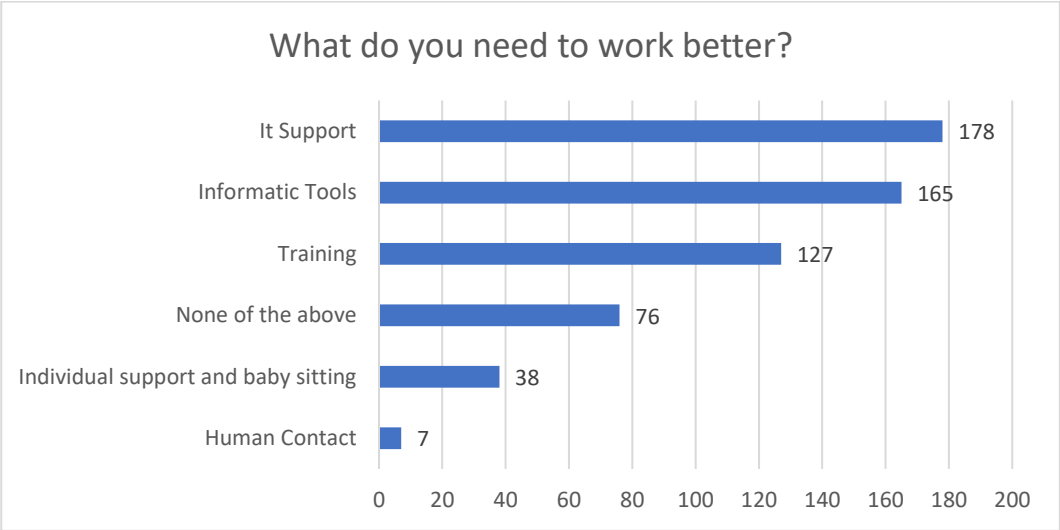


Figure 62 - Needs

Almost half of the respondents declared to need technological support (178 on 388) and informatics tools (165 on 388). Considering that the majority of respondents sworks in the public instruction sector, it is necessary to underline that the Legislative Decree N.18 of 2020[123] provided significant support to families of students and workers in this sense. The article 120 of the mentioned Decree has planned the allocation of EUR 85 million divided in: EUR 10 million to encourage the use of e-learning platforms, EUR 70 million dedicated to making available to the least well-off students, on loan free of charge, individual digital devices, for better and more effective use of distance learning platforms, EUR 5 million for online training of teachers on methods and techniques of distance learning. Despite that, the necessity of training is at the third place of the list. Probably this percentage covers all the other sectors of public administration, by removing public instruction where Government has focused more.

A part of the respondents declared not to need improvements; some others required individual support mainly regarding the work-life balance and the private life. In the empty boxes lot of women workers wrote the desire to have a babysitter in the house, during their work hours. That brings up the speech of before in which the great majority of women suffered great stress by working from home with children in the house.

[123] Legislative Decree n.18 of 17/03/2020

Conclusion

Before the pandemic period of Covid-19, the phenomenon of smart working was unknown at most public workers. The introduction of this instrument aimed, at first, to grant the worker greater autonomy. Truly he obtains more authority on his work that will be organized by objectives and that can exit from standard time schedules. Additionally, the worker necessarily acquires more trust by the employer that is not always able to control his execution and his daily routine.

On the other hand, enterprises need to rethink their organizational model by drawing up technological tools and flexibility on times and spaces.

Indeed, the responsibility is double: on one side workers need to be accountable and honest on the job they do; on the other side, the enterprise needs to be able to organize processes aimed at control and evaluate performances.

My survey is a worker-side evaluation of reactions and sentiments on smart working implementation.

The main sector of investigation has been the public instruction, a sector that probably had a particular focus by the Government for the drastic change it suffered during the Covid-19 pandemic.

On the 388 respondents, the main cluster of my investigation was women older than 50, located in the centre of Italy. The main work position that characterizes the cluster is that of subordinated employees. They were required to assess their performance and to measure their productivity besides their feelings on the new introduction.

I structured the questionnaire in order to maintain anonymity, accordingly I hope I have had honest answers.

Before the Covid-19 pandemic, only half of the respondents already knew what smart working was, and more than 80% never experimented with the phenomenon. The value is significant and underlines the backwardness of Italian public administration that, probably, without the period of lock-down would have employed years to reach the same penetration rate than during this time.

It is also true that this extraordinary moment allowed public administration, and also private enterprises, to enjoy more easy and shorter bureaucracy and the high penetration rate was granted by the total acceptance of workers that could have not refuse it.

In my research, the majority of workers declared to work more hours, to perceive higher productivity, and to are able to take breaks and free time as like as in-office work. In summary, the majority of employees are satisfied with how they work from home in terms of productivity and work-life balance.

Besides these personal aspects, the more comfortable environment, the decrease in stress for travel, and the minor interruption from colleagues are all benefits shared by workers. My survey also underlines the advantage of better work management.

For a huge number of answers and a deeper analysis, I arranged some empty boxes in which employees answered with their opinion on these themes. The backwardness of the archive (based on paper and not digitalized) and the difficulty in working while managing family and children, is the main trend of workers' complaints. The Covid-19 period interested all the population and so also students and other workers that concentrated in the same place. Moreover, workers declared to need technical support, training, and informatic tools to work properly.

Researches by psychologists and universities underline the great influence of pandemic closure on the psychology of people. It created more stress, anxiety and depression and, accordingly, that reflected on the work. This could be a reason why some workers refuse agile position and prefer to move towards the office, change the work-place and detach from their comfort habitat.

124

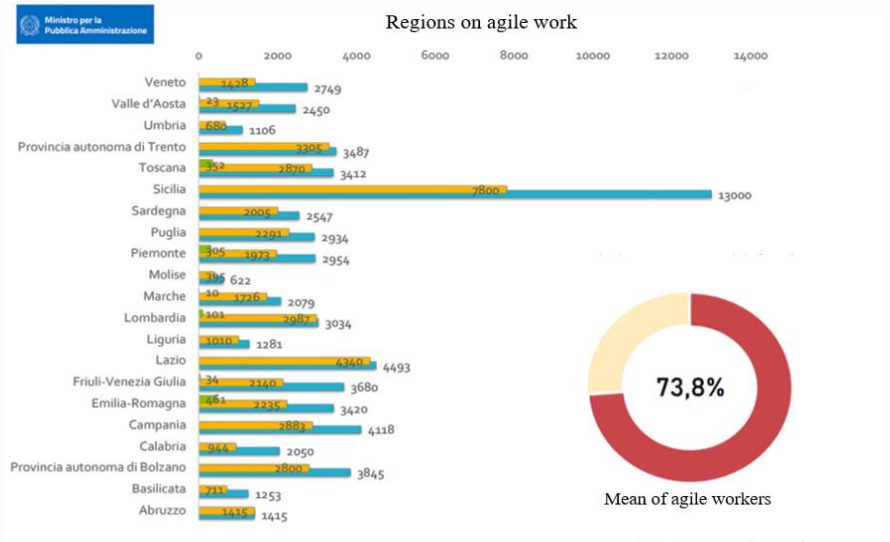


Figure 63- Italian Regions on agile working

Nowadays, according to the Public Administration Ministry, public agile workers are more than 70%. Some Regions, in little percentage, still adopt telework (green lines) but the great majority has implemented smart working (yellow lines). From the total of employees (blue lines), it is still visible the percentage of standard workers. Some Regions introduced the agile work for almost the totality of personnel (for example those more affected by the pandemic such as Lombardy), some others implemented the phenomenon only for half of the employees (such as Sicily). The hope is to reach a balance between Regions and to not create misalignments among the various sides of the Country.

[124] Figure taken by: Public Administration Ministry, (2020).

In future researches, it could be some insights into my study. For example, the performance and the productivity of workers should be analysed by managers, and not by agile employees themselves, in order to have an external and objective overview. Moreover, the present research could pursue by investigating how many workers and enterprises are interesting in maintaining smart working after the coercive period.

From a regulatory point of view, it will be necessary a slimming down of bureaucracy and the arrangement of sufficient resources to destinate to public institutions. It is now clear that it would need a lot of efforts, both monetary both occupational, to update databases, digitalize archives, buy technological tools and trainee employees.

Bibliography

Anitec-Assinform (2018), "Digital Trends in Italy 2018", Anitec-Assinform- Confindustria Digitale.

Ansa Editorial Staff (20/03/2020) "*Smart working al femminile 1 donna su 3 lavora più di prima, Ricerca valore D, è il momento disviluppare la corresponsabilità tra genitori"* Ansa.it, .https://www.ansa.it/canale_lifestyle/notizie/societa_diritti/2020/03/20/smart-working-al-femminile-1-donna-su-3-lavora-piu-di-prima_3f0ad584-dc31-4f79-89b9-49e4e030fee1.html

Art. 2087 c.c. "Tutela delle condizioni di lavoro"

Art. 7 "Costituzione Della Repubblica Italiana", https://www.senato.it/1025?sezione=118&articolo_numero_articolo=7

Article 83 European General Data Protection Regulation (GDPR), (2016) "General conditions for imposing administrative fines", N. 679/2016. https://www.privacy-regulation.eu/it/83.htm.

Assinform (2016), "Digital Trends in Italy 2016", Assinform - Confindustria Digitale.

Ben Wolford (2020), "What is GDPR, the EU's new data protection law?", gdpr.eu. https://gdpr.eu/what-is-gdpr/

Birkinshaw J. (2010), "What is your Management Model?", managementexchange.com. https://www.managementexchange.com/blog/what-your-management-model

Blavatnik School of Government and the Institute for Government (2017), "The International Civil Service Effectiveness (InCiSE) Index 2017", Incise Pubblications. https://www.bsg.ox.ac.uk/sites/default/files/2019-01/International%20Civil%20Service%20Effectiveness%20%28InCiSE%29%202017%20main%20report.PDF

Broughton Andrea (2002), "Social partners sign teleworking accord" Eurofound.

Bucci Valentina (2016), "Smart working: quanto si sta diffondendo in Italia?", ZeroUnoWeb.com. https://www.zerounoweb.it/smart-working/smart-working-quanto-si-sta-diffondendo-in-italia

Bulgarini d'Elci Giuseppe (2020), "Dall'uso del pc alla disconnessione tutte le regole per il dipendente", Le Guide IlSole24Ore- Smart Working, pag 12-13.

Cairo L., D'Avanzo F., Ferretti F., (2018), "Lavoro agile e coworking- Opportunità per P.A., imprese e lavoratori alla luce della L. n. 81/2017", Altalex editore.

Carinci F., Mainardi S. (2018), "Il lavoro nelle pubbliche amministrazioni", G. Giappichelli Editore, Rivista N. 3/2018, pag 81

Carretero S., Vuorikari R.,Punie Y. (2017), ""DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use", European Commission's Joint Research Centre. http://europa.eu/!Yg77Dh

Casadei Cristina (2019), " Smart Working, mancano all'appello Pmi e Pa", Ilsole24Ore.com, https://profquotidiano.ilsole24ore.com/edicola24web/edicola24web.html?testata=S24&issue=20191030&edizione=SOLE&startpage=28&displaypages=2

Casadei Cristina (2020), "Per le banche stress test sul lavoro da remoto", Le Guide- IlSole24Ore, pag 51-53.

Cattolica di Assicurazioni Group, (07/05/2018) First/CISL – Fisac/CGIL – F.N.A. – SNFIA – UILCA (2018), "Accordo Smart Woking", 7 Maggio 2018, https://www.fisac-cgil.it/wp-content/uploads/2018/05/SW-accordo-03-05-2018.pdf

Chung Heejung (2018), "Flexible Working, Work-Life Balance, and Gender Equality: Introduction", Springer.

Corso Mariano, (2020) "Vanno ripensati i modelli manageriali", Le Guide IlSole24Ore- Smart Working, pag 23-24.

Council of the European Union and Ministers of Employment (2000), "Risoluzione concernente la partecipazione equilibrata delle donne e degli uomini all'attività professionale e alla vita familiare", Gazzetta Ufficiale delle Comunità Europee.

Cozzi G., Menegotto M. (2019) "Lavoro agile e istanze di conciliazione tra legge e contrattazione", Guida al lavoro, pag 20-23.

Cozzi Giulia (2019), Bollettino ADAPT 25 febbraio 2019 n. 8.

Dagnino E., Tomassetti P., Tourres C., (2016), "Il "lavoro agile" nella contrattazione collettiva oggi", Working Paper n. 2/2016, Adapt University Press, Working Paper N.2/2016. https://www.miowelfare.it/sites/default/files/news/lavoro_agile_contrattazione_wp_3.2-1.pdf

DDL 2233, from Article 16 to Article 20 (2017), Senato Della Repubblica.

De Giorgio T. (29/05/2020) , *"Isolamento e smart working: quando la casa diventa una prigione",* Repubblica.it. https://rep.repubblica.it/pwa/locali/2020/05/29/news/isolamento_e_smart_working_quando_la_casa_diventa_prigione_-257934835/

Dictionary of workers' rights, "Contratto collettivo - CCNL ", WikiLabour.it, https://www.wikilabour.it/contratto%20collettivo.ashx

Digital observatory of polytechnic of Milan (2017), "LO SMART WORKING IN ITALIA", Osservatori.net.

Digital observatory of polytechnic of Milan (2018),"Smart Working una rivoluzione da non fermare", Osservatori.net.

Digital observatory of polytechnic of Milan (2019), "CRESCE IL NUMERO DEGLI SMART WORKER ITALIANI: 570MILA (+20%) LAVORATORI PIÙ SODDISFATTI DEGLI ALTRI", Osservatori.net. https://www.osservatori.net/it_it/osservatori/comunicati-stampa/crescita-smart-working-engagement-italia-2019

Digital observatory of polytechnic of Milan (2019), "Gli Smart Worker in Italia", Osservatori.net.

Digital observatory of polytechnic of Milan (2019), "LA DIFFUSIONE DELLO SMART WORKING NELLE PICCOLE E MEDIE IMPRESE IN ITALIA, 2018-2019", Osservatori.net.

Digital4, (2018) " Polimi, gli Smart Worker in Italia crescono del 20% e toccano quota 480mila", Digital4.biz, Osservatori. https://www.digital4.biz/hr/smart-working/polimi-smart-worker-italia-quota-480mila

Directive n.3 of (2017), http://www.funzionepubblica.gov.it/sites/funzionepubblica.gov.it/files/Direttiva_lavoro_agile.pdf.

Directive N. 3/2017, Presidency of the Council of Ministers.

Dixon Mark (2019), "THE IWG GLOBAL WORKSPACE SURVEY", IWG, http://assets.regus.com/pdfs/iwg-workplace-survey/iwg-workplace-survey-2019.pdf

Dswiss, S&N, (2018), "GDPR: New EU regulation defines the handling of customer data", dswiss.com. https://www.dswiss.com/en/news/gdpr/?gclid=CjwKCAjw4871BRAjEiwAbxXi22Y77mBbpRvsnxVuQ_9GMRDKpBZYF74MRsdDYLli5rYgxVXJpe-gUhoC5eMQAvD_BwE

ELENA (2018), "Toolkit for the Implementation of Flexible Working Arrangements in Private Companies", ELENA and Bocconi University.

ENI Group e Femca-Cisl, Filctem-Cgil, Uiltec-Uil, (2017), "Accordo sullo Smart Working,Chimici Gruppo Eni" 6 Febbraio 2017", Olympus Ossrvatorio. https://olympus.uniurb.it/index.php?option=com_content&view=article&id=16438:2017enisw&catid=227&Itemid=139

Eurofund (2020), "Collective Bargaining".

European Commission (2017), "Proposal for a Directive of the European Parliament and of the Council 2017/0085 on work-life balance for parents and carers". https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2017%3A253%3AFIN

European Economic Community (1992), "92/241/EEC: Council recommendation of 31 March 1992 on child care".

European Parliament (2015), "Risoluzione- La strategia dell'UE per la parità tra donne e uomini dopo il 2015 " https://www.europarl.europa.eu/doceo/document/TA-8-2015-0218_IT.html?redirect

European Parliament (2016), "Risoluzione- Creazione di condizioni del mercato del lavoro favorevoli all'equilibrio tra vita privata e vita professionale" https://www.europarl.europa.eu/doceo/document/TA-8-2016-0338_IT.html?redirect

European Parliament and Council of European Union, (24/10/1995) “Directive 95/46/EC of the on the protection of individuals with regard to the processing of personal data and on the free movement” Official Journal L 281 , 23/11/1995 P. 0031 – 0050. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31995L0046

European Parliament and Council Of The European Union (27/4/2016), “Regulation On The Protection Of Natural Persons With Regard To The Processing Of Personal Data And On The Free Movement Of Such Data, And Repealing Directive 95/46/Ec (General Data Protection Regulation)”. Https://Eur-Lex.Europa.Eu/Eli/Reg/2016/679/Oj

Eurostat (2020), "Employed persons working from home as a percentage of the total employment, by sex, age and professional status (%)", Eurostat. https://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-052914_QID_7495D27B_UID_-3F171EB0&layout=TIME,C,X,0;GEO,L,Y,0;SEX,L,Z,0;FREQUENC,L,Z,1;AGE,L,Z,2;WSTATUS,L,Z,3;UNIT,L,Z,4;INDICATORS,C,Z,5;&zSelection=DS-052914WSTATUS,EMP;DS-052914FREQUENC,USU;DS-052914INDICATORS,OBS_FLAG;DS-052914AGE,Y15-64;DS-052914SEX,T;DS-052914UNIT,PC;&rankName1=WSTATUS_1_2_-1_2&rankName2=UNIT_1_2_-1_2&rankName3=AGE_1_2_-1_2&rankName4=FREQUENC_1_2_-1_2&rankName5=INDICATORS_1_2_-1_2&rankName6=SEX_1_2_-1_2&rankName7=TIME_1_1_0_0&rankName8=GEO_1_2_0_1&sortC=DESC_-1_FIRST&rStp=&cStp=&rDCh=&cDCh=&rDM=true&cDM=true&footnes=false&empty=false&wai=false&time_mode=ROLLING&time_most_recent=true&lang=EN&cfo=%23%23%23%2C%23%23%23.%23%23%23

Eurostat, "Glossary:Persons employed - SBS", Eurostat Statistic Esplained. https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Persons_employed_-_SBS

Gabaglio E., Jacobs G., Bonetti A., Plassmann R. (2002), "FRAMEWORK AGREEMENT ON TELEWORK", Businesseurope.eu.

Giovani Giuslavoristi Sapienza Group, (2017). “Il lavoro agile nella disciplina legale, collettiva ed individuale.”, C.S.D.L.E. “Massimo D’Antona”.Collective Volumes – Working paper N. 6/2017. http://csdle.lex.unict.it/Archive/WP/WP%20CSDLE%20M%20DANTONA/WP%20CSDLE%20M%20DANTONA-Collective%20Volumes/20171213-120443_gruppo-GGGS_wp-6-2017pdf.pdf.

Giovannini R. (06/06/2020), *”Una pubblica amministrazione di anziani: l’età media dei pubblici è di 50,7 anni” La Stampa.it.* https://www.lastampa.it/economia/2020/07/06/news/una-pubblica-amministrazione-di-anziani-l-eta-media-dei-pubblici-e-di-50-7-anni-1.39050742#:~:text=Obbligazioni-,Una%20pubblica%20amministrazione%20di%20anziani%3A%20l'et%C3%A0%20media%20dei%20pubblici,%C3%A8%20di%2050%2C7%20anni&text=Una%20pubblica%20amministrazione%20anziana%2C%20in,2%2C9%25%20under%2030.

Iacono Nello (2019), "Rapporto Istat, l'Italia è indietro sulle competenze digitali: ecco che fare", Agendadigitale.eu. https://www.agendadigitale.eu/cultura-digitale/rapporto-istat-litalia-e-indietro-sulle-competenze-digitali-ecco-che-fare/

INAIL Circular n° 48 (22/11/2017), https://www.inail.it/cs/internet/docs/testo-integrale-circolare-n-48-del-2-novembre-2017.pdf

INAIL Memorandum of (02/11/2017), https://www.inail.it/cs/internet/docs/testo-integrale-circolare-n-48-del-2-novembre-2017.pdf.

Interconfederal agreement for the transposition of the European framework agreement on telework concluded on 16 July 2002 between UNICE / UEAPME, CEEP and CES, 2004.Filcams-CGIL, (2004). http://www.filcams.cgil.it/accordo-interconfederale-09-06-2004-recepimento-dellaccordo-quadro-europeo-sul-telelavoro-concluso-il-16-luglio-2002-tra-uniceueapme-ceepe-ces/

Iodice D., Colombani R. (2017), "Il lavoro agile nella legge 81/2017- Flessibilità o destrutturazione del rapporto?", Working Paper n.9, Adapt University Press.

Istat (2019), "Comunicato stampa. Cittadini e ICT", Istituto Nazionale di Statistica. https://www.istat.it/it/archivio/236920

Istat, (17/12/2019), "*Permanent Census of public institution 2017: the main results", Istat,* .https://www.istat.it/it/files//2019/12/Report_CENSIMENTO-ISTITUZIONI-PUBBLICHE-_2017.pdf

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 4.3, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 4.7, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 5.1, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 1.1, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table1.7, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 1.3, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

Istat, (18/01/2019), *"Permanent census of public institution- Data Table", Table 1.2, Istat,* .https://www.istat.it/en/permanent-censuses/public-institutions.

JOÃO MOREIRA DIAS (2017),"Smart Working. Dialogues between Portugal and Italy", Labour&LawIssues. file:///C:/Users/Serena/Downloads/7572-22855-1-PB%20(1).pdf

L. n. 48 of (18/03/2008), "Ratifica ed esecuzione della Convenzione del Consiglio d'Europa sulla criminalità informatica, fatta a Budapest il 23 novembre 2001, e norme di adeguamento dell'ordinamento interno" Italian Official Gazzette, General Series n. 80 del 4-04-2008 – Ordinary Supplement n. 79, http://www.parlamento.it/parlam/leggi/08048l.htm

L. n. 81 of 22/05/2017 Art. 18, Italian Official Gazette, General Series n.135 del 13-06-2017.

L. n. 81 of 22/05/2017 Art. 19, Italian Official Gazette, General Series n.135 of 13-06-2017.

L. n. 81 of 22/05/2017 Art. 20, Italian Official Gazette, General Series n.135 of 13-06-2017.

L. n. 81 of 22/05/2017 Art. 21, Italian Official Gazette, General Series n.135 of 13-06-2017.

L. n. 81 of 22/05/2017 Art. 22, Italian Official Gazette, General Series n.135 of 13-06-2017.

L. n. 81 of 22/05/2017 Art. 23, Italian Official Gazette, General Series n.135 of 13-06-2017.

L. n. 81 of 22/05/2017 Art. 24, Italian Official Gazette, General Series n.135 of 13-06-2017.

L.n. 124 of 7/08/2015, Italian Official Gazette, General Series n.187 del 13-08-2015

L.n. 145 of 30/12/2018, Paragraph 486 Italian Official Gazette, General Series n.302 of 31-12-2018 - Ordinary Supplement n. 62

L.n. 300 of 20/05/1970, Art 4 Italian Official Gazette, General Series n.131 of 27-05-1970.

L.n. 300 of 20/05/1970, Art 7 Italian Official Gazette, General Series n.131 of 27-05-1970.

La Legge Per Tutti (2015), "Consuetudine", laleggepertutti.it, https://www.laleggepertutti.it/dizionario-giuridico/consuetudine

Legislative Decree n,18 of 17/03/2020 *Misure di potenziamento del Servizio sanitario nazionale e di sostegno economico per famiglie, lavoratori e imprese connesse all'emergenza epidemiologica da COVID-19. (20G00034),* *Italian Official Gazette, General Series n.70 of 17-03-2020.*

Legislative Decree N. 231 of (08/06/2001), "Disciplina della responsabilità amministrativa delle persone giuridiche, delle società e delle associazioni anche prive di personalità giuridica, a norma dell'articolo 11 della legge 29 september 2000, n. 300", Italian Official Gazette, General Series n. 140 of 19-06-200

Legislative Decree N.66, (08/04/2003), "Attuazione delle direttive 93/104/CE e 2000/34/CE concernenti taluni aspetti dell'organizzazione dell'orario di lavoro", Italian Official Gazette, General Series n. 87 of 14 april 2003 S.O. n. 61

Martone A., Galanto A., Montonati P., Ramponi M., Righetti A., Sciaroni F., (2018), "Smart working, Job crafting, Virtual team, empowerment", Wolters Kluwer.

Merchant Savvy (2020), "Global Remote Working Data & Statistics", merchantsavvy.co.uk, https://www.merchantsavvy.co.uk/remote-working-statistics

Messenger J,Vargas Llave O., Gschwind L., Boehmer S., Vermeylen G., Wilkens M. (2017), "Working anytime, anywhere: The effects on the world of work", ILO- EuroFound Report. https://www.assolombarda.it/centro-studi/ilo-eurofound-working-anytime-anywhere-the-effects-on-the-world-of-work-full-report-1

Ministry of Labour and Social Affairs, (2016) "Ministerial Decree of 25/03/2016". https://www.lavoro.gov.it/documenti-e-norme/normative/Documents/2016/Decreto-Interministeriale-25-marzo-2016.pdf

Nayyar A., Kumar A. (2020), "A Roadmap to Industry 4.0: Smart Production, Sharp Business and Sustainable Development", Springer.

Newsroom Morning Future (2017), " Smart working and corporate welfare, things are moving (even in small and medium enterprises)", MorningFuture.com, Best practice, Smart Working. https://www.morningfuture.com/en/article/2017/11/17/smart-working-welfare-corporate-brazzale-7pixel-small-companies/145/

Newsroom Morning Future (2018), " Smart working: how companies are introducing agile working", MorningFuture.com, Trend. https://www.morningfuture.com/en/article/2018/09/12/smart-working-companies-workers-flexibility-cultural-change/410/

Newsroom Morning Future (2019), "A year of smart working: a boom in big companies, small-medium sized companies are still behind", MorningFuture.com, Trend. https://www.morningfuture.com/en/article/2019/01/21/smart-working-companies-pmi/520/

Occhino Antonella (2018), "Il lavoro agile nella contrattazione collettiva", Giappichelli Editore, fascicolo 3-2018. http://www.lavoropubblicheamministrazioni.it/lavoro-agile-nella-contrattazione-collettiva

Pezzatti Federica, "Compagnie già abituate: il virus non le ha colte di sorpresa", Le Guide- IlSole24Ore, pag 54-56, 2020.

Pogliotti Giorgio, "Gap con l'Europa colmabile solo con la rivoluzione organizzativa", Le Guide IlSole24Ore- Smart Working, pag 20-22, 2020.

Polycom (2017), "THE CHANGING WORLD OF WORK", Polycom.com, https://www.polycom.com/content/dam/polycom/common/documents/whitepapers/changing-needs-of-the-workplace-whitepaper-enus.pdf.

Public Administration Ministry (21/04/2020), "Monitoraggio lavoro agile- Dati Regionali al 21 Aprile 2020", Funzionepubblica.gov. http://www.funzionepubblica.gov.it/lavoro-agile-e-covid-19/monitoraggio-lavoro-agile

Reynolds Brie Weiler (2018), "FlexJobs 2018 Annual Survey: Workers Believe a Flexible or Remote Job Can Help Save Money, Reduce Stress, and More", FlexJobs, https://www.flexjobs.com/blog/post/flexjobs-2018-annual-survey-workers-believe-flexible-remote-job-can-help-save-money-reduce-stress-more/

Ruggiero Gianpiero (2019), "Sicurezza degli endpoint, come proteggere le aziende dalle minacce cyber", agendadigitale.eu.

Sara Assicurazioni, Sara Vita e First-Cisl, Fisac-Cgil, Fna, Snfia, Uilca (17/01/2018), "Credito Assicurazioni - Sara: Accordo Smart Working", Olympus Osservatorio. https://olympus.uniurb.it/index.php?option=com_content&view=article&id=17959:18sara&catid=233&Itemid=139

Save the Children (2019), " Gender Gap: la situazione in Italia", savethechildren.it. https://www.savethechildren.it/blog-notizie/gender-gap-la-situazione-italia

Schleicher Andreas (2019), "Pisa 2018 Insights and Interpretations", OECD-PISA. https://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf.

Snam and Femca-Cisl, Filctem-Cgil, Uiltec-Uil, (2015), "Chimici - Snam: Accordo Smart Working, 26 novembre 2015", Olympus Ossrvatorio, 2015. https://olympus.uniurb.it/index.php?option=com_content&view=article&id=14786:chimici-snam-accordo-smart-working-26-novembre-2015&catid=178&Itemid=139

The Confindustria Studies Centre (2020), "Gli effetti sui lavoratori dello smart working", Centro Studi Confindustria.

Tiraboschi Michele (2017), "Il lavoro agile tra legge e contrattazione collettiva: la tortuosa via italiana verso la modernizzazione del diritto del lavoro", Working Papers Center for the Study of European Labour Law "Massimo D'Antona.

Tonin M. Trebbi F., (17/07/2017), Il Sole 24 Ore, "*Se Oxford boccia la pubblica amministrazione dell'Italia" IlSole24Ore.it.*https://www.ilsole24ore.com/art/se-oxford-boccia-pubblica-amministrazione-dell-italia-AEAadWyB

Trabucchi Marco, (2020) "Smart working in Italia: a che punto siamo?", Vanity Fair. https://www.vanityfair.it/mybusiness/news-mybusiness/2020/02/04/smart-working-italia-a-che-punto-siamo

Tremolada Luca (2020), "Internet non collassa, è l'Italia a essere più arretrata", Le Guide IlSole24Ore-Smart Working, pag 84-85.

Ubi e Fabi, First-Cisl, Fisac-Cgil, Uilca, Unità Sindacale, Falcri Silcea Sinfub (2018), "Credito Assicurazioni - Ubi: Accordo Smart Working, 31 agosto 2018", Olympus Osservatorio. https://olympus.uniurb.it/index.php?option=com_content&view=article&id=19008:2018ubisw&catid=233&Itemid=139

University of Genoa (28/05/2020), "Condizioni abitative e disagio psico-fisico nel periodo di lockdown", life.unige.it, https://life.unige.it/comunicati-stampa/1508

Zabbeo Nadia (2020), "Reati informatici e D.lgs. 231/2001: fattispecie, sanzioni e soluzioni preventive", cybersecurity360.it. https://www.cybersecurity360.it/nuove-minacce/reati-informatici-e-d-lgs-231-2001-fattispecie-sanzioni-e-soluzioni-preventive/

ZeroUnoWeb Editorial Staff, (2019) " Smart working 2019: ecco a che punto siamo in Italia", ZeroUnoWeb. https://www.zerounoweb.it/smart-working/smart-working-2019-ecco-a-che-punto-siamo-in-italia/

Executive Summary

In recent years work practices have changed radically. Organizations are developing ways to optimize work configurations and to eliminate inefficiencies and set up flexibility in times and spaces. In this scenario, scholars started to talk about teleworking, a digital new phenomenon that predicted the possibility to work by home.

The discipline is based on the European agreement concluded on 16/07/2002[125] and implemented nationally in the agreement of 09/06/2004[126]. The starting European agreement between Social and Economic Committees was signed in Bruxelles and it is inserted into the European strategy perspective to modernize the organization of work. The agreement aims to guarantee a common framework at the European level, additionally, all the Member States need to implement the directives according to their national common traditions. The body is composed of twelve sections.

The second section fully describes the telework as "A form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer's premises, is carried out away from those premises regularly".

The structure is predetermined and it is completely voluntary from both parties' perspectives. Both involved sides can refuse the proposal without changing any character of the contractual agreement and job conditions. Jointly to the voluntariness, the regulator also established its reversibility. Teleworkers can turn back to the standard modality following the heads' or its request. The European agreement did not establish a specific way to modify the contract, this aspect is delegated to the single collective bargaining.

Going ahead, the employer is required to inform the teleworker about all the company conditions and rules, he has to control their application and the right to access to workplaces; on the other side, the teleworker must apply the safety policies. It follows that the employer can control and monitor his workers, it descends a soft issue on privacy. In that sense, Article 6, asserts that there exist some limits on the checking activity of the employer because the monitoring systems "need to be proportionate to the objective". Regarding the equipment (Article 8): the employer needs to guarantee provision and installation of tools which are necessary to work outside the company premises (if the telework isn't able to lonely get them) and the cost support.

As already said, the Agreement here described is the European one signed on 16/07/2002. Italian jurisdiction instead, applied and implemented the accord later, in 09/06/2004.

Norms and articles are essentially the same, the main difference entails the Article 11: while in the European Agreement the Article 11 regards teleworkers' collective rights in terms of representants into

[125] Gabaglio E., Jacobs G., Bonetti A., Plassmann R., 2002.

[126] Interconfederal agreement for the transposition of the European framework agreement on telework concluded on 16 July 2002 between UNICE / UEAPME, CEEP and CES, 2004.

bodies, in the national implementation it refers to the collective bargaining. In that sense, in the first paragraph, it is provided that, being the telework a particular form of working, parties can conclude collective agreements to integrate or implement some principles. These bargaining, or induvial contracts, should consider the reversibility of the agreement (paragraph 2).

Consequently, teleworking was updated in a more flexible conception: the Smart Working (SW). This new approach guarantees flexibility in the workplace (no more working by home but wherever, if outside the office), in the timetable and work instruments. The main concept is the job based on objectives and digital devices.

The two phenomena have some differences but also some common points. For the former aspect, the regulation proposes to completely differentiate smart working from the previous discipline and legal definition. The first difference, juridically relevant, is the workplace. The smart working can be performed both outside and inside the corporate premises. Only collective bargaining could impose some limits, that are related to the working time. The aspect of displacement could provide some legal difficulties, especially in measuring the timing of agile performance. In that contest, in telework, the problem was considered less prominent because, even if the performance was carried on outside the organization, the workplace was stable and fixed.

Other soft difference is the scope of the discipline: Article 18 on smart working, underlines the wish to better the work-life balance and to increase productivity and competitiveness. On the other side, telework was considered a means to modernize the work organization. Additionally, the workers' protection in terms of privacy and health conditions is a relevant difference between the two aspects. While in telework, the fixed place guarantees the possibility to manage and monitor the conditions of the workplace, in smart working this action is quite impossible. In terms of time and work agenda, telework is quite different from smart working. While in the last one the worker follows his colleagues' schedule, in terms of daily hours and weekly ones; in the telework, this was considered impossible. In the first introduction, the timing of work performance cannot be predetermined or measured.

Despite these differences, there are some common aspects[127]: the private and working life conciliation, the worker independence, the presence of common advantages between the firm (e.g. cost reduction) and personnel (self-government), and the use of ICT. However, Smart Working is more complete than teleworking.

The Italian situation is wide and is differentiated among the three main productive categories: Big Enterprises, Small and Medium Enterprises, and Public Administration.

[127] João Moreira Dias, 2017.

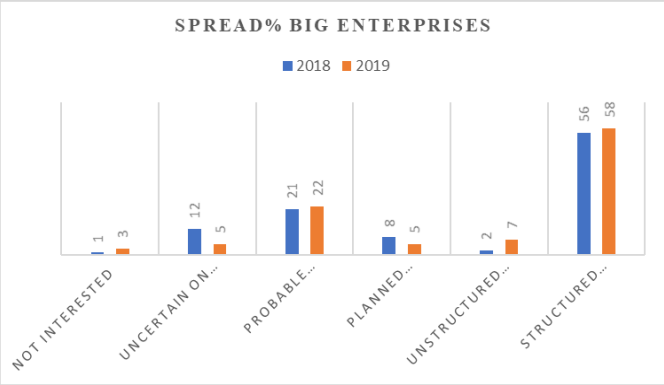


Figure 1 - Spread % Big Enterprises

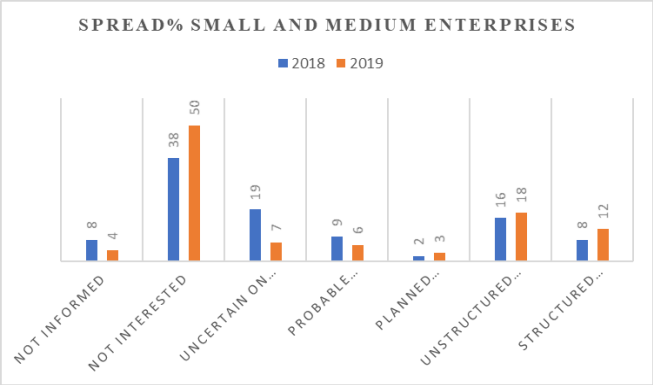


Figure 2 - Spread % small and medium enterprises

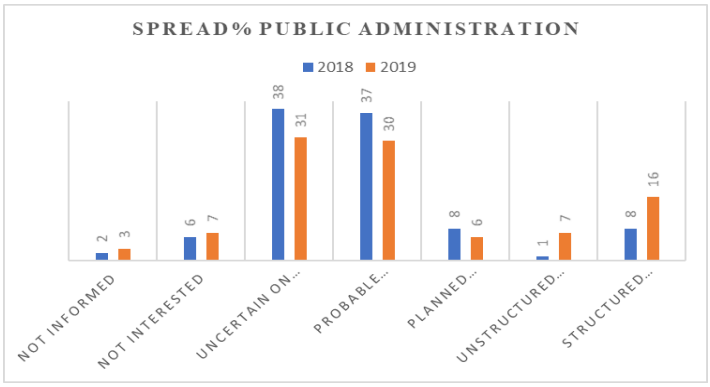


Figure 3 - Spread % Public Administration

These classes differentiate in the penetration rate of SW, in reasons behind the decision of introduction, the advantages and disadvantages that the establishment produces internally.

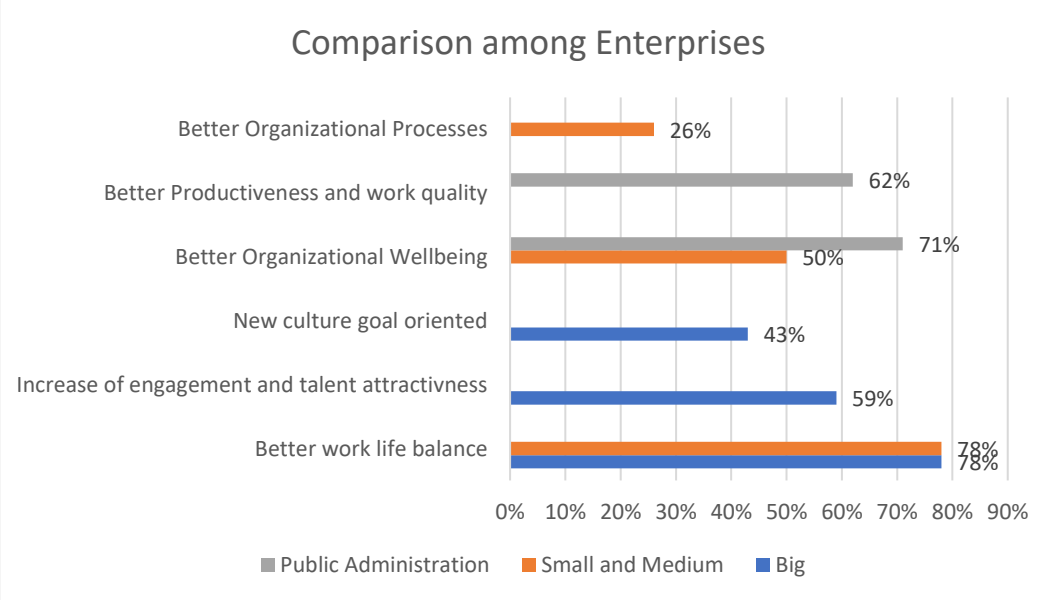


Figure 4 - Comparison among Enterprises

The 2019 Smart Working Observatory carried on a deep analysis of 84 Big Enterprises to evaluate the impact of the introduction on several variables.

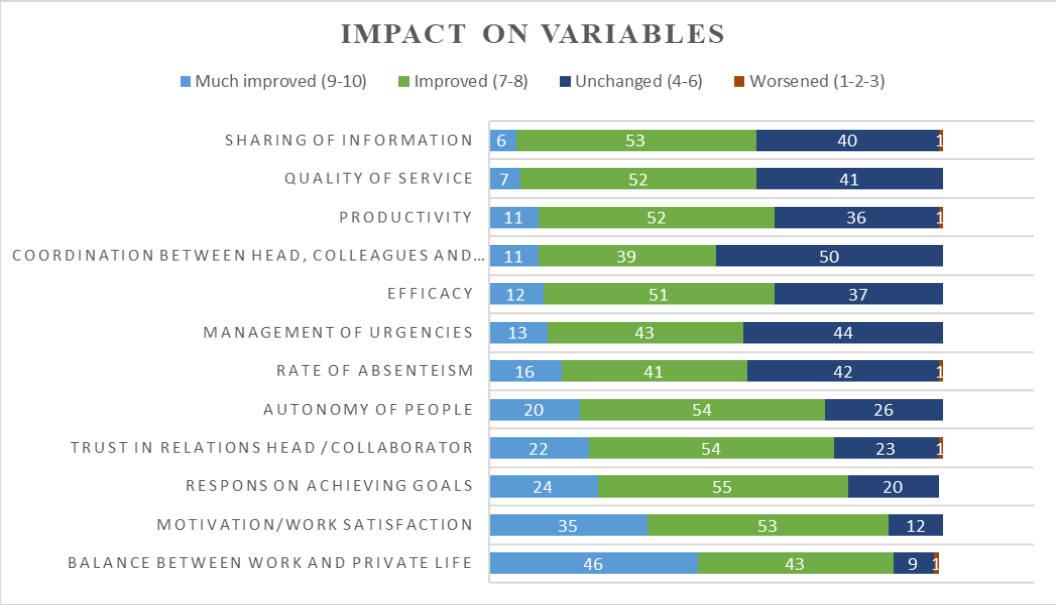


Figure 5 - Impact on Variables

The graph number 5 shows all the factors that were taken in analysis and the results on a range of 100. From the graph, the condition that significantly improved is the "balance between work and private life". The range 4-6 registered a varied number of responses with the answer "Unchanged". That covers a different percentage of answers related to the "balance between work and private life", to "Motivation /work satisfaction", and a maximum percentage of 50% of respondents to the "Coordination between the head, colleagues and external". The last range that was taken into consideration corresponds to values 1-2-3. In that case, who answered with these numbers, considered the introduction of smart working a drawback for some variables. The graph shows that only 1% of people claimed on the agile working and just on some specific aspects of work-life: "balance between work and private life", "Trust in relations head/collaborator", "Rate of absenteeism", "Productivity" and "Sharing of information".

For a general overview, the Smart Working Observatory of Milan collected the following information.

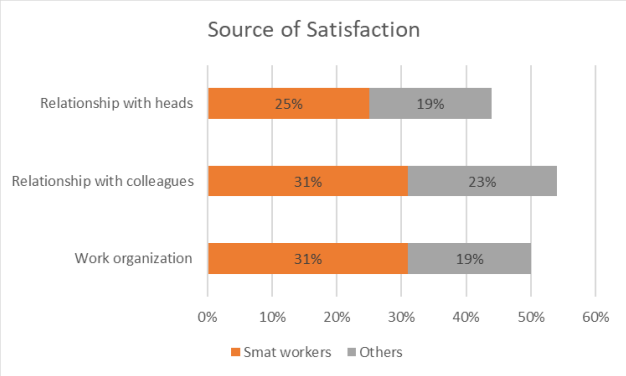


Figure 6 - Source of Satisfaction

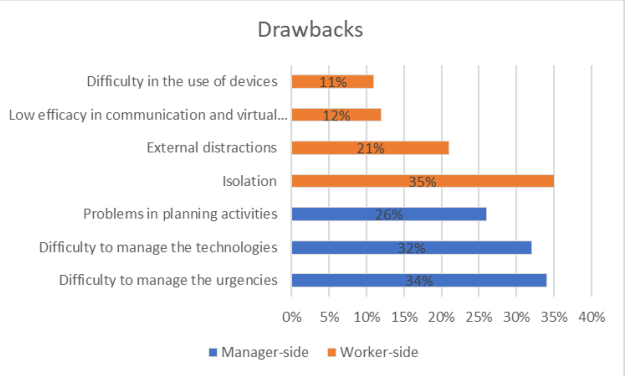


Figure 7 – Drawbacks

This working thesis investigates SW on different approaches through the study of data and papers. The objective of the analysis is, at most, the public administration that I will explore through different

viewpoints and tools. After the analysis of data and of the main legislative reforms that interested the smart working application in all the Italian territory, I will present a survey on public workers to obtain a general overview of the situation inside the Italian public sector.

The work is carried on in a particular historical period, that of the Covid-19 pandemic.

Before the pandemic period of Covid-19, the phenomenon of smart working was unknown to most public workers. The introduction of this instrument aimed, at first, to grant the worker greater autonomy. Truly he obtains more authority on his work that will be organized by objectives and that can exit from standard time schedules. Additionally, the worker necessarily acquires more trust from the employer that is not always able to control his execution and his daily routine. On the other hand, enterprises need to rethink their organizational model by drawing up technological tools and flexibility on times and spaces.

Indeed, the responsibility is double: on one side workers need to be accountable and honest on the job they do; on the other side, the enterprise needs to be able to organize processes aimed at control and evaluate performances. The pandemic created an extraordinary scenario in which the SW penetration rate drastically increased. Moreover, the lockdown period doesn't allow me the possibility to widely consult books and libraries, that is why, the main sources are online journals and online articles, besides the classic databases like Istat and Eurostat.

Considering that Smart Working is implemented through software, data platforms, and digital tools, its diffusion is directly connected to the concept of digitalization of the Italian market. The second chapter will deeply show the digitalization of each sector and the detail for what functions and practices are mainly exploited by internet connections.

In the year 2019, the Italian access to broadband was 74,3% and the rate of use of the Internet was 67,9%, with a slow increase of 1,5% respect the year 2018. On the contrary, the daily use of the Net considerably increased from 51,3% to 53,5%.[128] The use of the Internet and, the broadband access, is highly correlated with two main factors[129]: the age of family's members (almost the totality of families with a minor use broadband access) and the qualification (for example a degree: the percentage of graduated of 54-73 years and of 23-34 years who serf on the net is about 88%)[130]. In addition, in a broader context, the PISA[131] survey shows that about 5% of students in all OCSE Countries, on average, have no access to the Internet and those who access, spent at least three hours per day.

In particular, the percentage rate of population with at least a basic level of digital competences is about 39%, even if there could be some variations based on age and instruction. The maximum level of percentage is reached by 20-24 years (67%) and the minimum level by 65-74 years (15%). Generally

[128] Istat, 2019.
[129] Iacono Nello, 2019.
[130] Istat, 2019.
[131] Schleicher Andreas, 2019.

speaking, it is possible to assert that the level of the Italian population on digital competences is quite low.

From 2017 all sectors increased their spending in digital transformation, for the exception of Public Administration which has registered a slow growth.

Sectors differ each other on the speed of the digitalization process and on the areas of interest.

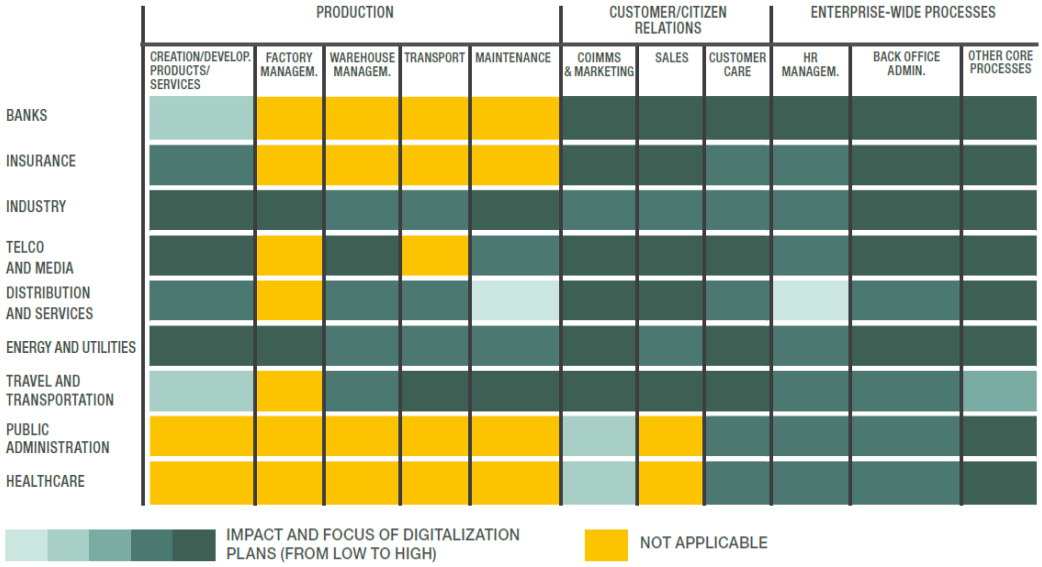


Figure 8[132] *– Digitalization process among sectors*

Thanks to the deep analysis of *Confindustria Digitale*, it is possible to analyse the digital transformation in Italy per sector of interest and the intensity of the investment.

Jointly to the digital competences, the launch of the agile working cannot be considered just an application of laws or regulations, but it needs a specific training and some specific devices to allow employees performing tasks as they were in the office. To better clarify, what is needed to successfully integrate smart working into a business? There are some necessary steps to carry out[133]: firstly, employers encourage agile working by offering technological devices and using internal marketing campaigns; then, they have to change the culture by rearranging performance evaluations processes; third, they need to integrate smart working into the business and so, into the company hierarchy. The other main question we could ask is: "how firms can guarantee smart working to take effort?" The action to mainly carry on is to encourage motivation and awareness of workers. Organizations have to focus on internal communication to clarify the reasons for the change management and then, they need to offer training courses. Effectively the change regards, above all the others, the usage of innovative tools of communication, meeting online, work in teams remotely and so on.

[132] Anitec-Assinform, 2018

[133] Newsroom Morning Future, 2018.

Nevertheless, it is possible to individuate some standard steps[134], common for all the businesses that want to start this technological project. It is essential to individuate the core activities, processes and departments in which there is the wish to introduce agile working. To build the project and to structure the activities it needs an effectiveness and efficiency (cost-benefit) analysis. The economic analysis is the key point to verify if there would be concrete advantages for the Organization. Obviously, for the success of the introduction, it is needed a good application of some planning leverages such as good technical infrastructure, the ability to reshape the physical layout of the organization and good training for the development of soft skills. The last step is the commitment to monitor, control, and assess the project through the definition of indicators.

Moving the focus on the Italian public sector, it is characterized by a low rate of digitalization and general backwardness. By analysing papers and numbers, the first question readers would ask is "Why Italian public administration is so lagging behind private enterprises?".

Undoubtedly there are a lot of issues that could raise for public services. In 2017, a study of the Oxford University analysed civil services of various worldwide Countries and collected strengths and weaknesses basing on an Index: the International Civil Service Effectiveness (InCiSe) Index. The InCiSe is an international indicator that analyses national governments, international organizations, civil society partners and academics on dimension and metrics.

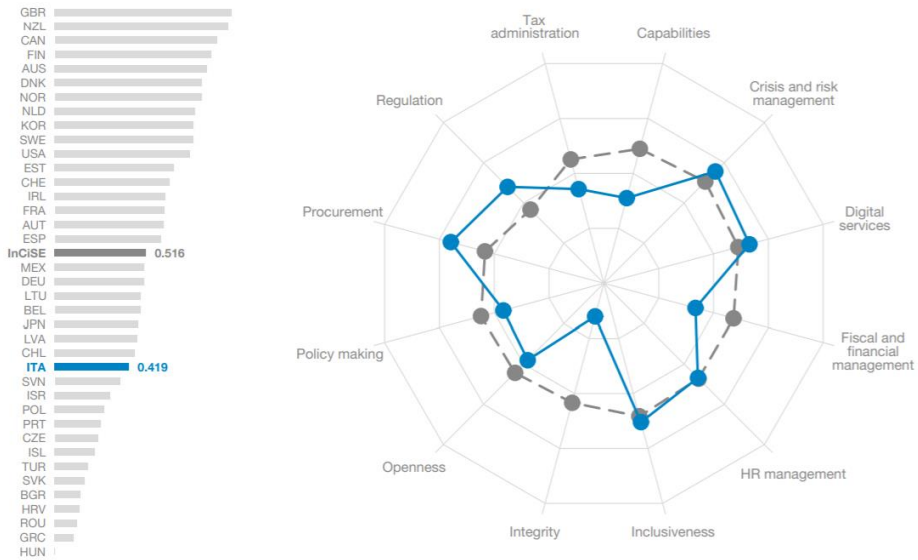


Figure 9 – Italian civil services, indicators and ranking [135]

134 ELENA, 2018.

135 Figure taken from ISTAT (17/12/2019). The spotted line represents the average value of all the analysed Countries per dimension; the blue line are the values of Italy.

According to the Results Report 2019, Italy is ranked 25th among 28 Countries on the index. The graph clearly shows the strengths and weaknesses to respect the average values. It has difficulties in attracting human resources and is characterized by a lack of transparency and flexibility.

In order to update Italian institutions, on the 7th August 2015 Government announced the Madia Reform, with the objective of SW introduction in the Italian Public Administration. It followed law drafts that regulated the implementation with some specific Directives. The final output was the promulgation of the Law n.81 on the 22nd of May 2017. The relevant articles, (from number 18 to 24), will be deeply analysed in the second chapter of this working paper. The main objective is to advise employers and employees on how to behave and to protect them from liabilities by underlining who bears the various responsibility.

The Law. N. 81/2017 is divided into three Chapters (Ch. 1 on the protection of self-employment, Ch.2 on agile work, and Ch.3 on final disposition). It is evident the contrast between the first two chapters: one related to the independent work, the other concerning the subordinated work discipline.

The starting Article 18 presents the smart working not as a new contractual agreement, but just like a new way to perform a subordinated work performance. This new modality is a way to guarantee competitiveness in the labour market and higher productivity through a new work-life balance. The new employment-based work is established through an agreement between the worker and the employer, even with the organization of stages, cycles, and objectives. The agreement provides for the possibility to use technological tools to perform the working activity and specify the absence of specific time constraints and a fixed workplace. In smart working occurs a clear alternate between outside and inside the office. Besides, the workplace does not need to be previously established, in that sense the position lacks specific importance. From that aspect, it descends one of the main problems related to the smart working introduction: the control. Analysing Article 18 there arise some critics and some difficulties in the understanding of what the regulator meant by, such as flexibility and subordinated work, based on cycles and objectives and the "establishment of agreement among parties". "The agreement is stipulated in written form for administrative regularity and proof, and regulates the execution of the work performed outside the company places" (article 19). On reflection, the request for the written form serves the interest of both the employer and the employee. Smart workers are also subjected to the same economic and legal treatment of employed workers that carry on the same tasks and have the right to continuous learning (Article 20). Among the discipline, the employer is considered the first liable for the safety and security of its employees, it follows that to guarantee protection and security, the employer is indirectly required to monitor its workers (Article 21).

In addition to Law n.81, Italian regulation gives high power to collective bargaining. In summary, each enterprise can customize needs through private agreements.

According to Italian Law, Collective bargaining can take place at different levels[136]. In that context, I will refer to collective bargaining at the National and Corporate category. The agile work discipline is peculiar and not easy to implement, in fact since the introduction of Law no. 81/2017, there resulted in a contention between the Law itself and the role of collective bargaining. These two disciplines are not always in accordance, sometimes they overlap and sometimes are in contrast to each other, for that reason it is necessary to establish an order on the source's preference.

The theme that should be analysed is that of deliverability with regard to the collective and individual bargaining, even if it is complex and not easily exploitable. In practice, it exists a double activation channel for agile work: the specific one, employing individual agreements in compliance with Law no. 81/2017; and collective bargaining. The main difference is that only the activation of agile modality through individual agreements can lead to normative advantages showed by the second section of Law no. 81/2017[137].

Concerning fonts and levels of application, it needs to be an order to refer to. In principle, however, the order of the sources must reflect the pre-eminence of law no. 81/2017 and also of the applicable collective agreement, if applicable, in compliance with the non-regression clause of the respective provisions by the individual contract. The indisputability "in Pejus" by the agile work pact, in theory, should be considered towards the law and then towards the collective agreement.

Among the complex discipline, there arise troubles in terms of time. The collective bargaining stipulated before the implementation of the Law no.81/2017 should provide some contrasts with the Law itself. Scholars questioned the derogation and in particular wondered about the possibility of collective bargaining to derogate "in Pejus" the Law (the answer should be negative), and if the collective bargaining cannot derogate "in Melius" the Law (the answer should be negative too). Some references are also made to the individual bargaining, even if there coexist differences among the specific Law and the contract, it always prevails the specific Law. Moreover, Article 18 of Law no. 81/2017, cannot be intended to derogate the normative both to the individual bargaining and to the collective one.

The key point is the understanding of the crossing mechanisms between general discipline and specific contacts. Regarding the timing of contracts, it could be easy to deliberate that all the bargaining concluded before the introduction of the law no.81/2017, should be considered inapplicable. Actually, it is not so: the time is not consistent with the application and implementation of a specific contract because the topic of deliverability is considered independent from the starting date of the contract.

Beyond the regulation, several are the information concerning private enterprises, much higher than that regarding the public sector. That is why, in 2017, The Smart Working Observatory of Milan decided to investigate the level of SW adoption in the Italian public institutions. For a general overview, it results

[136] Dictionary of workers' rights.

[137] Giovani giuslavoristi Sapienza Group, (2017).

that in the year 2019 total smart workers were 570 thousand, the higher percentage were men from the North-West of the Country and aged on average 48 years. The agile population divided per frequency into who implements smart doing “Sometimes” and who “Usually” works from outside the office. On the European overview, Italy places at the bottom of the ranking for the “Sometimes” usage and in the middle for the “Usually” utilization.

Therefore, my empirical study will continue on the investigation of the Italian Public Administration. Data will show the backwardness of the Italian public sector, respect the other product segments and European public services. In the year 2019, The SW penetration rate in the public sector was the lowest but also the only one that mainly grew up respect the previous year (+8%). This means that public administration has the potential to grow, but it will be necessary a drastic shock of change both in organizational design both in ways of thinking and acting.

Later, my investigation will study the worker-side effects of implementing SW in public offices. In order to reach the highest number of respondents, I created an online questionnaire, composed of 25 questions, where workers could have access only by opening a link that I sent through message or email. On the 388 respondents, the main cluster of my investigation was women older than 50, located in the centre of Italy. The main work position that characterizes the cluster is that of subordinated employees.

The questionnaire has been conducted in anonymous form, in order to better guarantee honest answers and has been mainly addressed to subordinated employees who were required to assess their performance and feelings, respect various dimensions. Among those, I investigated the awareness on SW before the coercive introduction and how many workers had already exploited it before, their perception on productivity, the change in work-life balance before and after the introduction, also related to their welfare and satisfaction, the change in commitment to the company and the difficulties workers have had in working from home. All these aspects have been investigated through different types of questions (multiple choices, Likert scale and open answers). Successively, I have collected answers in graphs to better show results to the reader.

Before the Covid-19 pandemic, only half of the respondents already knew what smart working was, and more than 80% never experimented with the phenomenon. The value is significant and underlines the backwardness of Italian public administration that, probably, without the period of lock-down would have employed years to reach the same penetration rate than during this time.

It is also true that this extraordinary moment allowed public administration, and also private enterprises, to enjoy more easy and shorter bureaucracy and the high penetration rate was granted by the total acceptance of workers that could have not to refuse it.

In my research, the majority of workers declared to work more hours, to perceive higher productivity, and to are able to take breaks and free time as like as in-office work. In summary, the majority of employees are satisfied with how they work from home in terms of productivity and work-life balance.

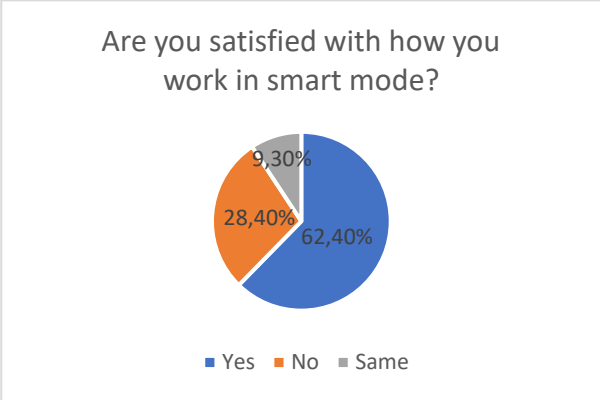


Figure 10- Satisfaction

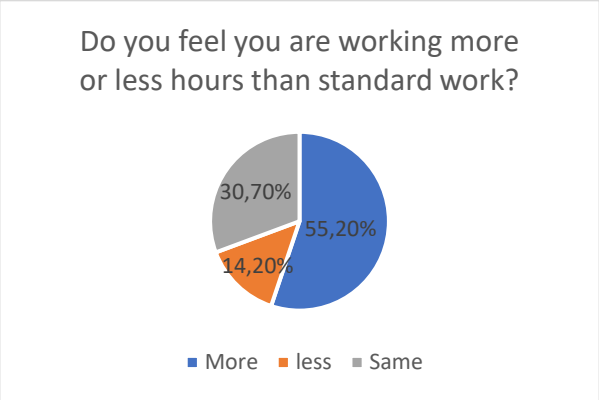


Figure 11 – Time perception

Besides these personal aspects, the more comfortable environment, the decrease in stress for travel, and the minor interruption from colleagues are all benefits shared by workers. My survey also underlines the advantage of better work management.

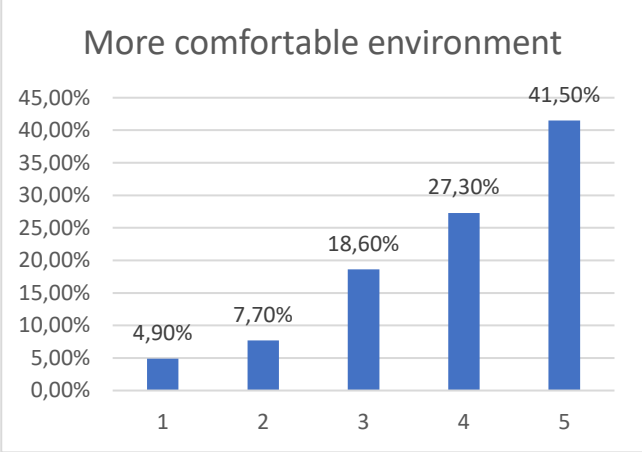


Figure 12 - More comfortable environment

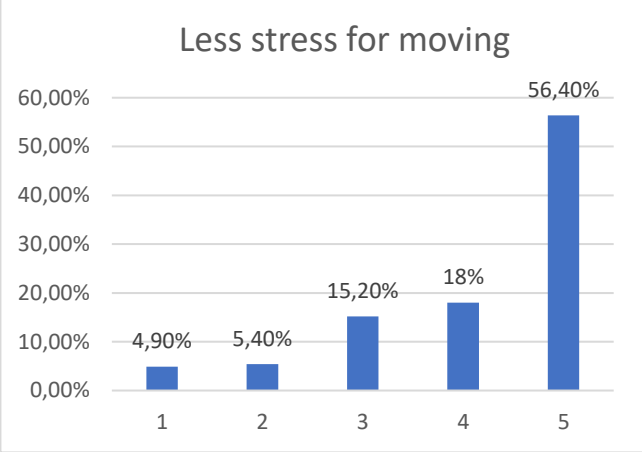


Figure 13 – Less stress for moving

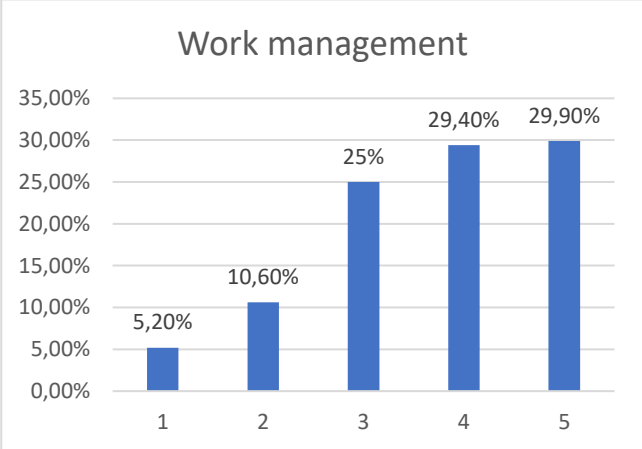


Figure 14- Work management

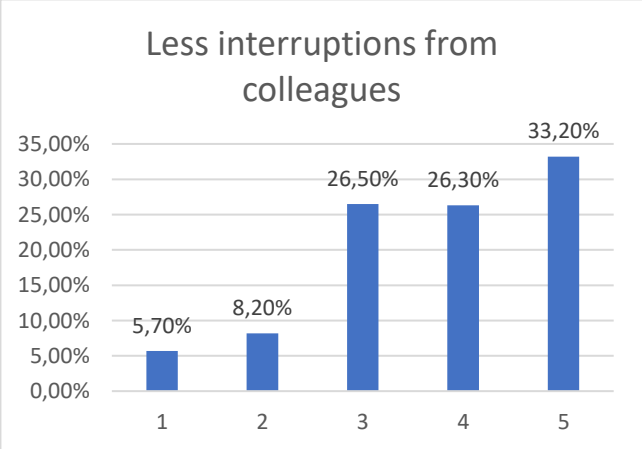


Figure 15 – Less interruptions from colleagues

For a huge number of answers and a deeper analysis, I arranged some empty boxes in which employees answered with their opinion on these themes. The backwardness of the archive (based on paper and not

digitalized) and the difficulty in working while managing family and children, is the main trend of workers' complaints. The Covid-19 period interested all the population and so all the family members concentrated in the same place. Moreover, workers declared to need technical support, training, and informatic tools to work properly.

The following two graphs underline the public workers' requests and difficulties in smart working.

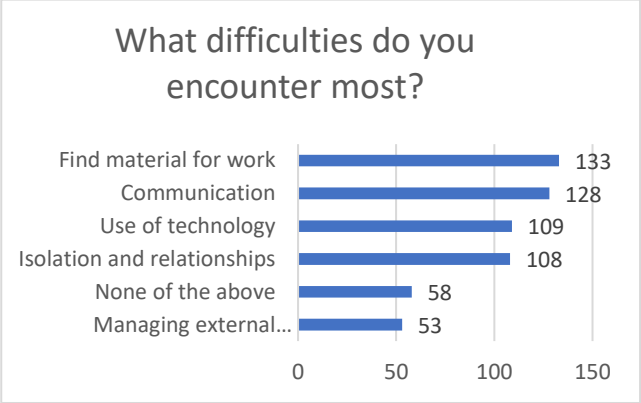


Figure 16- Difficulties

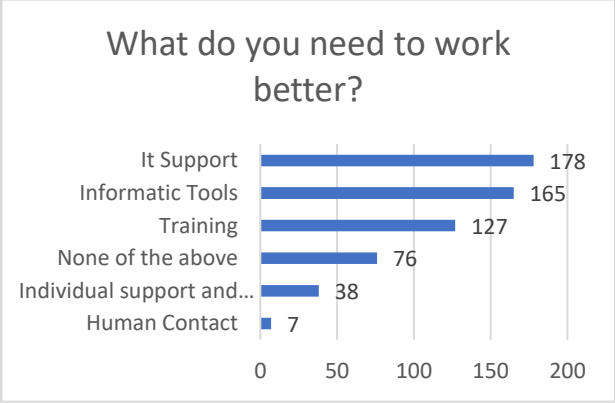


Figure 17 – Needs

Researches by psychologists and universities underline the great influence of pandemic closure on the psychology of people. It created more stress, anxiety and depression and, accordingly, that reflected on the work. This could be a reason why some workers refuse agile position and prefer to move towards the office, change the work-place and detach from their comfort habitat.

Nowadays, according to the Public Administration Ministry, public agile workers are more than 70%.

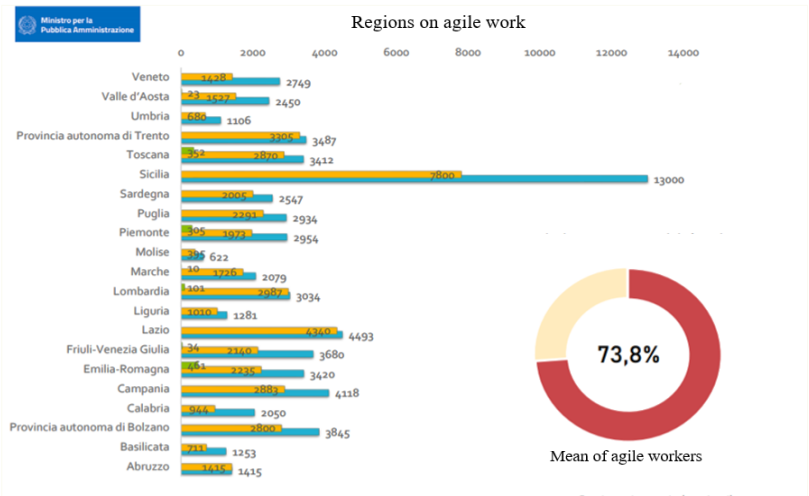


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Figure 18- Italian Regions on agile working

Some Regions, in little percentage, still adopt telework (green lines) but the great majority has implemented smart working (yellow lines). Some Regions introduced the agile work for almost the

138 Figure taken by: Public Administration Ministry, (2020).

totality of personnel (for example those more affected by the pandemic such as Lombardy), some others implemented the phenomenon only for half of the employees (such as Sicily).

On reflection, in the Covid-19 scenario it has been more difficult to work from home, people found themselves suddenly locked in houses without the possibility to acquire paper documents and to organize their work from the office. Also for that reason, a part of the investigated workers, showed their discomfort in working by home and would prefer moving toward the office. In future researches, it could be some insights into my study. For example, the performance and the productivity of workers should be analysed by managers, and not by agile employees themselves, in order to have an external and objective overview. Moreover, the present research could pursue by investigating how many workers and enterprises are interesting in maintaining smart working after the coercive period.

From a regulatory point of view, it will be necessary a slimming down of bureaucracy and the arrangement of sufficient resources to destinate to public institutions. It is now clear that it would need a lot of effort, both monetary both occupational, to update databases, digitalize archives, buy technological tools and trainee employees.

To summarise, besides considering these drawbacks, the majority of respondents will reveal satisfaction with the SW implementation. All that remains is to wait and verify how many of them will confirm they wish to work agilely.

Bibliography

Anitec-Assinform (2018), "Digital Trends in Italy 2018", Anitec-Assinform- Confindustria Digitale.

Dictionary of workers' rights, "Contratto collettivo - CCNL ", WikiLabour.it, https://www.wikilabour.it/contratto%20collettivo.ashx

ELENA (2018), "Toolkit for the Implementation of Flexible Working Arrangements in Private Companies", ELENA and Bocconi University.

Gabaglio E., Jacobs G., Bonetti A., Plassmann R. (2002), "FRAMEWORK AGREEMENT ON TELEWORK", Businesseurope.eu.

Giovani Giuslavoristi Sapienza Group, (2017). "Il lavoro agile nella disciplina legale, collettiva ed individuale.", C.S.D.L.E. "Massimo D'Antona".Collective Volumes – Working paper N. 6/2017. http://csdle.lex.unict.it/Archive/WP/WP%20CSDLE%20M%20DANTONA/WP%20CSDLE%20M%20DANTONA-Collective%20Volumes/20171213-120443_gruppo-GGGS_wp-6-2017pdf.pdf.

Iacono Nello (2019), "Rapporto Istat, l'Italia è indietro sulle competenze digitali: ecco che fare", Agendadigitale.eu. https://www.agendadigitale.eu/cultura-digitale/rapporto-istat-litalia-e-indietro-sulle-competenze-digitali-ecco-che-fare/

Interconfederal agreement for the transposition of the European framework agreement on telework concluded on 16 July 2002 between UNICE / UEAPME, CEEP and CES, 2004.Filcams-CGIL, (2004). http://www.filcams.cgil.it/accordo-interconfederale-09-06-2004-recepimento-dellaccordo-quadro-europeo-sul-telelavoro-concluso-il-16-luglio-2002-tra-uniceueapme-ceepe-ces/

Istat (2019), "Comunicato stampa. Cittadini e ICT", Istituto Nazionale di Statistica. https://www.istat.it/it/archivio/236920

Istat, (17/12/2019), "*Permanent Census of public institution 2017: the main results", Istat,* .https://www.istat.it/it/files//2019/12/Report_CENSIMENTO-ISTITUZIONI-PUBBLICHE-_2017.pdf

JOÃO MOREIRA DIAS (2017),"Smart Working. Dialogues between Portugal and Italy", Labour&LawIssues. file:///C:/Users/Serena/Downloads/7572-22855-1-PB%20(1).pdf

Newsroom Morning Future (2018), " Smart working: how companies are introducing agile working", MorningFuture.com, Trend. https://www.morningfuture.com/en/article/2018/09/12/smart-working-companies-workers-flexibility-cultural-change/410/

Public Administration Ministry (21/04/2020), "Monitoraggio lavoro agile- Dati Regionali al 21 Aprile 2020", Funzionepubblica.gov. http://www.funzionepubblica.gov.it/lavoro-agile-e-covid-19/monitoraggio-lavoro-agile

Schleicher Andreas (2019), "Pisa 2018 Insights and Interpretations", OECD-PISA. https://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf.