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COVID-19: A new meaning of telework.

Based on an online survey of the employee's perceptions

João Afonso Godinho Calhau

Dissertation submitted as partial requirement for the conferral of
Master's in management

Supervisor:

Professor Fátima Suleman, Associate Professor, with habilitation
ISCTE - Instituto Universitário de Lisboa

October 2021



**BUSINESS
SCHOOL**

Department of Marketing, Operations and General Management

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Resumo

A pandemia de Covid-19 obrigou as organizações a adotar o teletrabalho como a única solução para manter a atividade num cenário de confinamento obrigatório. Ao nível académico abriu espaço novo para investigação ao nível individual e organizacional. O nosso estudo explora o nível satisfação dos teletrabalhadores num conjunto de dimensões do teletrabalho. Além disso, compara dois tipos de teletrabalhadores, os que já exerciam a sua atividade neste regime e os que aderiram ao trabalho remoto durante a pandemia. Esta pesquisa de natureza exploratória baseia-se num inquérito online, aplicado em 2021, que permitiu a recolha de dados sobre 156 teletrabalhadores.

Os resultados empíricos mostram uma perceção muito positiva relativamente à produtividade individual, à flexibilidade e autonomia na programação das tarefas de trabalho, e ao equilíbrio trabalho-vida pessoal, devido à flexibilidade que o teletrabalho permite. Estas são consideradas as principais vantagens do teletrabalho que se tornou obrigatório. Do seu lado, o isolamento surge como um aspeto negativo, dentro dos domínios estudados. Acresce ainda que as fronteiras entre o trabalho e responsabilidades familiares se tornaram mais confusas, devido á pandemia, o que pode provocar conflito entre estes dois papéis.

Relativamente à organização, os inquiridos admitem que os gestores desempenharam um papel mais difícil na gestão remota das suas equipas, durante a pandemia. No entanto os teletrabalhadores consideram, todavia, que houve acompanhamento, mesmo remotamente. Relativamente ao futuro, os trabalhadores que participaram no estudo consideram a experiência positiva e pretendem continuar em teletrabalho num futuro pós-pandémico, mas num modo híbrido.

Palavras-Chave: Efeitos do Teletrabalho; Pandemia Covid-19; Satisfação individual; Suporte organizacional; Teletrabalhadores usuais; Novos teletrabalhadores

JEL Classification system: J8; M50

Abstract

The Covid-19 pandemic forced organizations to adopt telework as the only solution to maintain activity in a scenario of mandatory confinement. The pandemic has created room for research of individual and organizational options. Our study explores the level of satisfaction of teleworkers on several dimensions. Additionally, it compares two types of teleworkers, those who were already working in this regime and those who joined remote work during the pandemic. This exploratory research is based on an online survey, applied in 2021, which allowed the collection of data on 156 teleworkers.

The empirical results show a very positive perception regarding individual productivity, flexibility and autonomy in scheduling work tasks, work-life balance, due to the flexibility that teleworking allows. These are considered the main advantages of teleworking that have become mandatory. On the other hand, isolation emerges as a negative aspect within the domains studied. In addition, the boundaries between work and family responsibilities have become blurred, which can cause conflict between these two roles.

Regarding the organization, respondents admit that managers played a more difficult role in managing their teams remotely during the pandemic. Teleworkers consider, however, that there was reliable support, even remotely. Regarding the future, the workers who participated in the study consider the experience positive and intend to continue teleworking in a post-pandemic future, but in a hybrid mode.

Keywords: Telework effects; Covid-19 Pandemic; Individual satisfaction; Organizational support; Usual teleworkers; Newcomers

JEL Classification system: J8; M50

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“Moving to a full flex workforce has been a necessity given COVID-19 but it only accelerates what we have believed for a long time – full-flex is the natural extension of embracing diversity in all its facets. Balancing the apparent freedom of flex for a workforce with the necessity for productivity improvement, not just its maintenance, is the true challenge for leaders in any contemporary business in 2020 and beyond.”

Blair Vernon, 2020

Chief executive, Financial services enterprise – New Zealand.

Introduction

In December 2019, the World Health Organization (WHO) received the first report of several cases of an unidentified illness from Wuhan, a Chinese city. It was later discovered that this illness was caused by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which the WHO called it: a new strain of coronavirus, COVID-19. Symptoms of the disease have begun to occur in China. Consequently, on January 30, 2020, the WHO declared the outbreak a "public health emergency of international concern" and later in March declared it a pandemic, alerting the world to the severity of the situation (World Health Organization, 2020).

The Covid-19 pandemic and its social distancing measures and extreme repercussions (e.g., lockdown) imposed by the governments worldwide, have forced organizations and workers to change their usual working day routine. The sheer scale of this pandemic rapidly led to dramatic changes in how businesses act.

To limit the spread of the virus and protect the health of their employees, organizations have had to adapt to a new scenario. Quarantines, lockdowns, and self-imposed isolation have led companies and organizations around the world to quickly adapt and embrace a "new" way of working. By separating work from being done at the central office, workers have been forced to work remotely from their homes and embrace teleworking or "telecommuting" (Nilles, 1975).

Although telework is now in "the center of the attentions" for most organizations given its important necessity in this pandemic context, this form of virtual work has been around for several years. In fact by the end of the last century, 11.5 million people in the U.S.A were teleworking (Bailey & Kurland, 2002).

Although the number of teleworkers has been raising in the recent last years, this pandemic and the huge technological advances of the past two decades have accelerated the rapidly growing trend of remote working. Since the outbreak, working from home has become the norm for millions of workers around the world (see annex B). Previous research suggest that around 40% of the current workers in the EU began to telework in a full-time basis as a result of the pandemic (European Commission, 2020), where almost 4 in 10 employees in the Europe started teleworking (Eurofound, 2020).

Previous research has long suggested telework as a flexible work arrangement that allows workers to better manage work and family demands, increasing flexibility in the realm of work and personal life (Shockley & Allen, 2010). Voluntary and partial teleworking is often associated with reduced stress, increased autonomy and flexibility, allowing workers to feel more satisfied with their work leading to a better performance (Gajendran & Harrison, 2007). However, there can also be risks if it is not implemented and controlled correctly, since teleworking implies being away from the traditional work environment and, therefore, there can be risks from the isolation, since the worker loses contact with his colleagues and managers (ILO, 2020b).

According to the International Labor Organization (ILO), telework under normal circumstances should happen as a voluntary agreement between employer and employee, which may not be the case as pandemic restrictions have forced employees to work from home (ILO, 2020a).

The covid-19 epidemic that has quickly swamped the entire world, may have brought a new meaning to telework. However, studies on the current landscape of telework during the pandemic are quite limited due to its novelty and recent emergence.

Therefore, the question arises: What is actually known among researchers about home-based telework during the covid-19 pandemic? At the time of writing this dissertation, the amount of research on the topic of teleworking during the covid-19 pandemic is quite limited and, consequently, there is still a significant lack of knowledge in this field. In fact, the covid-19 pandemic has uncovered an unstudied domain in the telework literature, where a knowledge gap is evidently introduced, when it comes to telework under atypical scenarios.

Our study attempts to unveil certain dimensions of telework during the pandemic. More precisely, the research tries to answer to the following questions: What is the level of satisfaction of employees who teleworked during the pandemic? Are there any differences between teleworkers that were assigned to remote work before pandemic and those who had to compulsorily engage in this type of work due to the pandemic? To answer to these questions, this exploratory research draws on a dedicated online survey, applied in 2021, that allowed to collect data on 156 teleworkers. Descriptive statistics help us to achieve the following goals: examine the perception of teleworkers regarding their satisfaction with remote work; explore the advantages and disadvantages of this kind of work; and unveil the intention of sampled teleworkers to continue in remote work in a post-pandemic future.

Furthermore, the research compares two types of teleworkers: those who were already working remotely before the pandemic and the ones that started it during the pandemic. We label the first group as *usual teleworkers* and the second as the *newcomers*.

According to the two different types of teleworkers, two distinct *Telework moments* were defined: *Before Pandemic Restrictions*, for *usual teleworkers* and *in pandemic restrictions* for *newcomers*. We attempt to find out the differences of the effects of telework between usual teleworkers and newcomers. This comparison helps understanding the particularities of teleworking during pandemic and it contributes to increase on unexplored dimensions of remote work.

It is well-known that the pandemic may have brought a new meaning to telework. It has gone from being voluntary and partial to become a mandatory and full-time home-based form of work (Chong et al., 2020). Many organizations had no choice but to make a hasty transition to a mandatory, full-time form of teleworking to offset the spread of the virus. Thus, working from home during the pandemic may be experienced differently than when it is freely chosen as a voluntary decision under normal circumstances. This assumption can be supported by Hammock and Brehm (1996), where one of their research findings was that a forced choice seems less attractive to an individual than a free choice (Hammock and Brehm, 1996 as cited in Hallin, 2020).

The rest of manuscript is organized as follows. The 1st and next chapter examine the available research on telework, its history, definition, characteristics and most important, its effects on teleworkers. The 2nd chapter presents the methodology followed to pursue the answers to the core objectives above identified. The 3rd chapter of the thesis describes the data analysis process and the results of the data collected to achieve the defined objectives. Finally, the 4th chapter discusses the results obtained, establishes the conclusions of this study as well as its limitations and ideas for future research.

This study contributes to the scarce research on the perceptions of workers about remote work in an atypical scenario. Companies need more detailed information about teleworking in order to develop better systems to support their employees to telework more efficiently and be more aware of the impacts of teleworking during a similar situation. This study may also be useful for future research when scholars look back at the impacts of this pandemic or if a similar situation arises.

Chapter 1 - Literature review

1.1 Telework – History, definition and characteristics

During the 1950s, the developments on communication systems, technological improvements and new inventions led to the idea that telecommunications combined with computer technology could make possible for work to be done away from the traditional central office (Baruch, 2001).

The concept of Telework or "Telecommuting", was first coined by Jack Nilles (1975) in the early 1970s, when an oil crisis arrived and concerns about gasoline consumption, long commutes and traffic congestion in major metropolitan areas were first sharply felt (Bailey & Kurland, 2002). Although there is no universally accepted definition of telework, it can be defined as the use of telecommunications technology to partially or totally replace travel to and from work: "A telecommuting network has computational and telecommunications components which enable employees of large organizations to work in offices close to (but generally not in) their homes, rather than commute long distances to a central office" (Nilles, 1975).

Nowadays, with the exponential growth of telecommunications technology (e.g. Wi-Fi and mobile data available almost everywhere) telework can be performed in many remote locations such as: coworking centers, coffee shops or airports (Sullivan, 2003). Therefore, telework can be seen as a flexible work arrangement that allows employees to perform their tasks elsewhere that are normally performed in a primary or central workplace (the office), during at least part of their working hours, using technology to interact with others inside and outside the organization (Bailey & Kurland, 2002; Baruch, 2001; Feldman & Gainey, 1997). Telework has long been treated as an alternative and flexible work arrangement that can meet the needs of workers for a better work-life balance, leading to greater integration between work and family roles (Duxbury et al., 1998; Shockley & Allen, 2010).

Furthermore, the definition recognizes that telework can be done by an individual part-time as a more flexible and conventional work arrangement, or as a full-time arrangement, although it is more unusual (Gajendran & Harrison, 2007). Indeed, Bayley and Kurland (2002) indicate that many previous studies have strictly defined telework as full-time, always-at-home work, which does not reflect reality. In fact, other previous studies have shown that only 10% of teleworkers are engaged in full-time arrangements and part-time arrangements triumph very significantly (Standen et al., 1999). Additionally, it is stated that telework (under normal

circumstances) should happen as a voluntary agreement between employer and employee (ILO, 2020b).

The effectiveness of this working method may depend on whether it was chosen voluntarily by the employee or whether the employee was coerced into participating in it, since a forced choice feels less attractive to the human being (Hammock and Brehm, 1996 as cited in Hallin, 2020). A more recent study conducted by Bloom et al. (2015), found that workers who voluntarily chose to telework achieved twice the output (productivity) of those who were simply being forced to.

However, due to the pandemic restrictions, telework is no longer a voluntary agreement, as to limit the spread of the virus, governments forced employees to work from home in a full-time basis.

Furthermore, teleworking has been a strategy in which companies try to improve employee morale and productivity (Kurland & Bailey, 1999), and a strategy to decrease their utilities and real estate costs (Hill et al., 1998). On the other hand it has been studied has a strategy to the reduction of air pollution and traffic congestion by reducing work-related trips (Mokhtarian et al., 1995). However, in this study we will not consider the environmental impacts of reduced mobility nor the fact that teleworking can be a strategy for organizations to reduce their costs.

1.2 The effects of telework

Despite the exponential growth in the importance of telework as an alternative work method (accentuated sharply by the recent pandemic), there is no single and consistent theory about its impacts. Telework has both positive and negative effects on employees, organizations, and society itself. In this study, we will focus our analysis on the impacts of telework on employees, which can unveil some organizational characteristics.

Previous studies have highlighted several conceptual themes regarding telework impacts. Scheduling autonomy and flexibility, less interruptions, a better work-family life balance and time saving, from not have to commute to/from office every day, often emerge as benefits/advantages of telework (Gajendran & Harrison, 2007). On the other hand feelings of isolation, lack of managerial control and loyalty to the organization are among the factors that

emerge as disadvantages of telework (Bailey & Kurland, 2002; Felstead & Henseke, 2017; Hunton & Harmon, 2004).

For organizations, telework is synonymous of reducing expenses and a vehicle to increase productivity levels (Hill et al., 1998). For individuals, telework is linked to improvements in working conditions that promote job and life satisfaction. Teleworkers have more control and autonomy over their work processes and their production tools. Thus, they will be more satisfied and more motivated (Shamir & Salomon, 1985). Teleworkers also save money and time by not having to commute to and from the office, spending less money on gasoline, clothing, and meals away from home (Dubrin, 1991). There are also fewer interruptions in your home work environment, as well as flexibility in the day's schedule, which can help employees balance their work-family commitments and personal responsibilities (Dubrin, 1991; Zedeck & Mosier, 1990), leading to greater integration between work and family duties (Duxbury et al., 1998; Gajendran & Harrison, 2007; Raghuram & Wiesenfeld, 2004). However, some studies mutually agree it may emphasize and intensify a conflict that comes from the permeability of work and family boundaries, supported by the boundary theory which we will discuss further ahead (Bulger et al., 2007; Gajendran & Harrison, 2007; Igarria & Guimaraes, 1999).

Social isolation is another common point of concern among scholars. It often emerges as an implicit disadvantage related to telecommuting, because employees become almost invisible in the workplace due to the reduced face-to-face interaction, less frequent communication and relationships, weakening interpersonal ties with their co-workers or supervisors and consequently reducing their opportunities for promotions, contributing to the employee's personal job dissatisfaction (Bailey & Kurland, 2002; Dubrin, 1991; Feldman & Gainey, 1997).

Although there is little literature on organizational support and communication, we consider these two domains of telework very important for companies to be able to virtually achieve the desired goals, and therefore, we will deepen these topics.

1.2.1 Flexibility: perceived autonomy and job satisfaction

Studies on this field have long suggested teleworking as a flexible working mode that allows workers to better manage the demands of work and personal duties by increasing flexibility in the realm of work, including tasks and location (Shockley & Allen, 2010). In fact, flexibility is considered a key feature of any work arrangement, as it comprises workers'

personal assumptions about the extent to which they can “structure and control how and when they do their particular job tasks” (Gajendran & Harrison, 2007). In general, teleworkers sense feelings of freedom and discretion in scheduling work since they are partially dismissed from face-to-face supervision (Dubrin, 1991).

There is in fact a common consensus among scholars. They seem to mutually agree on this definition of telework flexibility, which was first put forward by Hackman and Oldham (1976): “The degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out” (Dubrin, 1991; Gajendran & Harrison, 2007). Indeed flexibility in the workplace, tends to intensify independence in scheduling particular tasks and improve control over the means of accomplishing them (Duxbury et al., 1998; Hackman & Oldham, 1976; Raghuram et al., 2001), improving employees’ perceptions of their own autonomy (Hackman & Oldham, 1976).

Additionally, performing tasks and working wherever employees wants, allows for control over the environment (e.g. lighting, ventilation, music, less interruptions) and other ambient factors, that can contribute to increase the feeling of control and perceived autonomy, leading to increased job satisfaction and perceived productivity (Elsbach, 2003).

To support the positive correlation between flexibility, autonomy and job satisfaction, previous studies have been carried out in this field. In early 1974, Herzberg (1974), stated that one of the eight ingredients present in successful work arrangements is having autonomy to schedule one's own work, and therefore, the perception of autonomy and flexibility in scheduling one's own tasks, allows for a greater sense of responsibility to meet the deadlines imposed by the organization. Later, in 1985, another similar study was conducted. Serving as the basis for many job enrichments models, Hackman and Oldham's "Job characteristics model" was used by several authors to conduct their researches. For example, "A Meta-Analysis of the Relation of Job Characteristics to Job Satisfaction" (Loher et al., 1985). Here, the goal was to statistically determine, using meta-analysis procedures, the "real" relationship between job characteristics (e.g., Autonomy) and job satisfaction. The results showed that the average correlation between autonomy and job satisfaction is about .46, concluding that autonomy is associated with job satisfaction.

Thus, we can conclude that by giving the employee flexibility, he will have a higher degree of autonomy, improving his perception of responsibility, leading to higher internal motivation, higher job satisfaction and finally higher productivity (Hackman & Oldham, 1976).

1.2.2 Work-life balance and the boundary theory

Previous studies have often stressed that telework is beneficial due to its characteristic of being a flexible workplace, that helps to balance family and work duties, leading to greater integration between work and family tasks (Duxbury et al., 1998; Gajendran & Harrison, 2007; Raghuram & Wiesenfeld, 2004). This balance is most felt when work is performed at home through home-based telework arrangements (Standen et al., 1999).

However, by bringing work and family together in the same place, controversial consequences may arrive. Working closer to the family can help manage the care of children or the elderly, and can free family care from the rigid schedule in the regular work at the central office. (Bailyn, 1989). But family proximity also plainly invites for work-family conflict (Olson & Primps, 1984; Standen et al., 1999).

In fact, the consequences of telework on the work-family interface has been over the years, a very controversial topic that has raised much debate among scholars (Gajendran & Harrison, 2007). Some scholars argue that flexibility through telecommuting is what employees need to balance work and family duties. Others see telecommuting as a threat to blur the boundaries between work and personal/family life. (Hill et al., 1998).

On the one hand, telework can increase the conflict between work and family roles, since there is no spatial or temporal boundary between them, resulting in increased permeability of the boundary between these two domains, work and family (Standen et al., 1999). On the other hand, as a positive side, the teleworker has more personal freedom and flexibility to structure their schedule as they wish and respond more easily to domestic demands or duties, reducing work-family conflicts (Duxbury et al., 1998; Raghuram et al., 2001). In addition, some studies suggest that it is an important source of job and life satisfaction that enables increased productivity at work (Bailyn, 1989; Olson & Primps, 1984).

To help clarifying what the boundaries between work and family are, it is important to shortly introduce *the Boundary Theory*.

This theory suggests that people have physical, psychological and behavioral boundaries that are created and maintained according to their different roles in life, in this case work roles and domestic roles (Ashforth et al., 2000). The border is seen as a structural phenomenon enforced by the spatial and temporal separation between work and family roles (Standen et al., 1999). Therefore, boundary permeability (within this context) is the degree to which work

management and family roles become a conflict simply because they are in the same place and probably at the same time (Edwards & Rothbard, 2000). The permeability of this boundary may potentially make it more difficult for the teleworker to "disconnect" from work and continue to work after the normal working schedule, increasing the likelihood of conflict (Gajendran & Harrison, 2007; Raghuram & Wiesenfeld, 2004).

Crossing this boundary may happen to individuals who have difficulty separating the time to perform work tasks from the time to perform family duties (Olson-Buchanan & Boswell, 2006). However, previous studies have shown that the high flexibility provided through telework, in some cases, is also capable of erasing the permeability and boundary conflict.

For example, in a study performed by Greenhaus and Beutell (1985) where they examined sources of conflict between the work role and the family role, it was concluded that boundary flexibility can erase the negative impact of boundary permeability and family conflict by allowing employees to schedule their work tasks in the best way to minimize interference with the family role (Greenhaus & Beutell, 1985). Moreover, employees can also introduce greater compartmentalization at home by creating an isolated workplace that disables interruptions from family members and helps to fortify the boundary between work and family (Gajendran & Harrison, 2007). In addition, by not having to waste hours in traffic to move to and from the central office, telework also increases the time resources that can be spent on family activities, leading to conflict reduction (Greenhaus & Beutell, 1985).

As already mentioned, there is a lot debate among scholars on this topic and there is no consensus within this literature on the impact of telework on resolving work-family conflicts (Duxbury et al., 1998).

1.2.3 Productivity

A consistent number of studies have mutually agreed that there are significant changes in work productivity caused by telework (Dubrin, 1991; Kurland & Bailey, 1999; McCloskey & Igbaria, 2003). Productivity improvement is possibly the most beneficial and positive outcome of teleworking both for employees and organizations (Bailey & Kurland, 2002; Baruch, 2001; Gajendran & Harrison, 2007).

One of the justifications for the increased productivity while teleworking is that by working in a space where the employee can have control over the environment, plus fewer interruptions during work, task performance will be more effective (Bailey & Kurland, 2002). Another explanation is often the time saved by not having to commute to work, which can lead to the increasing of hours worked and therefore teleworker may perceive it as an improvement on productivity (Apgar, 1998). But this explanation can be tricky. If productivity is measured by the inputs/outputs ratio, an increase in the amount of work performed during the extended working hours may not necessarily mean that productivity as increased (Shin et al., 2000).

In addition, autonomy and flexibility in work scheduling, as we have seen, also improve performance (Shockley & Allen, 2010), since high amounts of autonomy will improve responsibility, leading to higher internal motivation, higher job satisfaction and therefore higher productivity (Hackman & Oldham, 1976). For example, in a study conducted by Dubrin (1991) he compared part-time workers vs full-time office-based employees and found that productivity increased by an average of 30% when projects were moved from the company office to the workers' homes. In addition, Bloom et al. (2015) showed the positive causal impact of telework on workers productivity, a hypothesis that was tested and verified for workers at a call center in China in 2015. A more recent study within the pandemic context, compiling the responses of 1500 managers through a survey, showed that managers were more likely to have short-term productivity gains than losses due to telecommuting during the first shutdown, and that 61.9% of them stated that their intention was to rely more on remote work in the future (Ozimek, 2020).

Besides the positive effects highlighted by a significant number of literatures in this field, few more recent studies show that the pandemic may have negatively impacted productivity. Bloom who has previously highlighted important gains from telework (under normal circumstances), as seen in the last paragraph, in a recent interview during the pandemic said: “We are home working alongside our kids, in unsuitable spaces, with no choice and no in-office days. This will create a productivity disaster for firms” (as cited in Gorlick, 2020). Therefore, the Research Institute of Economy of Japan, chaired by Masayuki Morikawa, have conducted a survey during the lockdown, where one of the results was the self-reported work productivity decrease (Morikawa, 2020), confirming the negative effects of the pandemic on telework. Older literature seems to agree that teleworking under normal scenarios is indeed a more productive work arrangement, but is it in a pandemic scenario? Studies on teleworking during the pandemic are quite limited to answer the previous question, this study aims to fill this gap.

1.2.4 Social isolation

Spending the majority of the work week out of the office, implies less face-to-face interactions with supervisors and coworkers, reflecting much less opportunities for informal interactions and relationship building (Mackie-Lewis, 1999). Employees` may feel alienated from the company and deprived of the social in-office interactions (Dubrin, 1991), which can lead to feelings of exclusion and isolation and therefore, job dissatisfaction (Gajendran & Harrison, 2007). Teleworkers fear isolation and information impoverishment (Tomaskovic-devey & Risman, 1993).

By being out of sight from managers supervision, due to the lack of face-to-face interaction, employees may also feel that they are “out of mind” for promotion opportunities and other organizational rewards (Kurland & Cooper, 2002). By defining promotion as being promoted to team leader or promoted to a more advanced and well-paid role, a study was conducted on a Chinese travel agency and its call center employees who were in telework. One of the key findings of this study was that the home-based teleworkers are "out of sight, out of mind" and therefore, managers and supervisors were less likely to promote them, since they could not evaluate closely the employees' performance (Bloom et al., 2015).

The feeling of isolation can have varying degrees of intensity. The degree to which teleworkers experience social isolation may be related to whether they work from home, where they may feel more isolated, or in a coworking center or a library, for example, where the sense of isolation is small (Kurland & Cooper, 2002). In addition, the frequency of telecommuting is also important in measuring feelings of isolation: people who telecommute for longer periods of time feel more isolated than people who telecommute two or three times a week, for example (Mokhtarian et al., 1998). Thus, Kurland and cooper (2002) noted that some employees decreased their telework intensity when they felt that their relationship with their manager was at risk or that they were the target of gossip and discontent from colleagues.

In fact, the feeling of impoverishment in the relationship between the teleworker and his manager seems to be real and detrimental to the worker's career. A former study conducted by Christenson (1988, as cited in Kurland & Cooper, 2002), concluded that managers are less likely to promote teleworkers than non-teleworkers, meaning that managers may isolate teleworkers professional. Furthermore, in a case study of Xerox's corporate telework program, Bailyn (1988) concludes that teleworkers were more worried about isolation than non-

teleworkers and that teleworkers were more concerned about intrinsic job returns, such as status, salary, and promotions.

We may conclude that managers, non-teleworkers and teleworkers realize that teleworkers are more isolated, and that this social isolation can lead to the lack of promotion opportunities and job dissatisfaction. Social isolation is a common preoccupation point within the literature on telework.

1.2.5 Organizational support

To achieve the desirable positive organizational and individual outcomes of telework, good and reliable organizational support is crucial, not only technical support but also and especially support for teleworker well-being (Bentley et al., 2016). Kowalski and Swanson (2005) have found that management support is indeed a crucial success factor for telework effectiveness.

As seen in the last section on social Isolation, less frequent interaction between teleworkers and their co-workers due to remote working arrangements is predicted to have a negative impact on teleworkers' job satisfaction. Given these concerns, the literature argues that organizational support is of crucial importance in increasing teleworkers' satisfaction and well-being, helping to reduce the possible loss of job satisfaction and well-being, due to lower levels of social interaction associated with telework (Bentley et al., 2016).

The term organizational support is embedded in two concepts: (1) Perceived organizational support, which is the degree to which employees believe that their organization values their contributions and cares about their well-being (Eisenberger et al., 1986) and (2) Perceived social support, which refers to the degree to which employees perceive that they are supported by their co-workers and manager (Bentley et al., 2016).

Regarding technical support, little research has been conducted. The little existing literature suggests that technical support is indispensable to ensure an efficient coordination with headquarters and co-workers and, therefore, this form of support is essential to achieve positive telework results (Bosua et al., 2013).

There is an obvious lack of literature on this domain of telework, which we hope to address somewhat, and we hope that more scholars will address this issue. From our side, we believe

that organizational support is indeed crucial for an effective telework and to substantially fight isolation.

1.2.6 Organizational Communication

Although a large number of researchers have studied telecommuting arrangements from an advantages and disadvantages perspective (Bailey & Kurland, 2002; Fricker & Schonlau, 2002; Gajendran & Harrison, 2007; Kurland & Bailey, 1999), literature on the impact of telecommuting on the organizational communication is lacking. Here we attempt to address the lack of information.

Most of the work done in organizations is accomplished through communication, where people exchange information and coordinate work tasks (Fritz et al., 1997). Communication with managers and co-workers plays a key role in the efficient performance of the organization (Perrow, 1967). Communication has traditionally been carried out by the physical proximity of employees who share the same office and have participated in meetings, talked in the elevator, had lunch together, and essentially interacted with each other, since it is through regular communication that individuals develop shared meaning and common understanding of activities to be performed (Fritz et al., 1997). However, teleworking does not allow this kind of physical interaction with co-workers.

Communication within a telework experience is indeed one of the most prominent concerns and key challenges for managers and employees (Cascio, 1999; Townsend et al., 1998) and a major challenge to the effectiveness of telework (Akkirman & Harris, 2005). Previous studies on remote communication systems suggest that effective communication is more crucial in teleworking than in the traditional office, since telework changes the "*familiar pattern, content, and context of organizational communication*" (Akkirman & Harris, 2005; Townsend et al., 1998).

With this said, it is important to note that there is little consensus among previous scholars regarding how teleworking arrangements impact either the frequency or quality of organizational communication.

On one side, previous studies that have postulated that telework makes it more difficult for employees to communicate with each other and with their managers, and that reduced physical

social interaction can increase feelings of social isolation (Ramsower, 1985; Yap & Tng, 1990; Duxbury & Neufeld, 1999). For example, in California a few decades ago, a company embraced telework, but the communication breakdown between employees and management was so negative and critical that teleworkers ended up filing a complaint accusing the company of fraud (Duxbury & Neufeld, 1999). Therefore, the communication breakdown between employees and employers is a possible stated disadvantage of the transition to telework.

On the other hand, some authors have supported that telework can have a positive effect on organizational communication. By comparing the levels of communication satisfaction between teleworkers and traditional workplace employees, Ali Akkirman and Drew Harris (2005) conducted a study where they found that teleworkers were happier with organization communication than traditional office workers. Similarly, other study by comparing the individual levels of satisfaction in this domain between teleworkers and in-office workers, it found that telework does not negatively impact office communication, contrarily teleworkers were more satisfied with overall office communication than were conventional office worker (Fritz et al., 1997).

However, an important factor in the organization's virtual communication effectiveness is technological innovation.

Pool (1990) stated that the technological solutions used when working at home may allow teleworkers to make more electronic contacts since contacting someone it is just one click away, and this allows to communicate with more individuals than would be possible otherwise. This statement was made in the early 1990s, where there was limited technology, and the use of communication technologies was mainly done at home. But we are now in an increasingly digital world, where digital communication platforms are constantly becoming more advanced and sophisticated.

Telework is particularly dependent on communication-based technologies, also called collaborative technologies (Bélanger & Allport, 2008).

These technologies have enabled employees and businesses to interact with each other, exchange data, information, ideas, and work on the same projects at the same time, bringing employees together, working in virtual teams to accomplish work tasks more effectively (Samarah, 2006). These types of technologies are conceived to facilitate the work of virtual groups through communication, cooperation, coordination and problem solving, improving the qualities and interactions of the group (Bélanger & Allport, 2008). Furthermore, collaborative

technology has the capability to increase productivity (if properly implemented) and change the way workers interact socially (Abegg et al., 2012). Mobile phone, emailing, video conferencing and instant messaging are some examples of this technology (Abegg et al., 2012).

The effective use of sophisticated new technologies has become exceedingly important for successful and efficient job performance, not only but especially for teleworkers who experience the huge increase in the use of new technologies and the decrease in face-to-face communications and interactions (Smith et al., 2018).

To be effective, telework must be based on efficient communication and cooperation between managers and teleworkers. Kurland and Cooper (2002), conclude that organizations by not providing adequate training to their teleworkers and managers for telework, end up empowering misperceptions and miscommunication.

Effective cooperation and communication become even more important when telework is mandatory and occurs on a full-time basis (ILO, 2020a, 2020b).

The reported literature showed that telework involves positive and negative perceptions. We can assume that this form of mandatory telework affirmed by the pandemic, might be different from the (mostly) partial and flexible telework prior to the pandemic restrictions. For example, previous research states that one of the benefits of teleworking at home before the pandemic is that the home is a peaceful working environment that translates into fewer interruptions, fewer distractions, and more productivity (Dubrin, 1991; Zedeck & Mosier, 1990), but does this apply to working at home during the covid-19 pandemic, where most likely the entire household is closed at home simultaneously? Our research suggests that the perceptions vary among usual teleworkers and newcomers.

Chapter 2 – Methodology

In this chapter, the methodology followed to pursue the answers to the core objectives identified on the introduction of this thesis is presented. The data collection, target population, and the characterization and structure of the online survey will also be outlined.

In choosing the right method for this study, the first consideration was to make sure that the method would be appropriate to provide the right answers to the study objectives. This study methodology is characterized by being a quantitative research. In accordance with Creswell (2014), quantitative research involves collecting data so that information can be quantified and submitted to statistical analysis to support or refute "alternative knowledge claims".

The results of quantitative research can be predictive, explanatory, and confirmatory (Williams, 2007). Therefore, the quantitative research technique chosen was online survey research.

In the survey research technique, the researcher tends to stop phenomena in the present moment, in this case the covid-19 pandemic, which we need a quick "pool of straw" on this subject to better understand the phenomenon (Mooi & Sarstedt, 2011). This method is used for sampling data from respondents that are representative of a population (Williams, 2007). We based our study on the web survey technique by administering an online survey, as it has several benefits with regard to data collection, compared to other quantitative research methods. Web surveys allow for higher response rates, faster and at less or no cost (Fricker & Schonlau, 2002).

In this study, sampling was not hampered by the most common disadvantage of Internet surveys: the inability to reach a challenging population by excluding individuals who do not have Internet access, since teleworkers, by definition, have Internet access (Birks et al., 2017). Broader trends in technology adoption, including the use of the Internet everywhere and on any smart device, have reshaped the way online surveys are designed and conducted in a more engaging way for participants. Online surveys can be done on any type of electronic devices with internet connection, anywhere at any time (Birks et al., 2017).

2.1 Data collection

To better address the right answers to our research objectives, primary data was collected (Birks et al., 2017). Data was collected through an online survey created on the Google forms platform. The survey was published and shared on online social networks such as LinkedIn, Facebook, WhatsApp and Instagram.

Data collection took place from 27/03/2021 to 07/05/2021 and was available for 41 days. The survey was built in Portuguese, since the target population is mostly Portuguese, and therefore it is more appealing and easier for the population to respond to it. After being collected, the data was transferred to Microsoft Excel where it was organized and coded. Afterwards the coded data was sent to *IBM SPSS Statistical Program for Social Sciences v.27*, where the data analysis was processed.

2.2 Target population

During the conceptualization process of this study, after establishing the study objectives, the definition of the target population was clearly established.

In descriptive studies, it is normal to define a study population and then make observations about a sample drawn from it. Any conjectures from a sample refer only to the defined population from which the sample was properly selected. We can call it the target population (Banerjee & Chaudhury, 2010). Considering this, the target population of this study is individuals between the ages of 18 and 75 in the labor market who have already had some telework experience. By building the survey in Portuguese, we may have also excluded non-Portuguese speakers. There was no process of selecting individuals, where each individual in the population had an equal probability of responding (Creswell, 2014).

To meet the target population, screening questions were made and are presented below.

2.2.1 Screening questions

The screening questions are necessary so that we can focus on the real purpose of this study, where the research objectives must be aligned with the theme of the study. Thus, of the

total 190 respondents, 34 did not pass the screening questions, representing 17.9% of the total responses, therefore excluded.

The first screening question presented was related to the respondent's industry affiliation in which respondents perform their professional activities, where students were promptly excluded. Therefore, 16 respondents who were still students were excluded, representing 8.42% of the total responses.

The second screening question presented was related to the respondents' personal telework experience, where we tracked respondents who never had any telecommuting experience. Here we excluded 18 respondents who indicated that they had never had any telework experience and are consequently irrelevant to this study, representing 9.48% of the responses.

2.3 Online survey

The online survey designed to develop this study and corroborate previously presented research objectives, was composed mainly of closed ended questions, where respondents can indicate an appropriate response within a specific set of categories (Mooi & Sarstedt, 2011).

Therefore, our online survey consists mainly of two categories of answers (such as “Yes” or “No”), multiple categories (such as, "Completely unimportant", "Unimportant", "Neutral", "Important", "Extremely important")- which allows for more nuances (Mooi & Sarstedt, 2011), multiple-choice questions and fixed-response alternative questions. This set of questions asking the participant to select from a predetermined set of answers, allows the data obtained to be consistent and precise, since the answers are limited to the stated alternatives (Birks et al., 2017). These types of response scales in which all categories are named, and respondents indicate the degree to which they agree are called *Likert scales*. In order not to confuse respondents about the differences in wording between the points of the scale, we mainly used a 5-point response scale, which is the typical type of scale among academics (Mooi & Sarstedt, 2011).

In addition, it was made sure that the scales used were balanced. Balanced scales have an equal number of positive and negative scale categories (Mooi & Sarstedt, 2011). For example, on a 5-point Likert scale, there are two negative categories (e.g., "Not at all satisfied" and

"dissatisfied"), a neutral category and two positive categories (e.g. "satisfied" and "Very satisfied").

The utilization of these types of scales and closed questions facilitates data collection, coding and, subsequently, analysis of the obtained data (Mooi & Sarstedt, 2011).

The online survey was composed mainly of questions focused on variables such as *Work-Life Balance*, *Productivity*, *Social Isolation*, *Organizational Communication*, *Flexibility* and *Company support* for remote workers, which will be analyzed in more detail.

The survey aims to measure the satisfaction levels of teleworkers during the covid-19 pandemic, within this set of variables, that reflect the effects and repercussions of telework which previous literature supports. *Personal telework experience* and *Intention to continue in Telework* are also crucial variables towards this study objectives.

To be consistent with the objectives and to give an appropriate structure to our online survey, it was built on 2 main pillars. First, the survey was built guided by previous studies that used the same research technique. The second essential pillar was a very interesting survey found online, with questions essential to this study. This survey was developed by the Organization for Economic Co-operation and Development, which allowed the use and adaptation of the survey for anyone and for any purpose (OECD, 2020).

Personal privacy through the anonymity of the response was reinforced at the beginning of the survey. It was made sure that every question was clear and the survey the simplest as possible, to be easy, quick, and not exhaustive for respondents. Questions were organized by section in a specific order, making our analysis easier and more organized.

The survey is presented in annex A.

2.3.1 Survey structure

This chapter highlights the most important sections of the survey for the objectives and their analysis.

1. Screening questions: we start the survey by ask respondents to “*Indicate what sector you work in*”. If respondents choose the option “*student*”, they would be thanked for their

participation and the survey would be submitted. If respondents choose any other option, they will proceed to the next screen question “*During the first year of pandemic, how many days/months did you work remotely?*”. If the respondents answer “*0 days, I have never had any teleworking experience*” they would go automatically to the fifth section “*Questions for who have not teleworked*” to better understand why they did not telework. If the answer was any other, they would proceed to the next section.

2. Personal telework experience and different types of teleworkers: In the second section of the survey 2 important parts are described: firstly, respondents made their own personal assessment of their teleworking experience: “*How would you describe your personal teleworking experience?*”, using a *Likert scale* from 1 to 5 (1- “*very positive*”; 5- “*very negative*”). Additionally, an important question was made in this section: “*Did Telework appeared during the pandemic or have you teleworked before?*”. Here two different *Telework moments* have been defined. Telework before the covid-19 crisis, and during the covid-19 crisis where it was defined who were the: *newcomers* and the *usual teleworkers*, respectively. Thus, 120 respondents respond that it came with the pandemic (120 newcomers), while 36 respondents already had an experience of teleworking before the pandemic constraints (36 usual teleworkers). Secondly, we delve into a set of questions crucial for the purpose of this study, related to the effects of telework on employees' personal and professional lives. Here we aim to understand which telework effects respondents place the most importance on and are most satisfied with. To do this, we used a 5 *Likert scale* (“*Completely unimportant*”, “*Unimportant*”, “*Neutral*”, “*Important*”, “*Extremely important*” and “*Nothing satisfied*”, “*Dissatisfied*”, “*Neutral*”, “*Satisfied*”, “*Very satisfied*”).

3. Future telework intentions: In the third section of our survey “*Your view on teleworking in a post-covid-19 future*”. The aim was to find out whether if teleworkers intend to continue teleworking after the pandemic or not. If so, we asked the respondents what the ideal weekly balance would be in their opinion, between working in the office and at home.

4. Not teleworked: To better understand why individuals did not telework the fourth section is namely “*Questions for who have not teleworked*”. Most of the respondents answered that their work tasks could not be done virtually.

5. Demographics: The final section of the questionnaire focuses on demographic variables such as: gender, age, educational level, industry affiliation and householding size.

Chapter 3 - Data analysis

The first step in our data analysis before moving on to the "core" of the analysis, was to briefly look at the demographic profile of the respondents.

The second step was to describe the data set in its measures of central tendency and measures of variability or dispersion. Measures of central tendency include the mean, median, and mode, while measures of variability include standard deviation, variance, minimum and maximum variables, kurtosis, and skewness (Hayes, 2021).

The final and most important step on our data analysis was answering to our research objectives by showing the results of the analysis. Here statistical tests such as T-Student independent, T-student One sample, Chi-square, and the alternative non-parametric Wilcoxon Mann-Whitney were performed, with the purpose of testing the objectives proposed in this study.

3.1 Descriptive analysis

3.1.1 Socio-demographic variables

This section approaches the descriptive analysis of the socio demographic variables collected from the survey. Here we make a brief analysis of variables such as *gender*, *age*, *household size*, *educational level* and *Industry affiliation*.

Table 1 reports the socio-demographic distribution among the respondents.

- This study had 156 valid responses. The majority of the respondents are women, representing 57.7% and consequently, men represent 42.3% of the respondents. There are no significant discrepancies between genders in our sample.
- The age of the respondents ranges from 18 to 75 years old with the most common ages between 18 and 35 years old, representing 63.5% of the sample. In addition, 26.9% belong to the 36-55 age group and 9.6% belong to the 56-75 age group. We can note that most of the sample belongs to a young age group.

Table 1 – Descriptive statistics.

		%	N
Gender	Female (yes=1)	57,7	90
Age	18-35	63,5	99
	36-55	26,9	42
	56-75	9,6	15
Household Size	0	3,8	6
	1	32,7	51
	2	34	53
	3	14,7	23
	4	12,8	20
	>4	1,9	3
Educational Level	High School	7,1	11
	Bachelor´s Degree	54,5	85
	Master´s Degree	37,8	59
	PhD Degree	0,6	1
Industry affiliation	Public Administration	1,9	3
	Administration, Business and Services	41	64
	Banking and Insurance	10,9	17
	Trade and Distribution	5,8	9
	Civil construction, Public works and Real estate	1,9	3
	Education and Training	5,8	9
	Hotel and Tourism	1,3	2
	Health, Biotechnology and Pharmaceuticals	6,4	10
	Information technologies	9	14
	Telecommunications	2,6	4
	Marketing and Design	2,6	4
	Management sciences	3,8	6
	Energy	2,6	4
	Other	4,5	7
Total		100	156

- Regarding household size, a large percentage of our sample lives in a household with no more than two people, 70.5%.
- In relation to the educational level, 92.9% of our sample have a university degree where 54.5% has a bachelor's degree, 37.8% held a master's degree and 0.6% a PhD degree. Only 7,1% of the respondents have studied until high school. The vast majority of the individuals in our sample have a high level of education
- As for industry affiliation, industries like Hotel and Tourism, Public administration and Civil construction, Public administration and Real estate, are the sectors less likely to use telework since its job characteristics and tasks may not allow for teleworking. In other hand, Administration, Business and Services is the industry where we have more respondents who teleworked, with 41%.

Descriptive statistics allow us to verify that our sample is characterized for being young, well educated and equal between genders.

3.1.2 Empirical evidence on satisfaction: an overview

Table 2 reports the descriptive data (minimum, maximum, mean, standard deviation, skewness, and kurtosis) of the different evaluated variables under study.

Table 2 - *Descriptive analysis of the variables under study*

Variables N=156	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>DP</i>	<i>Asymmetry</i>	<i>Kurtosis</i>
Work-life Balance	1	5	3.52	1.11	-.42	-.57
Productivity	1	5	3.73	1.04	-.54	-.32
Social Isolation	1	5	2.40	1.10	.47	-.41
Communication with my Manager	1	5	3.49	1.13	-.42	-.72
Communication with the Team	1	5	3.65	1.02	-.46	-.32
Flexibility	1	5	3.85	1.23	-.93	-.12
Company Support	1	5	3.72	.99	-.60	.04
Personal Telework Experience	1	5	3.99	.98	-.107	.43

Note: M - Mean; SD - Standard Deviation

Through the data in Table 2 it can be seen that the absolute values of skewness and flatness indicated that there was no excessive deviation from the Normal distribution in any variable (Marôco, 2018).

Additionally, by looking into the remaining data in Table 2, it is possible to conclude that teleworkers reported, on average, slightly high levels of satisfaction in almost all the domains assessed: *Flexibility*, *Productivity*, *Company Support*, *Communication with the Team*, *Work-life Balance* and *Communication with my Manager*. It can also be concluded that from all the domains evaluated, only the level of satisfaction in the *Social Isolation* domain teleworkers, on average, showed slightly reduced levels.

Finally, it can also be concluded that teleworkers, on average, reported a high *Personal Telework Experience*.

3.2 Empirical evidence: effects of telework

This chapter will report the results of all the analyses performed with the purpose of testing the objectives proposed in this study.

The results obtained from the parametric *T-Student One Sample* tests will be presented (Table 3), in order to analyze the 1st objective proposed, more specifically, to analyze in detail the levels of satisfaction of teleworkers in several domains (*Work-life balance*; *Productivity*; *Social Isolation*; *Communication with the manager*; *Communication with the team*; *Flexibility* and, *Company support*) in order to suggest possible advantages or disadvantages significantly resulting from telework.

To examine the 2nd objective under study, more specifically, to study possible significant differences in the levels of each of the domains, previously mentioned, in the different *Telework Moment: Before Pandemic Restrictions*, where those who have teleworked before the pandemic were labeled *usual teleworkers* and *In Pandemic Restrictions*, for those who only embraced teleworking due to the pandemic that were labeled *newcomers*.

The results (Table 4) coming from the parametric *T-Student Independent Samples* tests will be shown, in the case where their assumptions were duly validated. In the opposite case, the results coming from the alternative non-parametric *Wilcoxon Mann-Whitney* tests will be presented.

Finally, the 3rd and final objective under study, more specifically, to analyze the average levels reported by teleworkers of *Personal Telework Experience* (Figure 1) and *Intention to continue in Telework* (Figure 2) after the pandemic, as well as to test possible significant differences in the level of *Personal Telework Experience* both for *usual teleworkers* and *newcomers*. The results of the parametric *T-Student Independent Samples* test will be reported. Similarly, to test whether the *Intention to continue in Telework* depends significantly on the *Telework Moment (Before Pandemic Restrictions vs. In Pandemic Restrictions)* in which teleworkers began this method of work, also intended in this last objective under study, a *Chi-square* test was performed. In addition, to complement this last objective of the study, it is interesting also to examine what teleworkers consider to be the *Ideal weekly balance* (Figure 3) between work remotely and at the office, for teleworkers who have the *Intention to continue in Telework*, through a brief descriptive analysis.

3.2.1 Advantages or Disadvantages of telework perceived by teleworkers

To analyze if the level of satisfaction of each domain evaluated to the teleworkers was statistically high or low, in this case, higher or lower than the midpoint (3) of the response scale, we used the *T-Student One Sample* tests (Table 3) for each domain evaluated.

The results presented in Table 3 allow us to verify that all the domains evaluated presented significantly high levels of perceived satisfaction ($p < .001$) by the teleworkers.

It can be concluded that *Flexibility*, followed by *Productivity* and *Company Support*, of all the domains evaluated, were those which presented the highest levels of satisfaction perceived by the teleworkers. On the contrary, *Social Isolation* showed statistically low levels of satisfaction perceived, i.e., the sampled teleworkers seem to be dissatisfied with social isolation associated with remote work.

These results allow us to conclude that teleworkers considered only *Social Isolation* as a significant disadvantage resulting from telework, of all the domains evaluated in this study. Similarly, the results allow us to conclude that teleworkers considered almost all the domains evaluated in the study, from *Work-life Balance*, *Communication with the Manager* and *Communication with the Team* as significant advantages resulting from telework, but they mainly considered *Flexibility*, *Productivity* and *Company Support* as the most significant advantages resulting from telework.

Table 3 - Levels of satisfaction perceived by teleworkers of their Work-life balance, Productivity, Social Isolation, Communication with the manager, Communication with the team, Flexibility and Company support.

	<i>M</i>	<i>DP</i>
Work-life Balance	3.52	1.11
<i>Test statistic; p</i>	$t = 5.84; p < 0.001$	
Productivity	3.73	1.04
<i>Test statistic; p</i>	$t = 8.75; p < 0.001$	
Social Isolation	2.40	1.10
<i>Test statistic; p</i>	$t = -6.77; p < 0.001$	
Communication with my Manager	3.49	1.13
<i>Test statistic; p</i>	$t = 5.44; p < 0.001$	
Communication with the Team	3.65	1.02
<i>Test statistic; p</i>	$t = 7.92; p < 0.001$	
Flexibility	3.85	1.23
<i>Test statistic; p</i>	$t = 8.60; p < 0.001$	
Company support	3.72	.99
<i>Test statistic; p</i>	$t = 9.16; p < 0.001$	

Notes: t = T-Student One Sample; p = level of statistical significance

3.2.2 The impact of Telework Moment on the perception of different advantages or disadvantages of telework – usual teleworkers vs newcomers

In order to analyze in detail whether the level of satisfaction of each domain assessed by teleworkers differs significantly between the different *Telework Moments* (*Before Pandemic Restrictions* vs. *In pandemic restrictions*) at which participants started teleworking, *Independent T-Student* tests were used for all domains assessed, except *Productivity* and *Flexibility*, where the assumption of homogeneity of variances failed and, therefore, the alternative non-parametric *Wilcoxon Mann-Whitney* test was performed for these two domains. The results obtained from these various analyses are presented in Table 4.

Table 4- Perception of Advantages and Disadvantages of Telework by each Telework Moment (Before Pandemic Restrictions vs In Pandemic Restrictions)

		Telework Moment	
		Before PR (Usual teleworkers)	In PR (Newcomers)
Work-life Balance	M	3.89	3.41
	DP	1.01	1.12
<i>Test statistic; p</i>		$t = 2.31; p < 0.050$	
Social Isolation	M	2.58	2.35
	DP	1.05	1.11
<i>Test statistic; p</i>		$t = 1.12; p > 0.050$	
Productivity	M	3.83	3.70
	DP	.85	1.10
<i>Test statistic; p</i>		$W = 2054; p > 0.050$	
Communication with my Manager	M	3.78	3.41
	DP	1.05	1.15
<i>Test statistic; p</i>		$t = 1.73; p < 0.100$	
Communication with the Team	M	3.72	3.63
	DP	1	1.03
<i>Test statistic; p</i>		$t = .500; p > 0.050$	
Flexibility	M	4	3.80
	DP	.93	1.31
<i>Test statistic; p</i>		$W = 2115; p > 0.050$	
Company Support	M	3.78	3.71
	DP	.90	1.02
<i>Test statistic; p</i>		$t = .37; p > 0.050$	

Notes: PR = Pandemic Restrictions; t = independent-samples T-Student; W = Wilcoxon Mann-Whitney; p = level of statistical significance

Through the results of Table 4 it is possible to state that there are statistically significant differences at the level of *Work-life Balance* between the different 2 types of teleworkers, indicating that *usual teleworkers* perceive *Work-life Balance* as more advantageous compared to the *newcomers*.

Similarly, through the results in Table 4, it is possible to verify the existence of marginally significant differences at the *Communication with my Manager* level, between *usual teleworkers* and *newcomers*, indicating that teleworkers who started teleworking *Before Pandemic Restrictions* perceive *Communication with my Manager* as something more advantageous of this work arrangement when compared to *newcomers* who started teleworking *In Pandemic Restrictions*.

Finally, the results of Table 4 also allow us to conclude that there are no statistically significant differences in the remaining domains assessed to teleworkers between the different *Telework Moments*.

These results indicate that the perceived advantages and disadvantages of teleworking do not vary significantly from the beginning of this work method (*Before Pandemic Restrictions* vs. *In Pandemic Restrictions*) in almost all domains assessed, except for *Work-life Balance* and *Communication with my manager*, which are perceived as being even more advantageous by *usual teleworkers* than by *newcomers*.

3.2.3 Personal Telework Experience

In order to verify whether the levels of *Personal Telework Experience* are statistically high or low, i.e., higher or lower than the midpoint (3) of the response scale, the parametric *T-Student One Sample* test was used for this domain. These results are reported below, with the descriptive graphical representation (Figure 1) of the *Personal Telework Experience* of the teleworkers under study. Finally, it was tested whether the *Personal Telework Experience* would show significant differences when comparing *newcomers* and *usual teleworkers* in the different *Telework Moments* (*Before Pandemic Restrictions* vs. *In Pandemic Restrictions*), using the *T-Student Independent Samples* test.

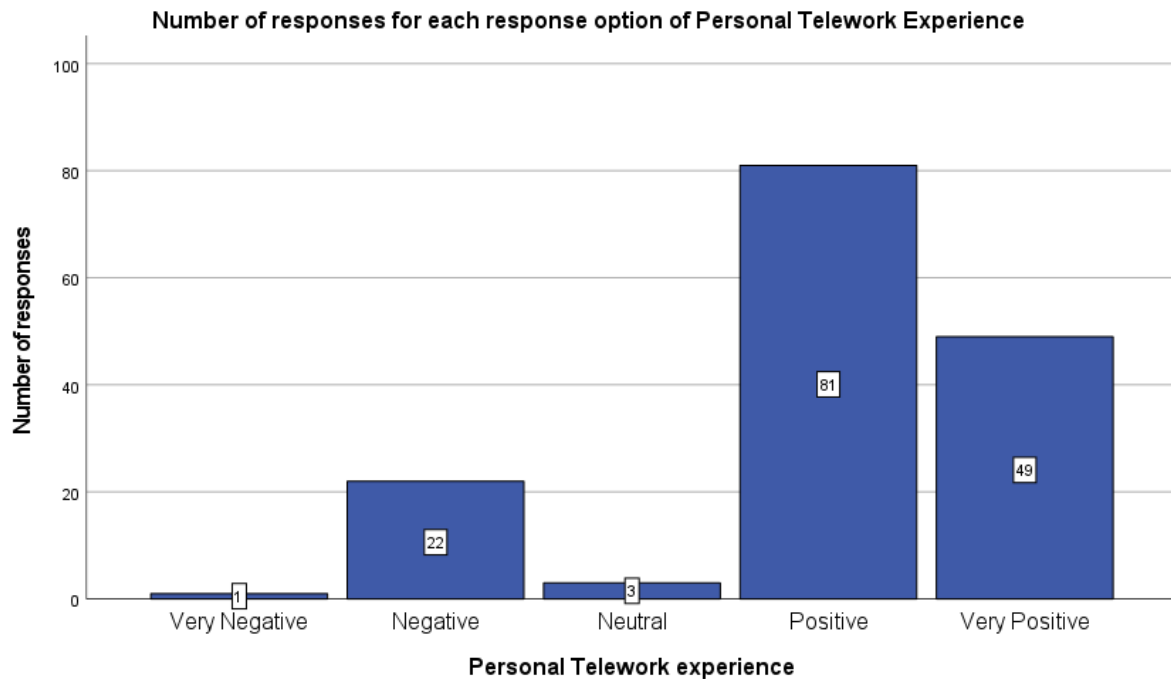


Figure 1 - Number of responses for each response option in Personal Telework Experience

Both the results of the *One Sample T-Student* analysis for *Personal Telework Experience* and the descriptive data in Figure 1, indicate that teleworkers felt they had significantly, a positive *Personal Telework Experience*.

Additionally, the results coming from the *T-Student Independent Samples* test that analyzed possible significant differences in the level of *Personal Telework Experience* between the 2 types of teleworkers, revealed that there was no statistical significance, indicating that the *Personal Telework Experience* was positive, at an identical level, in both *Telework Moments*.

3.2.4 Intentions to continue teleworking in the future

Finally, in order to analyze the *Intention to continue in Telework* by teleworkers (Figure 2) and if there could possibly be a dependency between *Telework Moments (Before Pandemic Restrictions vs. In Pandemic Restrictions)* and this reported intention, a *Chi-square* test was used.

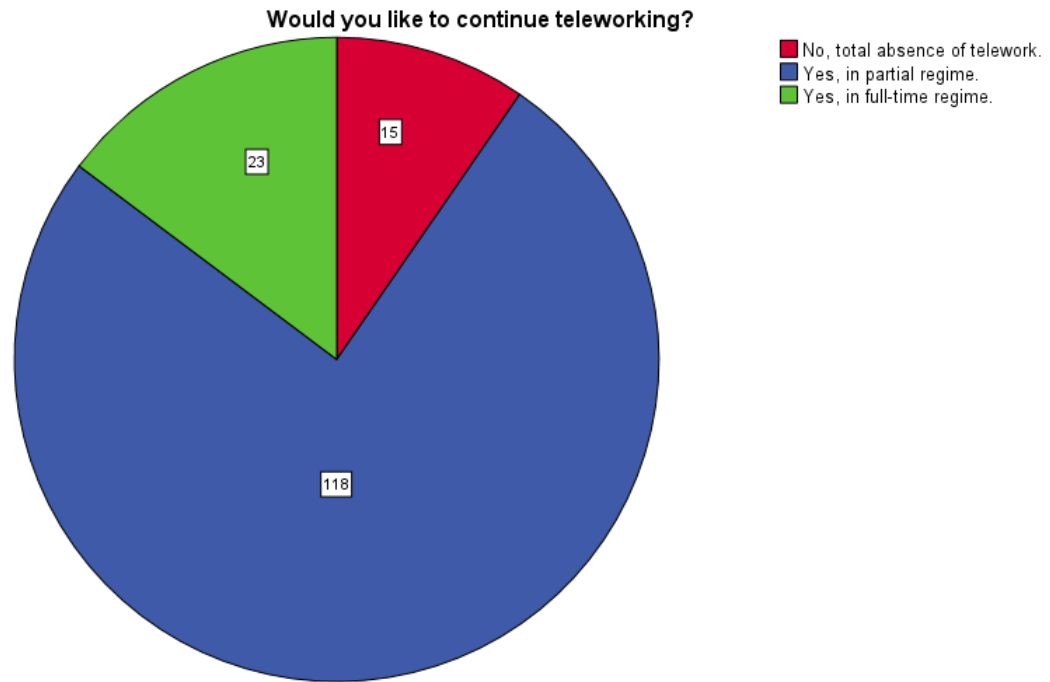


Figure 2 - Number of responses for each response option in *Intention to continue in Telework*

Through the descriptive results in Figure 2, it is possible to verify that only 15 teleworkers (9.6%) have no *Intention to continue in Telework in the Future*. In turn, the results also allow us to admit that most teleworkers, more specifically, 118 teleworkers (75.6%) have *Intention to continue in Telework in the Future* but in a *Partial Regime*, while only 23 (14.7%) teleworkers intend to *continue in Full-time Regime*. In addition, only 15 (9.7%) of the respondents' don't want this work arrangement at all, in the future.

The results concerning the *Chi-Square* test indicated the existence of an independence between *Telework Moments* and *Intention to continue in Telework*, $X^2(2)=2.650$, $p=.266$, suggesting that the *Intention to continue in Telework* does not itself depend on the *Telework Moments* in which the teleworker started teleworking. These results allow us to admit that most teleworkers (91.4%) have the *Intention to continue in Telework in the Future* and that the *Telework Moment* in which they started this working method does not influence this intention at all.

Additionally, through the descriptive results showed in Figure 3 presented below, it is possible to verify that from the 118 teleworkers who have *Intention to continue in Telework in the Future*, 73 (61.86%) teleworkers, consider the *ideal weekly balance* to be 2 days a week of telework and the rest in the office, and 30 teleworkers (25%) consider the *ideal weekly balance* to be 3 days a week of telework and 2 in the office. These results allow us to admit that after the pandemic ends, employees want a hybrid work regime.

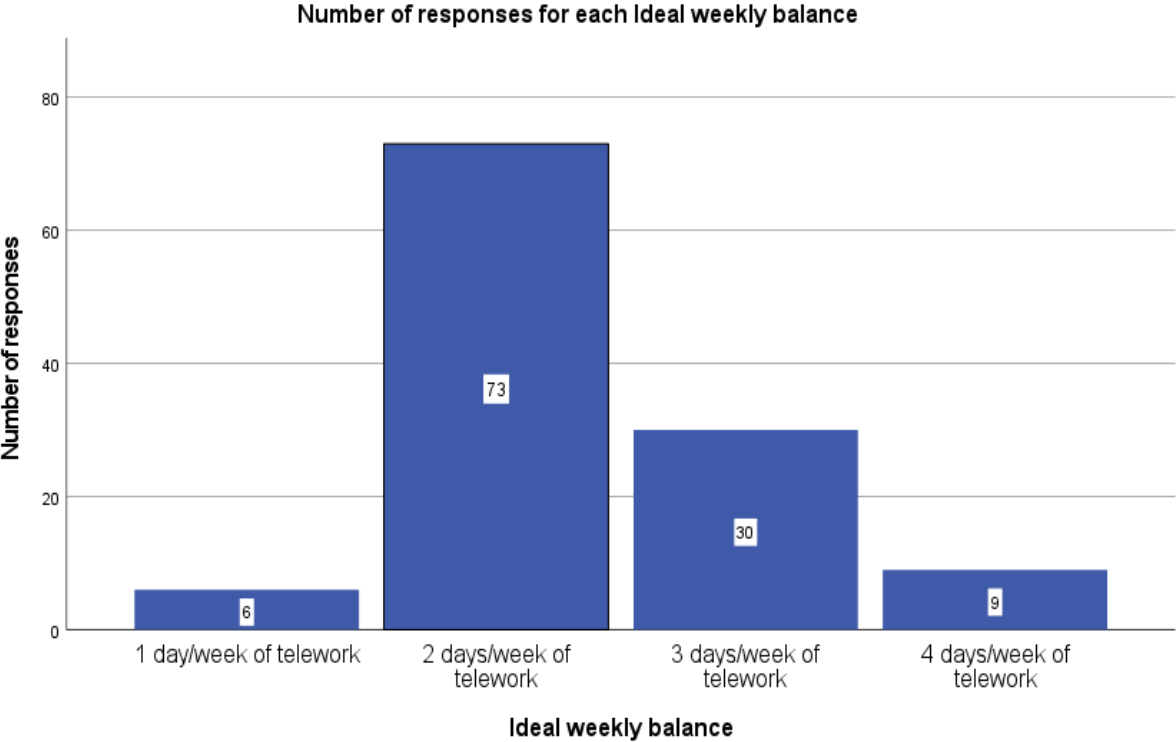


Figure 3 - Number of responses for each Ideal weekly balance

Chapter 4 – Discussion of the findings

First, it must be said that the results of this study are all relevant, as there is a clear lack of knowledge when it comes to teleworking during the covid-19 pandemic. These results are important to at least launch the debate and begin to bridge the lack of knowledge on this field.

It is important to remember that telecommuting during covid-19 was not a free choice, as governments around the world forced employees to work from home to prevent the spread of the virus. Consequently, the voluntary and (mainly) partial nature of telework has been completely contradicted. We sought to find out what has changed in this working method. However, the results of this study coincided somewhat with some of the claims of previous research on telework, mostly under normal circumstances. Mandatory and full-time telework during the pandemic, in most of the domains studied, seems to have similarities with telework under normal circumstances. However, there are some differences. Thus, they are the ones that can help bridging the lack of knowledge in this "unstudied domain within the telework literature" (Chong et al., 2020).

Our results revealed that in fact the effects of telework during the pandemic, present significant similarities with the telework prior to the pandemic, which the literature contemplates, where it had a voluntary and partial character. Thus, answering to the 1st objective of this thesis: it is examined the perceptions of teleworkers regarding their satisfaction with remote work by exploring some of the advantages and disadvantages of this kind of work.

Literature supports that telework by giving employees' more flexibility and autonomy and a better and more flexible balance between work and family duties (that conversely may lead to conflict), consequently contributes to an increase in the perceived sense of productivity. The results of this study showed that these effects of telework, even in a pandemic scenario, actually appear as the main advantages of teleworking, as suggested by the literature. Therefore, in line with previous studies, results showed that flexibility and productivity are the domains where teleworkers feel the most satisfied with, being the main advantages that telework can bring.

First, the results showed that flexibility gives employees a substantial sense of freedom and independence in scheduling their own work tasks, increasing their perceived autonomy and job satisfaction. This positive outcome for teleworkers has long been suggested by older literature (Baruch, 2001; Kurland & Cooper, 2002). Similarly to the findings of this study, Campbell and Heales (2008), while studying the consequences of the telecommuting program for 250

employees, showed that there is in fact, a strong positive outcome in terms of flexibility in work scheduling when employees move from the office to home. Flexibility is the domain in which teleworkers report the highest levels of satisfaction.

Second, the results showed that teleworkers are satisfied with the balance between work and family roles, that have become more flexible due to telework, even as a mandatory arrangement. In fact, telework, by bringing flexibility in the scheduling of work tasks, also brings greater flexibility in the organization of daily life, consequently impacting family demands, leading to greater integration between work and family duties (Duxbury et al., 1998; Gajendran & Harrison, 2007; Raghuram & Wiesenfeld, 2004). However, the pandemic seems to have brought more conflict between these two roles, as we will discuss later when answering the 2nd objective.

Consequently, teleworkers were found to report high levels of satisfaction with their work productivity during the pandemic. A substantial increase in productivity was expected, as the results of this study agrees with previous researches. For example, Martin and MacDonnell (2012) found positive correlations between telecommuting and organizational outcomes, including perceived productivity. Furthermore, a meta-analysis conducted by Gajendran and Harrison (2007), concluded that teleworking, in addition to its detrimental effects, also had beneficial effects such as job satisfaction and performance. This finding leads to the conclusion that, according to the literature, the increase of the perceived productivity is indeed a positive effect of teleworking.

Yet, everything that is positive also has its drawbacks, and teleworking is no exception.

The concern with the social isolation that telework can effectively cause, is a very common point in various studies on this field (Dubrin, 1991; Kurland & Cooper, 2002; Mackie-Lewis, 1999; Tomaskovic-devey & Risman, 1993). In fact, given the levels of satisfaction of teleworkers, the results of this study are very explicit and in line with the literature. The teleworker's report mentions lower levels of satisfaction with the isolation brought about by the nature of this work arrangement, showing that teleworkers are indeed concerned about the social isolation felt, considering it a disadvantage of telework. The lack of visibility and social contact with the "company", can lead workers to feel alienated, where feelings of exclusion and isolation can arrive, bringing with it job dissatisfaction (Gajendran & Harrison, 2007). In addition, a study of 76 teleworkers at a Canadian multinational company found that workers were concerned that despite their strong performance and improved productivity levels due to

their ability and satisfaction in working from home, they would be neglected in terms of career promotions, due to their lack of visibility (Richardson & Kelliher, 2015). Similar to the results of other studies, social isolation is a common concern of employees.

However, the pandemic drove companies out of their offices indefinitely, implying a global absence of face-to-face and informal interactions, decreasing more intensely the building of relationships between employees, co-workers, and managers. The results found on social isolation domain, can be explained both by the emergence of telework (as we saw above) due to its remote characteristic, but also due to pandemic restrictions (e.g. lockdown) that may have accentuated the sense of isolation. So, what was the impact of the pandemic restrictions on the sense of isolation that teleworking entails? the answer to the 2nd proposed objective is indeed necessary and will be discussed later.

Now by looking at an organizational perspective of maintaining performance levels and managing teleworkers for an effective telework, it is essential that the company can support and maintain an effective and quality organizational communication between teams and managers.

First, organizational support is indeed important not only to provide indispensable technical support to ensure efficient coordination within the organization and thus achieve more positive outcomes (Bosua et al., 2013), but also to provide social support to employees (Bentley et al., 2016). Social support is the degree to which employees feel that their organization, coworkers, and managers value their contributions and care about their well-being (Eisenberger et al., 1986), which can substantially reduce feelings of isolation (Bentley et al., 2016). Here, the results of this study showed that teleworkers reported high levels of satisfaction with the organizational support provided by their companies during the pandemic. These findings are not unexpected given the demonstrated role of social support and management efforts in improving telework efficiency that the pandemic required of all companies in order to maintain at least a standard level of performance during this crisis. Teleworking seems to play an important role in supporting employees when face-to-face support is not allowed, and companies seemed digitally prepared to a safe shift into the virtual office panorama.

Second, the results found for organizational communication domain respectively with the team and with managers, showed that in general employees are satisfied with organizational communication while working remotely during the pandemic. In this domain, the literature does not reach a consensus. Part of the literature states that teleworking may hinder communication between employees and managers which may lead to communication disruptions and

misunderstandings (Ramsower, 1985; Yap & Tng, 1990; Duxbury & Neufeld, 1999). However, our results are in line with the part of the literature that indicates that organizational communication benefits from telework.

For example, Akkirman and Harris (2005), while comparing communication satisfaction levels between teleworkers and in-office workers, found that teleworkers were happier with organizational communication than traditional in-office workers, justifying these results with previously structured preparation, training, and support. A similar but older study conducted by Fritz et al. (1997) found that telecommuting does not have a negative impact on communication in the office, teleworkers were more satisfied with overall organizational communication than conventional workers in the office. The results of this study may not be justified for the same reasons as the previous studies, due to the rapid spread of the virus, which forced companies to quickly switch to telework without having time to properly train and prepare for a virtual transition. Thus, the results found can be explained by the increasingly advanced and sophisticated communication technologies, often called "collaboration technologies", which have enabled employees and companies to interact with each other, share data, information, ideas, and work on the same projects at the same time by bringing together remote workers in virtual teams to accomplish work tasks (Samarah, 2006). In addition, this technology makes it possible to make more electronic contacts, as contact with someone is only a click away, making it possible to communicate with more individuals more easily than would otherwise be possible, improving organizational communication and potentially reducing part of the sense of isolation.

At this point, we have seen that the results of this study are in line with some of the previous literature on teleworking. However, the pandemic had impacts on this work arrangement and, consequently, on the workers, but not as much as expected.

Therefore, answering the proposed 2nd objective, significant differences were found on the levels of satisfaction within work-life balance and communication with management domains, when comparing *Newcomers* and *Usual teleworkers*

Although teleworkers are satisfied with the balance between work and personal-family duties achieved by the flexibility provided by telework, as mentioned earlier, the results showed a higher level of satisfaction with work-life balance in *usual teleworkers*, that started teleworking before the pandemic, when compared to *newcomers*, who started teleworking due to the pandemic.

In line with previous studies, a suitable justification for this result is that the covid-19 pandemic, by bringing the entire household together in the same place at the same time, has further intensified the conflict between work and family roles, since there is no spatial or temporal boundary between them, threatening the boundaries between work and personal/family life (Hill et al., 1998; Standen et al., 1999). Although these results may seem almost like a “double-edged sword”, teleworkers are indeed satisfied with their work-life balance during the pandemic. This can be explained by a study conducted by Greenhaus and Beutell (1985), in which they have examined the sources of conflict between work and family roles, where it was concluded that the flexibility that telework allows can erase the negative impact of boundary permeability and family conflict, since teleworkers can schedule their work tasks in the best way to minimize interference with family roles. It can be concluded that although people are satisfied with the work-life balance brought about by telework, the boundaries have become more blurred due to the pandemic.

Furthermore, the results showed that *usual teleworkers*, are more satisfied with the communication with their managers than *newcomers*. These results showed that the sudden and very quick shift of the companies to a remote working regime, made the role of managers significantly more difficult, as they had to provide more technical and social support to their teams in order to maintain the same performance levels, which may have led to a decrease in individual contact with each team member.

The pandemic brought more difficulties in the communication with managers, which indicates that managing a team became more complicated due to the unexpected and sudden nature of this pandemic.

However, the pandemic had no impacts on individual performance and social isolation as we would expect. For example, our findings did not provide differences of self-perceived performance between *newcomers* and *usual teleworkers*.

According to the OECD (2020), the ability to choose when and how much to telework may thus be crucial to achieving productivity gains. Indeed, Bloom et al (2015) in addition to demonstrating the positive causal impact of telework on the productivity of workers at a call center in China, found that workers who voluntarily chose to telework achieved twice the output (productivity) of those who were simply being forced to telework. But as said before, the results of this study are not in line with these findings.

On the other hand, a current explanation for this finding is that mandatory telework came as a collateral " damage" of this pandemic, since the confinement was fundamental in stopping the spread of the virus, preventing more people from dying. People did not take teleworking as a forced choice, but as an essential choice for overall well-being, and indeed humans have the ability to adapt and embrace change when it is crucial. Indeed Moran (2018) in his book on human adaptability states that *"individuals respond to changes in their environment through morphological and functional adjustments"*. Additionally, in order to complement the results found with previous studies, Froggatt (1998, as cited in Lamond, 2000) showed that at NCR, where about 20% of its American workforce (about 12,500 employees) was involved in a mandatory teleworking program, the company made a 15-20% productivity improvement since the implementation of this new work arrangement. Similarly, Froggatt (1998, as cited in Lamond, 2000) reported that Nortel, which also implemented a telecommuting program for about 2,500 of its U.S. employees, but on a voluntary basis, led to higher employee satisfaction and increased productivity. These results showed that regardless of whether telework is voluntary or mandatory, it is a productive work arrangement and even in a pandemic scenario, teleworkers are satisfied with it.

Regarding the isolation felt by teleworkers, the pandemic was expected to have a significant impact on this domain, accentuating and intensifying the sense of isolation. However, the results showed that this intensification of the feeling of isolation did not occurred.

According to Euronews (2020), 3,9 billion people, more than half of the world's population has been ordered to stay at home and could only go out for essential needs, and "everyone was on the same boat". A possible explanation for these findings is that the pandemic meant that the whole company was working from home and offices were closed, and therefore the feelings of alienation and deprivation from office interactions were not intensified by the pandemic itself. On the other hand, the whole family was also confined at home, which may have also contributed to the non-intensification of isolation, but the intensification of the conflict, as we saw above. Isolation is indeed a disadvantage of telework and the results of this study showed that human beings need face-to-face interactions and to build relationships with their co-workers and managers in order not to feel excluded and left out of their professional life.

When it comes to flexibility in work organization and communication with the team, the results were inconclusive of any pandemic impact in these areas. The results showed that telework by itself, without considering any atypical scenario, is a flexible work arrangement that

brings feelings of freedom and autonomy, even in a pandemic scenario where the entire household is at home. Apart from flexibility in the workplace, which is not possible for obvious reasons, telework has the same characteristics that the literature suggests (as we saw above), and workers are satisfied with it. As for communication within the team, it doesn't seem to have been affected by the pandemic either. The results support the positive effect of telework on communication with the team, as suggested by some of the literature on organizational communication, as we saw above.

Last but not least, it is important to see how the overall teleworking experience of employees was, during the first year of the pandemic and whether or not they have the intention to continue to embrace this work arrangement.

Thus, to answer the 3rd proposed objective, the results showed that teleworking was a very positive experience for most teleworkers, since they are indeed satisfied with the positive effects (advantages) of telework, that were discussed above, considering isolation as the only negative effect within the domains studied. Similarly to our findings, Anderson et al. (2015) revealed that working from home is usually associated with more positive effects than negative ones. In turn, the results allow us to acknowledge that most teleworkers, having a positive telework experience, want to continue teleworking in a post-pandemic future, but on a hybrid basis of 2 or 3 telework days per week. In fact, the hybrid model may be a vehicle to reduce feeling of isolation since people who telecommute for longer periods of time feel more isolated than people who telecommute two or three times a week (Mokhtarian et al., 1998).

As stated by Adam Ozimek (2020), “the positive results of the experiment is set to accelerate the trend of remote work even more rapidly”. Moreover, if we investigate what is currently happening among the largest companies in the world, we notice that they are already announcing the extension of the telecommuting policies, and allowing their employees to telework permanently, on a hybrid basis. Google, for example, in a memo later published as a blog post, its CEO Sundar Pichai announced "We will move to a hybrid work week where most Googlers spend approximately three days in the office and two days where they best work" (Pichai, 2021).

Therefore, it supports what this thesis has proven: teleworking is indeed a positive and advantageous working arrangement.

The results also showed that the positivity of personal experiences and the intention to continue teleworking did not depend on when (pre or during the pandemic) teleworkers started

teleworking. For *usual teleworkers*, who started this method of work before the pandemic as a voluntary arrangement, their intention to continue teleworking was expected to remain. But for *newcomers* that were forced to telework, it was expected that "*a forced choice seems less attractive to an individual than a free choice*" (Hammock and Brehm, 1996 as cited in Hallin, 2020).

However, the results did not reflect this. Even forced, teleworkers felt satisfied with their teleworking experience during the pandemic and still intend to continue teleworking in the future. In fact, teleworking is so advantageous that it does not matter whether employees started teleworking as a voluntary or mandatory arrangement.

We can conclude by saying that when people experience this method of work, they understand that telework is really satisfying and advantageous, and so the context they entered does not matter, and they to continue embracing this method of work.

Conclusions, limitations and future research

Conclusions

The literature has shown that telework can have several impacts on both the personal and professional lives of employees and this study has proven that the advantages and disadvantages suggested by the literature are verified even in a different and atypical telework scenario, as it presents significant similarities with the telework prior to the pandemic, which the literature supports.

Higher perceived productivity, greater flexibility and autonomy in scheduling work tasks, a better work-life balance due to the flexibility that telework allows, are the main advantages that telework offers, even in a mandatory and home-based regime.

However, the fear of isolation is indeed a major concern among employees, who have considered isolation as the only negative effect, within the studied domains.

At an organizational perspective, this study showed that companies played an essential role in supporting their employees towards a successful teleworking experience. The rapid technological transformation of the last few decades and thus the emergence of sophisticated

collaboration technologies, played a fundamental role to achieve the success of teleworking during this pandemic. These technologies helped bridging the lack of social face-to-face interactions, somehow mitigating some of the sense of isolation and helped maintain effective and quality communication with co-workers and managers. Although digital communication is used to complement the usual need for physical social interaction, and in some ways, it helps to do so, but it turns out that it is not as socially rewarding as regular social interactions because humans truly need to develop and build relationships with others.

The pandemic has had quite an impact on both the personal and professional lives of workers around the world. Professionally, people had to adapt to a new way of working that was unknown to many, the telework. It is true that the pandemic had some impacts on this way of working, but not as much as expected. First, the pandemic has brought more difficulties in communicating with managers, indicating that managing a team has become more difficult due to the unexpected and sudden nature of this pandemic. Moreover, although balancing work and personal duties has become easier due to the flexibility provided by telework, by bringing the entire household together in the same place at the same time, the pandemic has further intensified the conflict between work and family roles.

Therefore, we may conclude that: 1) Managers played a more difficult role in remotely managing their teams; 2) the boundaries between work and family roles have become more blurred due to the pandemic.

However, we expected different results from the impact of the pandemic on the perceived productivity and social isolation domains. It was expected that usual teleworkers would feel more productive before than during the pandemic, since they were not being forced to telework and a “forced choice feels less attractive than a voluntary choice”. But this didn’t happen. This finding leads us to believe that people did not take teleworking as a forced choice, but as an essential choice for overall worlds well-being.

Regarding isolation, the pandemic did not intensify this feeling, as predicted, since everyone was working from home and the office was empty and in-office interactions were not possible. In addition, the whole family was at home, which could have contributed to the non-intensification of this feeling.

This study showed that employees indeed had a positive teleworking experience during the first year of pandemic, which overall indicates that telework is in fact a satisfying and advantageous way of work for employees. Consequently, the employees' intentions seem to

generally converge and coincide. They want to continue to telework in a post-pandemic future, on a hybrid basis of 2 or 3 days of remote work per week and the rest of the week at the office, in order to bond and build relationships with co-workers. In fact, hybrid regimes are already happening among some of the largest companies in the world.

A future with more workers and organizations working remotely to complement regular working hours, seems to be over the horizon in the wake of the Covid-19 pandemic.

Nevertheless, policies to support the transition to more generalized remote working will need to consider very carefully the potential benefits and costs for productivity, job quality, workers' work-life balance and mental health. Understanding the effectiveness and success of telework across its dimensions and impacts can provide systematic insight into its potentials, strengths and limitations and thus, help companies guide their future towards the telework strategy.

Limitations and future research

Although the interest of the findings achieved so far, they should be interpreted with caution and generalization is impossible. Our sample is small, and respondents participated voluntarily. It must be noted that workers without a social network were excluded from this study.

The database includes a set of variables that deserve proper analysis. For example, the gender, education, and age effects, that might affect teleworkers perceptions should be explored in future research. There are also industries and occupations differences that deserve proper scrutiny.

Future research should also focus on the managerial side of telework and on in-office workers, which are important sides that need to be studied in order to provide solid assumptions about telework impacts from all perspectives. For example, there is an evident lack of knowledge on the organizational support towards an efficient telework arrangement, which as we saw on this study, is a very important variable not only to provide support in technical issues that might arrive but also to support employee's emotional and mental well-being and fight against the major concern of employees, social and professional isolation. Hence, it is crucial that future studies investigate the psychological/mental well-being of teleworkers which might be an important step towards an effective telework.

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Annexes

Annex A - Online survey

12/07/2021

Teletrabalho: A sua experiência e visão do trabalho no futuro

Teletrabalho: A sua experiência e visão do trabalho no futuro

Assinalou-se no passado mês de Março, um ano de pandemia em Portugal. Um ano de muitos desafios e mudanças em todas as vertentes da nossa vida. A todos nós, foi exigido um esforço e adaptação a novas rotinas, novos hábitos e novas formas de trabalhar.

O teletrabalho ou trabalho remoto, passou a fazer parte do novo normal e foi necessária esta mudança para que o mercado de trabalho nacional e internacional repensasse sobre a forma como o trabalho presencial é prestado.

Assim sendo, convido-o a fazer um balanço deste ano de mudança, de novas rotinas profissionais e a refletir sobre o futuro do trabalho. Para tal, peço que responda ao Questionário sobre Teletrabalho, considerando a sua experiência em teletrabalho e a sua visão sobre o futuro pós-COVID-19.

A sua participação é fundamental e anónima!

***Obrigatório**

1. 1.Indique em que setor trabalha *

Marcar apenas uma oval.

- Telecomunicações
- Hotelaria e turismo
- Educação e formação
- Banca e seguros
- Saúde, biotecnologia e farmacêutico
- Comércio e distribuição
- Tecnologias de informação
- Administração, negócios e Serviços
- Construção civil , obras públicas e imobiliário
- Estudante
- Outra: _____

Frequência de teletrabalho

2. 2. Durante o 1º ano de pandemia , quantos dias/meses trabalhou remotamente? *

Marcar apenas uma oval.

- 0 dias , não tive nenhuma experiência de teletrabalho
Avançar para a pergunta 21
- 1-15 dias
- 15 dias-1 mês
- mais de 1 mês
- Todos os dias

Tipo de regime

3. 3. Em que regime realizou o Teletrabalho? *

Marcar apenas uma oval.

- A tempo completo
- A tempo parcial

I. A sua
experiência e
preferências
sobre
teletrabalho

Após um ano de teletrabalho, convidamo-lo a partilhar connosco de forma anónima , a avaliação que faz da sua experiência e qual o impacto na sua vida profissional, pessoal e familiar.

4. 4. Como descreveria a sua experiência em Teletrabalho? *

Marcar apenas uma oval.

- Bastante positiva
- Positiva
- Não tenho opinião formada
- Negativa
- Muito Negativa

5. 5. O Teletrabalho surgiu durante a pandemia ou ja fazia anteriormente? *

Marcar apenas uma oval.

- Anteriormente e a tempo completo
 Anteriormente e esporadicamente
 Só surgiu com a pandemia

6. 6. Como avalia a sua experiência teletrabalho quanto a: *

(Classifique de 1 a 5 as seguintes dimensões, sendo que 1 corresponde a "nada satisfeito" e 5 a "muito satisfeito")

Marcar apenas uma oval por linha.

	1."Nada satisfeito"	2	3	4	5."Muito satisfeito"
Gestão do equilíbrio entre o trabalho e a vida familiar/pessoal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tempo para executar as tarefas que estão atribuídas durante o horário de trabalho	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trabalhar em isolamento social	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Produtividade do trabalho desenvolvido	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manutenção de rotinas e hábitos saudáveis (e.g. fazer desporto..)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. 7. Como avalia a sua experiência de teletrabalho quanto a: *

(Classifique de 1 a 5 as seguintes dimensões, sendo que 1 corresponde a "nada satisfeito" e 5 a "muito satisfeito")

Marcar apenas uma oval por linha.

	1."Nada satisfeito"	2.	3.	4.	5."Muito satisfeito"
Oportunidades de promoção	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comunicação com a minha chefia (frequência, qualidade, acompanhamento e feedback)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comunicação com a equipa (frequência, qualidade, cooperação e entajuda)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 8. Indique o quão importante são para si os seguintes aspetos do Teletrabalho: *
(Classifique de 1 a 5 as seguintes dimensões, sendo que 1 corresponde a "completamente sem importância" e 5 a "extremamente importante")

Marcar apenas uma oval por linha.

	1."Completamente sem importância"	2	3	4	5."Extremamente importante"
Possibilidade de organizar o meu horário-flexibilidade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possibilidade de fazer videoconferências em vez de reuniões presenciais	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oportunidade de não ter de se deslocar todos os dias para o escritório - ganho de tempo (ex.trânsito), menos stress, menos custos de transporte.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oportunidade de passar mais tempo em casa, com a família.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Linha 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Condições de teletrabalho em casa

10. 9. Tem acesso ao equipamento necessário para trabalhar remotamente? (por exemplo: computador, camara e microfone) *

Marcar apenas uma oval.

- Sim
 Não

11. 9.1 Se sim, indique quais:
(Pode seleccionar mais do que uma opção)

Marcar tudo o que for aplicável.

- Computador
 Camara
 Microfone
 Internet
 Cadeira de escritório

Outra: _____

12. 10. Em sua casa, tem um lugar específico e isolado onde possa realizar as tuas tarefas diárias sem ser incomodado? *

Marcar apenas uma oval.

- Sim
 Não

13. 10.1 Se sim, indique qual:

Marcar tudo o que for aplicável.

- Escritório
 Quarto
 Sala

Outra: _____

14. 11. Comparando as condições no seu local habitual de trabalho (escritório) e em casa classifique: *

Marcar tudo o que for aplicável.

	Muito Pior	Pior	Igual	Melhor	Muito melhor
Condições física e ergonómicas (iluminação, temperatura, espaço, mobiliário) disponíveis para teletrabalhar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Capacidade para "desligar" dos temas e preocupações de trabalho fora do horário de trabalho	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ruido á sua volta enquanto trabalha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. 12. De forma geral, como classifica o apoio da sua empresa na execução do seu teletrabalho? *

(Classifique de 1 a 5, sendo que 1 corresponde a 'nada satisfeito' e 5 a 'muito satisfeito')

Marcar apenas uma oval.

	1	2	3	4	5	
Nada satisfeito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Muito satisfeito

16. 13. Teve de cuidar de crianças (<12 anos), idosos ou pessoas com deficiências durante o seu horário de Teletrabalho? *

Marcar apenas uma oval.

- Sim
 Não *Avançar para a pergunta 18*

17. 13.1 Se sim, classifique o impacto da presença de crianças, idosos ou pessoas com deficiência na performance das suas tarefas de Teletrabalho.

Classifique de 1 a 5, sendo que 1 corresponde a 'extremamente perturbador' e 5 a 'nada perturbador'

Marcar apenas uma oval.

	1	2	3	4	5	
Extremamente perturbador	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Nada perturbador

A sua visão sobre o teletrabalho num futuro pós covid-19

A pandemia levou-nos a grandes mudanças no nosso dia-a-dia e a experienciar uma nova forma de trabalhar e certamente que após a pandemia muitas destas mudanças vieram para ficar! Convido-o a partilhar comigo a sua visão sobre a forma de trabalhar no futuro!

18. 14. Num futuro Pós-pandémico , gostaria de continuar a realizar o seu trabalho em regime de teletrabalho? *

Marcar apenas uma oval.

- Sim , teletrabalho em regime total *Avançar para a pergunta 25*
 Sim, teletrabalho em regime parcial *Avançar para a pergunta 19*
 Não, ausência total de teletrabalho *Avançar para a pergunta 25*

Equilíbrio ideal

19. 14.1 Se sua empresa estiver a pensar expandir a política de mobilidade, qual acha que é o equilíbrio ideal entre trabalhar remotamente e no escritório, considerando as necessidades empresariais e individuais? *

Marcar apenas uma oval.

- 1 dia por semana em teletrabalho
 2 dias por semana em teletrabalho
 3 dias por semana em teletrabalho
 4 dias por semana em teletrabalho

20. 14.2 Porque razão considera ser esse o balanço ideal?

Avançar para a pergunta 25

Questões para quem não teletrabalhou

21. 15. Por favor, indique porque razão não teletrabalhou durante o primeiro ano de pandemia? *

Marcar tudo o que for aplicável.

- Foi-me pedido pelos meus superiores para trabalhar no escritório
- O meu trabalho não pode ser feito virtualmente
- Eu pessoalmente quis e obtive permissão para trabalhar no escritório
- Não trabalhei durante este período

Outra: _____

22. 16. Gostaria de passar a realizar o seu trabalho em regime de teletrabalho? *

Marcar apenas uma oval.

- Sim, teletrabalho em regime total *Avançar para a pergunta 28*
- Sim, teletrabalho em regime parcial *Avançar para a pergunta 23*
- Não, ausência total de teletrabalho *Avançar para a pergunta 28*

Equilíbrio ideal

23. 16.1 Quantos dias por semana em regime de teletrabalho considera ser um balanço ideal? *

Marcar apenas uma oval.

- 1 dia por semana em teletrabalho
- 2 dias por semana em teletrabalho
- 3 dias por semana em teletrabalho
- 4 dias por semana em teletrabalho

24. 16.2 Porque razão considera ser esse o balanço ideal?

Cargos de Liderança

25. 17. Por favor indique se ocupa uma posição de chefia/liderança *

Marcar apenas uma oval.

- Sim
- Não *Avançar para a pergunta 28*

Questões para a chefia

26. 18. Durante o primeiro ano de pandemia geriu uma equipa? *

Marcar apenas uma oval.

- Sim
- Não *Avançar para a pergunta 28*

27. 18.1 Se sim, de maneira geral, quão difícil foi gerir os seus “Teletrabalhadores” ?

Marcar apenas uma oval.

- Muito difícil
- Difícil
- Neutro
- Fácil
- Muito fácil

Demografia

28. 19. Qual é o seu género?

Marcar apenas uma oval.

- Masculino
- Feminino
- Prefiro não dizer
- Outra: _____

29. 20. Ano de nascimento

Marcar apenas uma oval.

- 1946-1965
- 1965-1985
- 1986-2005

30. 21. Nível educacional

Marcar apenas uma oval.

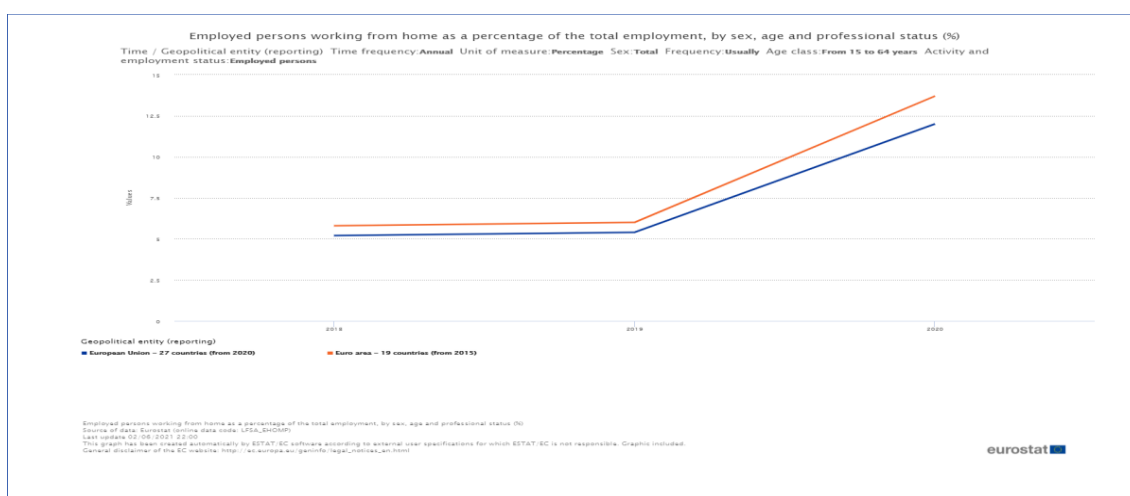
- Ensino básico 1º ciclo (atual 4ºano/antiga instrução primária/4º classe)
- Ensino básico 2ºciclo (atual 6ºano/antigo ciclo preparatório)
- Ensino básico 3ºciclo (atual 9ºano/antigo 5º liceal)
- Ensino secundário (atual 12ºano/ antigo 7º liceal/ ano propedêutico)
- Ensino pós-secundário (cursos de especialização tecnológica não superior)
- Curso técnico superior profissional
- Bacharelato (inclui antigos cursos médios)
- Licenciatura
- Mestrado
- Doutoramento

31. 22. Quantas pessoas vivem consigo?

Marcar apenas uma oval.

- 0
- 1
- 2
- 3
- 4
- >4

Annex B – Employed persons working from home as percentage of the total employment



Source: Eurostat, 2020.

Annex C – Descriptive statistics of the variables under study

Estatística Descritiva

	N	Mínimo	Máximo	Média	Erro Desvio	Assimetria		Curtose	
	Estatística	Estatística	Estatística	Estatística	Estatística	Estatística	Erro Erro	Estatística	Erro Erro
Work-life balance	156	1	5	3,52	1,110	-,422	,194	-,566	,386
Social isolation	156	1	5	2,40	1,100	,469	,194	-,407	,386
Productivity	156	1	5	3,73	1,043	-,545	,194	-,320	,386
Communication with my manager (frequency, quality, monitoring and feedback)	156	1	5	3,49	1,133	-,415	,194	-,718	,386
Communication with the team (frequency, quality, cooperation and mutual help)	156	1	5	3,65	1,021	-,462	,194	-,320	,386
Flexibility - Possibility to organize my schedule	156	1	5	3,85	1,229	-,926	,194	-,117	,386
Company support	156	1	5	3,72	,987	-,602	,194	,040	,386
Personal Telework experience	156	1	5	3,99	,980	-1,069	,194	,432	,386
N válido (de lista)	156								

Annex D - The *T-Student One Sample* tests

Estatísticas de uma amostra

	N	Média	Erro Desvio	Erro padrão da média
Work-life balance	156	3,52	1,110	,089
Social isolation	156	2,40	1,100	,088
Productivity	156	3,73	1,043	,084
Communication with my manager (frequency, quality, monitoring and feedback)	156	3,49	1,133	,091
Communication with the team (frequency, quality, cooperation and mutual help)	156	3,65	1,021	,082
Flexibility - Possibility to organize my schedule	156	3,85	1,229	,098
Company support	156	3,72	,987	,079
Personal Telework experience	156	3,99	,980	,078

Teste de uma amostra

Valor de Teste = 3

	t	df	Sig. (2 extremidades)	Diferença média	95% Intervalo de Confiança da Diferença	
					Inferior	Superior
Work-life balance	5,843	155	<,001	,519	,34	,69
Social isolation	-6,769	155	<,001	-,596	-,77	-,42
Productivity	8,749	155	<,001	,731	,57	,90
Communication with my manager (frequency, quality, monitoring and feedback)	5,441	155	<,001	,494	,31	,67
Communication with the team (frequency, quality, cooperation and mutual help)	7,919	155	<,001	,647	,49	,81
Flexibility - Possibility to organize my schedule	8,596	155	<,001	,846	,65	1,04
Company support	9,162	155	<,001	,724	,57	,88
Personal Telework experience	12,658	155	<,001	,994	,84	1,15

Tamanhos de efeitos de amostra

		Padronizadora ^a	Estimativa de ponto	Intervalo de Confiança 95%	
				Inferior	Superior
Work-life balance	d de Cohen	1,110	,468	,302	,632
	Correção de Hedges	1,115	,466	,300	,629
Social isolation	d de Cohen	1,100	-,542	-,709	-,373
	Correção de Hedges	1,105	-,539	-,706	-,371
Productivity	d de Cohen	1,043	,700	,524	,875
	Correção de Hedges	1,048	,697	,522	,871
Communication with my manager (frequency, quality, monitoring and feedback)	d de Cohen	1,133	,436	,271	,599
	Correção de Hedges	1,139	,434	,269	,596
Communication with the team (frequency, quality, cooperation and mutual help)	d de Cohen	1,021	,634	,461	,805
	Correção de Hedges	1,026	,631	,459	,801
Flexibility - Possibility to organize my schedule	d de Cohen	1,229	,688	,513	,862
	Correção de Hedges	1,235	,685	,510	,858
Company support	d de Cohen	,987	,734	,556	,909
	Correção de Hedges	,992	,730	,553	,905
Personal Telework experience	d de Cohen	,980	1,013	,819	1,206
	Correção de Hedges	,985	1,009	,815	1,200

a. O denominador usado na estimativa dos tamanhos dos efeitos.

O d de Cohen usa o desvio padrão de amostra.

A correção de Hedges usa o desvio padrão de amostra, além de um fator de correção.

Annex E – The *Independent T-Student* tests

Teste de amostras independentes

		Teste de Levene para igualdade de variâncias		teste-t para Igualdade de Médias						
		Z	Sig.	t	df	Sig. (2 extremidades)	Diferença média	Erro padrão de diferença	95% Intervalo de Confiança da Diferença	
									Inferior	Superior
Work-life balance	Variâncias iguais assumidas	3,776	,054	2,310	154	,022	,481	,208	,070	,892
	Variâncias iguais não assumidas			2,444	63,128	,017	,481	,197	,088	,873
Social isolation	Variâncias iguais assumidas	,152	,697	1,117	154	,266	,233	,209	-,179	,646
	Variâncias iguais não assumidas			1,151	60,417	,254	,233	,203	-,172	,639
Productivity	Variâncias iguais assumidas	6,995	,009	,671	154	,503	,133	,199	-,259	,526
	Variâncias iguais não assumidas			,771	73,776	,443	,133	,173	-,211	,478
Communication with my manager (frequency, quality, monitoring and feedback)	Variâncias iguais assumidas	1,882	,172	1,727	154	,086	,369	,214	-,053	,792
	Variâncias iguais não assumidas			1,817	62,550	,074	,369	,203	-,037	,776
Communication with the team (frequency, quality, cooperation and mutual help)	Variâncias iguais assumidas	,019	,891	,500	154	,618	,097	,195	-,287	,481
	Variâncias iguais não assumidas			,507	58,882	,614	,097	,192	-,287	,481
Flexibility - Possibility to organize my schedule	Variâncias iguais assumidas	12,050	<,001	,855	154	,394	,200	,234	-,262	,662
	Variâncias iguais não assumidas			1,025	80,844	,308	,200	,195	-,188	,588
Company support	Variâncias iguais assumidas	1,777	,184	,369	154	,713	,069	,188	-,302	,441
	Variâncias iguais não assumidas			,394	64,247	,695	,069	,176	-,282	,421
Personal Telework experience	Variâncias iguais assumidas	,862	,355	,625	154	,533	,117	,187	-,252	,485
	Variâncias iguais não assumidas			,676	65,673	,501	,117	,173	-,228	,461
Would you like to continue teleworking?	Variâncias iguais assumidas	2,670	,104	1,611	154	,109	,150	,093	-,034	,334
	Variâncias iguais não assumidas			1,572	55,595	,122	,150	,095	-,041	,341

Estadísticas de grupo

	Non Pandemic vs In Pandemic	N	Média	Erro Desvio	Erro padrão da média
Work-life balance	Non Pandemic	36	3,89	1,008	,168
	In Pandemic	120	3,41	1,119	,102
Social isolation	Non Pandemic	36	2,58	1,052	,175
	In Pandemic	120	2,35	1,113	,102
Productivity	Non Pandemic	36	3,83	,845	,141
	In Pandemic	120	3,70	1,097	,100
Communication with my manager (frequency, quality, monitoring and feedback)	Non Pandemic	36	3,78	1,045	,174
	In Pandemic	120	3,41	1,149	,105
Communication with the team (frequency, quality, cooperation and mutual help)	Non Pandemic	36	3,72	1,003	,167
	In Pandemic	120	3,63	1,030	,094
Flexibility - Possibility to organize my schedule	Non Pandemic	36	4,00	,926	,154
	In Pandemic	120	3,80	1,307	,119
Company support	Non Pandemic	36	3,78	,898	,150
	In Pandemic	120	3,71	1,016	,093
Personal Telework experience	Non Pandemic	36	4,08	,874	,146
	In Pandemic	120	3,97	1,012	,092
Would you like to continue teleworking?	Non Pandemic	36	2,17	,507	,085
	In Pandemic	120	2,02	,485	,044

Tamanhos de efeitos de amostras independentes

		Padronizador ^a	Estimativa de ponto	Intervalo de Confiança 95%	
				Inferior	Superior
Work-life balance	d de Cohen	1,095	,439	,063	,814
	Correção de Hedges	1,100	,437	,062	,810
	Delta do vidro	1,119	,429	,052	,805
Social isolation	d de Cohen	1,099	,212	-,161	,585
	Correção de Hedges	1,105	,211	-,160	,582
	Delta do vidro	1,113	,210	-,164	,583
Productivity	d de Cohen	1,045	,128	-,245	,500
	Correção de Hedges	1,050	,127	-,244	,498
	Delta do vidro	1,097	,122	-,251	,494
Communication with my manager (frequency, quality, monitoring and feedback)	d de Cohen	1,126	,328	-,047	,702
	Correção de Hedges	1,131	,327	-,046	,698
	Delta do vidro	1,149	,322	-,054	,696
Communication with the team (frequency, quality, cooperation and mutual help)	d de Cohen	1,024	,095	-,278	,467
	Correção de Hedges	1,029	,095	-,276	,465
	Delta do vidro	1,030	,094	-,278	,467
Flexibility - Possibility to organize my schedule	d de Cohen	1,231	,163	-,211	,535
	Correção de Hedges	1,237	,162	-,210	,533
	Delta do vidro	1,307	,153	-,220	,526
Company support	d de Cohen	,990	,070	-,303	,443
	Correção de Hedges	,995	,070	-,301	,440
	Delta do vidro	1,016	,068	-,304	,441
Personal Telework experience	d de Cohen	,982	,119	-,254	,491
	Correção de Hedges	,987	,118	-,253	,489
	Delta do vidro	1,012	,115	-,258	,488
Would you like to continue teleworking?	d de Cohen	,490	,306	-,068	,680
	Correção de Hedges	,492	,305	-,068	,676
	Delta do vidro	,485	,309	-,066	,683

a. O denominador usado na estimativa dos tamanhos dos efeitos.

O d de Cohen usa o desvio padrão agrupado.

A correção de Hedges usa o desvio padrão agrupado, além de um fator de correção.

O delta de Glass usa o desvio padrão de amostra do grupo de controle.

Annex F - The alternative non-parametric *Wilcoxon Mann-Whitney* test (Productivity and Flexibility)

Sumarização de Teste de Hipótese

	Hipótese nula	Teste	Sig. ^{a,b}	Decisão
1	A distribuição de Productivity é igual nas categorias de Non Pandemic vs In Pandemic.	Amostras Independentes de Teste U de Mann-Whitney	,642	Retar a hipótese nula.
2	A distribuição de Flexibility - Possibility to organize my schedule é igual nas categorias de Non Pandemic vs In Pandemic.	Amostras Independentes de Teste U de Mann-Whitney	,844	Retar a hipótese nula.

a. O nível de significância é ,050.

b. A significância assintótica é exibida.

Amostras Independentes de Resumo de Teste U de Mann-Whitney

N total	156
U de Mann-Whitney	2115,500
Wilcoxon W	9375,500
Estatística de teste	2115,500
Erro padrão	226,756
Estatística de Teste Padronizado	-,196
Sinal assintótico (teste de dois lados)	,844

Amostras Independentes de Resumo de Teste U de Mann-Whitney

N total	156
U de Mann-Whitney	2054,000
Wilcoxon W	9314,000
Estatística de teste	2054,000
Erro padrão	227,896
Estatística de Teste Padronizado	-,465
Sinal assintótico (teste de dois lados)	,642

Annex G – Frequency statistics of the *Personal Telework Experience*

			Personal Telework experience		
			N	%	
Estadísticas Personal Telework experience			Very Negative	1	0,6%
			Negative	22	14,1%
			Neutral	3	1,9%
			Positive	81	51,9%
			Very Positive	49	31,4%
N	Válido	156			
	Omisso	0			

Annex H – Frequency statistics of the *Intention to continue in Telework*

			Would you like to continue teleworking?		
			N	%	
Estadísticas Would you like to continue telework			No, total absence of telework.	15	9,6%
			Yes, in partial regime.	118	75,6%
			Yes, in full-time regime.	23	14,7%
N	Válido	156			
	Omisso	0			

Annex I – The *Chi-square* test

		Would you like to continue teleworking?		
		No, total absence of telework. Contagem	Yes, in partial regime. Contagem	Yes, in full-time regime. Contagem
Non Pandemic vs In Pandemic	Non Pandemic	2	26	8
	In Pandemic	13	92	15

Testes qui-quadrado de Pearson

		Would you like to continue teleworking?
Non Pandemic vs In Pandemic	Qui-quadrado	2,650
	gl	2
	Sig.	,266

Os resultados são baseados em linhas e colunas não vazias em cada subtabela mais interna.