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From Face to-Face to Teleworking: A Literature Review on How Different Types of Work Affect Psychological Well-Being

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ABSTRACT: *In 2022, the pandemic showed the first signs of diminishing the virulence and lethality of the coronavirus and its variants. Gradually, workers had to re-adapt from mandatory teleworking into a massive comeback to face-to-face work, while some preferred to stay home office. Through extensive archival research, this research investigated the different types of work and their influence on Psychological Well-Being (PWB) in the Brazilian IT industry. Key findings revealed psychological fallout caused by the pandemic, affecting not only the workers' performance but also the way workers should work. Some prefer staying home due to fewer distances traveled and lower mobility costs, for instance. In contrast, others prefer face-to-face work because it facilitates communication and meetings, helps establish trust, facilitates clarity in conversations, and saves time during the workday. Finally, we found evidence that face-to-face work also helps improve satisfaction and PWB.*

KEYWORDS: teleworking, Psychological Well-Being, Brazil, IT industry

INTRODUCTION

The present work addressed an extensive literature review on Psychological Well-Being (PWB), influenced by remote and face-to-face work within the Brazilian IT market. This psychological concept represents the strength and character of workers' connection with the company (Meyer and Allen, 1991).

Well-being is defined by the American Psychological Association (APA) as "a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life." (APA, 2023)

In the following sections, we present the research design and methods, the literature review, analysis, and discussion on the findings. Finally, implications and recommendations for future research complete the study.

PWB has attracted great study in recent years, both in the scientific and general literature, also addressed as a public policy objective across nations (Vieira, Dias, M., Lopes, & Cardoso, 2021; Kanten & Yesıltas, 2015; Burns et al., 2015; Žižek, Treven & Čančer, 2015; Clark, Layard & Senik, 2012; Robertson & Cooper, 2010; Srimathi & Kiran Kumar, 2010; Baird, Lucas, & Donnellan, 2010; Burns & Machin, 2009; Burns, 2017; Beddington et al. 2008).

In this research a qualitative, exploratory research, inductive approach was employed through a comprehensive literature review on the subject. Therefore, the next section, Research Methodology and Limitations outlines the research design for this investigation, followed by the Literature Review, Findings and Analysis, Implications and Discussion, and finally, Future Research.

TELEWORKING VS. REMOTE WORK

In addition, out of the vast number of types of work, two were considered relevant to be investigated because of their significance to the research objectives (see Section 1.4), such as (a) face-to-face work and (b) teleworking. Beforehand, it is essential to establish the differences between *teleworking* and *remote work.*

Teleworking is a flexible work plan that allows an employee to work from a place other than their official duty location for a certain number of days each pay period. This plan must be approved in advance by the employee's supervisor. According to Vartiainen (2021), however, teleworkers utilize personal electronic devices in addition to working physically distant from a location other than an office or corporate premises. In contrast, remote work does not involve visits to the primary workplace or using electronic devices for personal use.

However, in Brazilian Labor Laws, teleworking and remote work are equivalent terms, abiding by Law 14.442/22 issued on 2 September 2022 (Brasil, 2022), stating that "Telework or remote work is considered to be the provision of services outside the employer's premises, predominantly or not, with the use of information and communication technologies, which do not constitute external work." (Brasil, 2022, Art. 75-B)

Note that Law 14.442/22 indicates teleworking and remote work as equivalents, referring to external work, currently known as remote work. (Brasil, 2022, A. 75-B). As a result, there is a disparity between the terms used in the Brazilian Labor Law and the current epistemology on the subject (Vartiainen (2021).

Furthermore, the Government's official Brazilian Institute for Geography and Statistics (IBGE) separates remote work from teleworking the official archives. Therefore, in this research, we followed the current epistemology (Vartiainen, 2021), separating both terms because this research does not appreciate legal issues involving Brazilian labor laws. Thus, Law 14.442/22 is mentioned merely as a legal and regulatory milestone. Finally, this study investigates only teleworking hereafter.

RESEARCH METHODOLOGY AND LIMITATIONS

The current research is a qualitative on Psychological Well-Being (PWB), teleworking with the backdrop of the Brazilian IT market passing through the pandemic, using inductive reasoning and interpretative approach. We worked on up-to-date secondary data via archival research, offering a contemporary epistemology on the themes under inspection.This exploratory qualitative empiric research focuses on identifying and understanding key elements of teleworking pre, during, and post-pandemic. To get it, we endured a search of scientific literature on Portal Capes with terms in Portuguese and English and had the findings described in the upcoming paragraphs.

For isolated terms in Portuguese, they were found for the term *Teletrabalho* 152 articles, being 110 of peer-reviewed journals. For the last five years, (2015-2020), 46 of peer-reviewed journals. For "*Home Office*", it is worth explaining that, although in English, the term is used as a synonym for telework in Latin languages such as Portuguese, Spanish and French, while in English the term appears in two conditions: it designates only one room in the house intended for work at home, not work at home itself, or it corresponds to the name of something like the British Ministry of the Interior / Household Business. Thus, after filtering only for publications in Portuguese, publications were found in which the term application corresponds to work from home. It reduced the results from 1,261,413 to 1,544 publications found, and from the home office was mentioned as an architectural environment (room in a residence) or a work activity at home. For the last eight years (2015-2023), peer-reviewed journals: 615. Hence, this literature evaluation is limited to the topics outlined above. For instance, other countries, other types of work and industries, should be addressed in future research. This work is also limited to the current epistemology on the subject.

LITERATURE REVIEW

Setting the Scenario: Brazilian It Industry

Why Brazil? Because the Brazilian IT industry is huge but little appreciated. With a population of over 215 million and the world's ninth-largest economy, Brazil has been a target of emerging market investments. As a result, the Brazilian IT industry is the Top 10 largest IT market, performing $ 45.5 billion in 2021 and $46.2 billion in 2022, equivalent to 2.7 percent of the Brazilian GDP (ABES, 2012). Therefore, a vast, ever-increasing, and significant IT market that cannot be overlooked. "The market is large enough on its own to support unicorn-sized businesses while

allowing clear expansion paths for successful startups to both emerging and developed markets alike." (Valor, 2023, p.1).

In 2021, the IT world market (domestic market only, export excluded), performed $2,790 billion (ABES, 2022). The top 10 Global IT markets is illustrated in the following Figure 1:

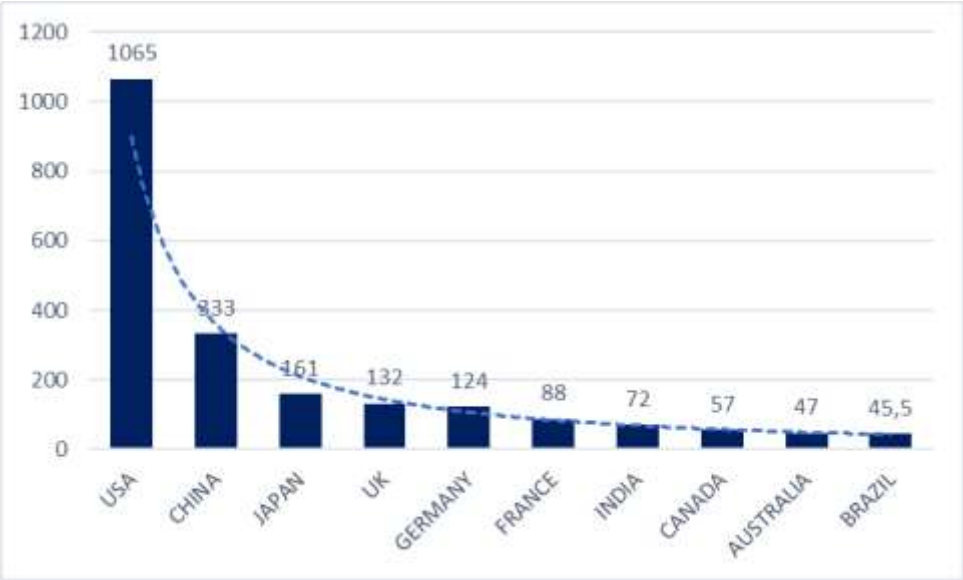

Figure 1 IT World Market 2021. Source: adapted from ABES, 2022

While Figure 1 shows the top 10 countries in the IT segment in 2021, Figure 2 shows the World IT market distribution, separating developed and emerging countries, organized into three divisions: (a) software; (b) services, and finally (c) hardware. Observe that Brazil has the majority of IT activity concentrated in hardware (58 percent), followed by software (25 percent) and services (18 percent).

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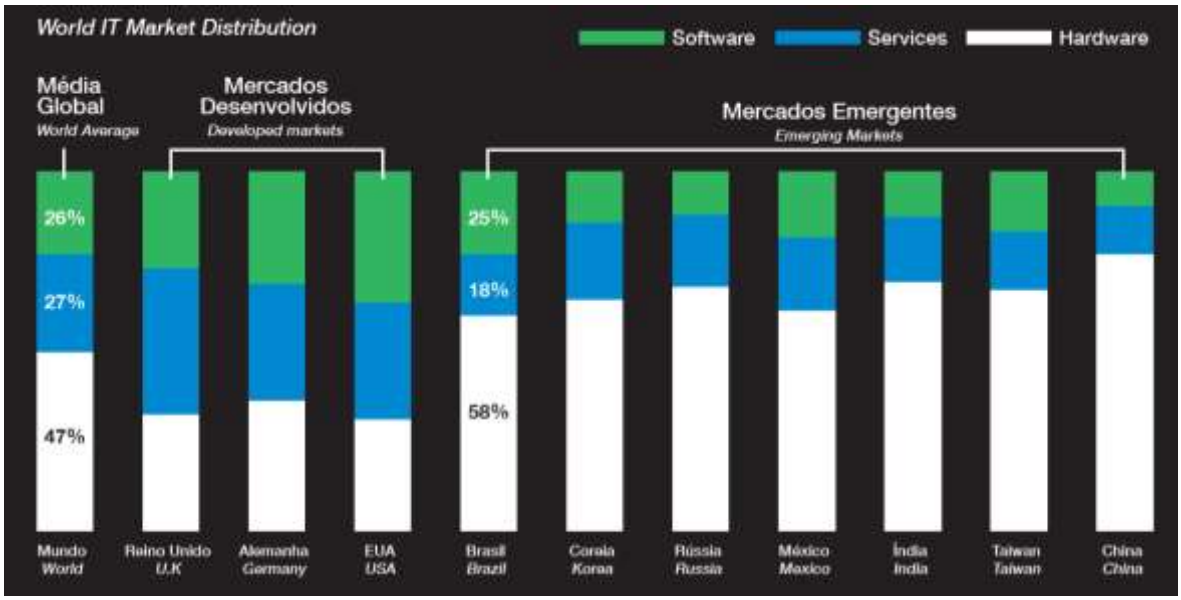

Figure 2 World IT market distribution. Source: ABES, 212, p. 6.

The choice for investigating the Brazilian IT market relies on the fact that Brazilian IT industry is the Top 10 largest IT market, performing $ 45.5 billion in 2021 (see Figure 1). Brazil has been a target of emerging market investments. Figure 2 showed Brazilian IT market segmented into three major activities: (i) hardware (58 percent), (ii) software (25 percent), and (iii) services (18 percent). Figure 3 illustrates Brazil as the first IT market in Latin America, as follows:

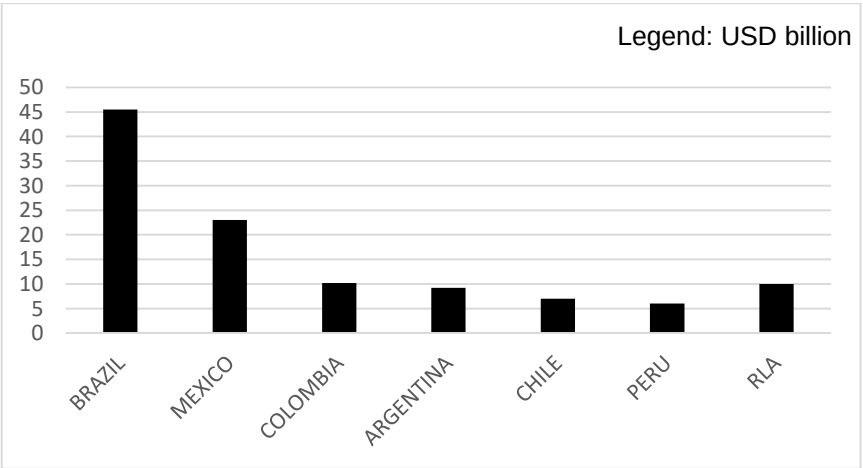

Figure 3 IT Latin America Market 2021.

Source: adapted from ABES, 2022

Figure 4 shows the second place (Mexico), almost half of the size of the Brazilian IT market. Colombia, the third most prominent Latin American IT market, is four times smaller than the

Brazilian market. Figure 4 evidences that Brazil answers for approximately 41 percent of the Latin American IT industry overall. In the next section, the types of work are addressed.

Figure 4 IT Latin America Market 2021.

Source: adapted from ABES, 2022

Types of Working

Teleworking is the work performed remotely through Information and Communication Technologies (Rocha & Amador, 2018). Furthermore, Sakuda and Vasconcelos (2005) define telework as using computers and telecommunications to change the accepted work geography, referring to the displacement from the corporate workplace. However, *telework* is different from *remote work* (discussed in Section 1.2.3).

Teleworking is, thus, a flexible work plan that allows an employee to work from a place other than their official duty location for a certain number of days each pay period. This plan must be approved in advance by the employee's supervisor.
Remote work is a permanent duty station designation, such as the employee's home.[1] According to Vartiainen (2021),

> the difference between *telework* and *remote work* is that a teleworker uses personal electronic devices in addition to working physically remotely from a place other than an office or company premises, whereas remote work does not require visits to the main workplace or the use of electronic personal devices (e-850, emphasis added).

[1] In Brazil, according to Law 14.442 issued on 2 September 2022 (Brasil, 2022), teleworking is equivalent to remote work (See Section 1.2.3)

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Teleworking Worldwide

Two primary and disparate readings on telework seem to guide the predominance of academic studies on the subject, one of which is optimistic and focuses on the benefits of telework for professionals, companies, and society (improving environmental conditions by reducing traffic jams). Another, more pessimistic, focused on the losses of individualization of work, which leads to the social, professional, and political isolation of professionals (Rocha & Amador, 2018).

Tremblay (2002), in pioneering research, studied teleworking from the perspective of teleworkers in Canada and identified a high level of satisfaction among teleworkers. However, at that time, she identified gender differences in the type of work performed among men (linked to information technologies) and women (accounting, translation, and secretariat). Tremblay (2002) raised the benefits perceived by companies (reducing urban traffic, increasing their presence in different parts of the national territory, and guaranteeing professionals satisfaction to increase productivity and quality), the benefits perceived by professionals (greater freedom and autonomy, flexible hours, avoided commuting, greater productivity, proximity to the family and improvement in the quality of work) and disadvantages (technological support to be desired, less prestige for teleworkers in the company, need for better definition of tasks, distance from co-workers and social isolation, the potential increase in workload, difficulties in self-motivation or self-discipline and conflict between work and family life).

Teleworking in Brazil

According to Law 14.442 issued on 2 September 2022 (Brasil, 2022), changing the Brazilian Consolidation of Labor Law (*Consolidação das Leis do Trabalho – CLT,* Decree-Law nº 5.452, issued on 1 May 1943), teleworking is defined as:

> Art. 75-B. Telework or remote work is considered to be the provision of services outside the employer's premises, predominantly or not, with the use of information and communication technologies, which do not constitute external work.
>
> § 1 Attendance, even if regularly, at the employer's premises to carry out specific activities that require the employee's presence at the establishment does not deprive the character of telework or remote work.
>
> § 2 The employee submitted to the telework or remote work regime may provide services by day, production, or task.
>
> § 3 In the event of providing services under the telework or remote work regime for production or task, the provisions of Chapter II of Title II of this Consolidation shall not apply. (Brasil, 2022, Art. 75-B)

We have already discussed in the previous section the disparities between the Brazilian Labor Laws (Brasil, 2022) and the current epistemology (Vartiainen, 2021), adopting the latter in this research instead of the former.

Firstly, Costa (2007) investigated teleworking from the perspective of professionals, but under the aspect of the relationship between power (contractor) and knowledge (teleworker contracted), realized that the identity of teleworkers with teleworking appears as a self-narrative for teleworkers as self-entrepreneurs. It has less to do with identifying the teleworker with his role in the organization or with the organization itself – in addition to verifying the same benefits and difficulties raised by Tremblay (2002). Nohara, Acevedo, Ribeiro, and Silva (2010) also researched teleworking under the perception of teleworkers, identifying the same order of perceived benefits and adversities.

In turn, focusing on the perspective of teleworkers managers, Nogueira and Patini (2012) reported communication problems as the main difficulty in the remote management of professionals, especially in recruitment and selection processes and in motivation, since the interaction is a crucial factor to the generation of subjective aspects of work relations such as the generation of trust, which will be the basis for feedback processes, performance evaluation and control of goals and results for companies.

Secondly, Villarinho and Paschoal (2016), researching teleworkers, their heads, and non-teleworkers colleagues from a Brazilian federal public company (Serpro), identified that teleworkers reported better professional performance and well-being at work than non-teleworkers. However, this does not mean that there were no negative points observed by teleworkers themselves in this type of work. Villarinho and Paschoal (2016) also reported differences in perception about teleworking among teleworkers, their bosses, and their non-teleworkers colleagues. This shows that organizations still need to manage to level out understandings, and, in summary, the modality still needs to mature in the organizational scope.

Thirdly, Filardi, Castro, and Zanini (2020) investigated the advantages and disadvantages of teleworking in the Public Administration of Brazil in the perception of professionals and managers of two federal agencies that adopted the work system, addressing structural, physical, personal, professional, and psychological issues, and concluded that teleworking needs a management model that makes it more adherent to the public sphere. Aderaldo, Aderaldo had reached a similar conclusion, and Lima (2017), for private initiative, in a study with interns from a multinational company that used telework as a human resources policy - there is a need to develop it as a strategically oriented practice in the organizational environment.

Finally, teleworking is not new, although its right beginning has yet to be discovered. By 1988, F. International Group PLC had 1,100 teleworkers, as per Pinel (1998). However, it has become popular with more technology and possibilities, even reaching informal professionals and businesses, as shown in OLX services offers. In the State of Rio de Janeiro, as per Torres (2020), the government moved the classes to the online platform of Google Classroom during the COVID-19 pandemic. Companies continued their projects, training, and board meetings by tele/videoconference and other free or low-cost communication tools, taking essential decisions remotely. The government tried to avoid crowding and provided ways for the population to request

financial assistance via the Internet, which was only possible in person until February 2020, when the world changed.

COVID-19 Pandemic

On 11 March 2020, WHO declared the coronavirus pandemic, the first pandemic of the XXI century. However, COVID-19 is not the first pandemic and will not be the last. In the past, some dangerous diseases greatly impacted the global population, like the Black Death/Bubonic Plague, Cholera, Tuberculosis, Smallpox, and HIV/AIDS (still without an available cure), among others (see Table 1). Some persist nowadays, and the world population still needs the vaccine (when it exists) to avoid getting it back.

Table 1*: Pandemics/Epidemics details*

Disease	Major Damage and Period
Black Death	50 million dead (Europe and Asia) – 1333 to 1351
Cholera	Hundreds of thousands of dead – 1817 to 1824
Tuberculosis	1 billion dead – 1850 to 1950
Smallpox	300 million dead – 1896 to 1980
Spanish Flu	20 million dead – 1918 to 1919
Typhus	3 million dead (Europe and Russia) – 1918 to 1922
Yellow fever	30,000 dead (Ethiopia) – 1960 to 1962
Measles	6 million dead per year – Until 1963
HIV/AIDS	22 million dead – Since 1981

Sources: Editora Abril (2004); WHO (2020); Fundação Oswaldo Cruz (2020)

In the 21st Century, it is not different: even under the advances in medicine and sanitation, new epidemics with the chance to become (or that effectively became) a pandemic emerged, as we can see in Table 2:

Table 2: *Pandemics/Epidemics of 21st Century*

Disease	Period and Geography
SARS	2002 to 2003 - China and other parts of the world
Bird Flu	2005 - Southeast Asia
Swine Flu	2009 to 2010 - North America, Europe, Oceania, and then other parts of the world
MERS	2012 to 2016 - Middle East, Tunisia and the Philippines
Ebola	2014 to 2016 - Western Africa
Covid-19	2019 -2022 - from China to worldwide

Sources: Editora Abril (2004); WHO (2020); Fundação Oswaldo Cruz (2020)

Recently, people and health entities predicted the eminence of an epidemic and suggested actions to minimize its effects. Gates (2015) and Zhang and Webster (2017) were some of them, and their

focus was on how to save lives and provide logistics, medicine, and other aspects of human health and safety. In another direction, Taylor and Metzler (2009) brought a sample of the discussion led by professionals from the Information and Communication Technologies (ICT) from 2007 to 2009. They were worried about the preparedness of organizations to continue their job and business in the context of a possible pandemic outbreak. The World Health Organization (WHO) Public Health Research Agenda for Influenza (2015) comes from the same decade and supports their concerns in the face of the risk of a new pandemic.

At the time of the Black Death or the first Cholera outbreaks, there was no teleworking. Although, there is a register of productive work from home of Isaac Newton during the bubonic plague quarantine. In 1665, while the bubonic plague spread to London and Newton was a recluse at the Woolsthorpe mansion, he observed apples falling under a tree and first thought of the law of universal gravitation. (Editora Globo, 2020).

As communications have reached the 5G era (Chen, 2020), it is now possible for robots to respond rapidly to human instructions. IoT (Internet of Things) eliminates wiring by connecting devices. Satellites and optical fiber link nations and continents, not just for multinational corporations but also for individuals.

High-tech is only available in some places, but its increasing availability and decreasing cost indicate its power and pervasiveness. Technology aids in the development and survival of businesses. Teleworking, or working remotely from the main office, is now a reality enabled by affordable high-tech communications and Artificial Intelligence (AI). AI benefits the telework of several businesses and public assistance areas, from human health, such as hospital pre-online triage by AI to diagnose COVID-19 symptoms, and epidemic tracking, such as the worldwide number of new coronavirus infections using Big Data in the Google Coronavirus Map (2020), to the support of negotiation processes between distant stakeholders via efficient video-conferencing systems such as Whatsapp, Skype, WebEx, and many others.

Only some of the population can indeed work remotely. However, the pandemic has made people and organizations exercise their flexibility to migrate rapidly to new ways of performing their jobs, using tools that were already there but still need to be under total usage. In this context, the research question arises: How is the organization's teleworking adoption taking place, and what are the positive and negative effects of teleworking before, during, and after the Covid-19 pandemic, and what improvements are necessary to have desirable conditions for Teleworking in the professionals' point of view?

Psychological Well-Being (PWB)

According to Burns (2017), Psychological well-being (PWB) is defined as “inter- and intraindividual levels of positive functioning that can include one’s relatedness with others and self-referent attitudes that include one’s sense of mastery and personal growth.” (p.251)

Ryff (1989) conceived PWB adopting six basic dimensions: (a) autonomy, (b) self-acceptance, (c) personal development, (d) life purpose, (e) good relationships with others, and (f) environmental mastery. Also, research (Ryff & Keyes, 1995; Ryff & Singer, 2002) shows that a person's PWB is affected by promising things that happen at work.

PWB has been considered a public policy objective for many governments (Burns, 2017; Beddington et al., 2008) and has driven scholars' attention in recent years (Vieira, Dias, M., Lopes, & Cardoso, 2021; Kanten & Yesıltas, 2015; Burns et al., 2015; Žižek, Treven & Čančer, 2015; Clark, Layard & Senik, 2012; Robertson & Cooper, 2010; Srimathi & Kiran Kumar, 2010; Baird, Lucas, & Donnellan, 2010; Burns & Machin, 2009; Beddington et al., 2008; Abbott et al., 2006; Ryff & Singe, 2002; Ryan& Deci, 2001; Ryff, & Keyes, 1995; Ryff, 1989). Research evidence also suggests that high levels of PWB are associated with high business performance (Robertson & Cooper, 2010).

Nonetheless, well-being may have vastly diverse implications depending on one's professional and private viewpoints. For example, well-being is defined by economists as capability and prosperity, the expansion of individual and national economic wealth (Burns, 2017). In addition, the literature on positive psychology and positive organizational behavior points out that an individual's positive psychological state influences attitudes toward the organization favorably (Luttans, 2002).

Psychological Well-Being (PWB) has been studied in various organizational contexts, such as (i) employee well-being and performance (Zizek, Treven and Cancer, 2015; Srimathi and Kiran Kumar, 2010); (ii) PWB and engagement (Kanten and Yesıltas, 2015; Robertson and Cooper, 2010); (iii) PWB across Nations (Beddington, Cooper, Field, Goswami, Huppert, Jenkins, 2008); (iv) PWB scales and constructs (Burns & Machin, 2009); (v) PWB as a mediator between the effects of resilience and mastery on depression and anxiety (Burns, Anstey, & Windsor, 2011); (vi) terminal well-being (Burns, R., Byles, Magliano, Mitchell, & Anstey, 2015); (vii) PWB and women (Burns, Byles, Mitchell, & Anstey, 2012); PWB in Health and Aging (Clarke, Marshall, Ryff, & Wheaton, 2001); (viii) the influence of the leader in PWB (Gilbreath and Benson,2004; Sy et al., 2005); (ix) PWB associated to transformational leadership (Arnold et al., 2007; Nielsen et al., 2009); (x) positive psychological capital and PWB (Luthans, 2002; Luthans, Youssef, & Avolio, 2007).

Moreover, the Well-being construct has two dominant approaches: (i) hedonic and the (ii) eudaimonic. Well-Being and Psychological Well-Being constructs are illustrated in Table 3:

Table 3: *WB and PWB constructs*

Approach	Well-Being (WB)		Psychological Well-Being (PWB)
	Hedonic	Eudamonic	
Description	focuses on happiness by defining well-being in terms of pleasure, pain prevention, lower levels of stress and satisfaction with life	focuses on the meaning and perception of the individual as a fully functioning person	the construction of psychological well-being goes beyond defining human well-being in terms of the absence of negative emotions or the presence of only happiness
Author(s)	Wright and Hobfoll, 2004; Kahneman et al., 1999	Ryff, 1989; Ryan and Deci, 2001	Ryff, 1989

Sources: Adapted from Wright and Hobfoll, 2004; Kahneman et al., 1999; Ryff, 1989; Ryan and Deci, 2001

Teleworking During Covid-19

The avian influenza outbreak in 2005 generated the first pandemic outlook in the 21st century (new outbreaks would come in 2013 and 2020). However, it was swine flu that became the first pandemic of the century recognized by WHO (Cumming-Bruce & Jacobs, 2009). A search in databases of the global scientific literature that lists the conjugated terms of telework and epidemic/pandemic shows that scientific publications on the matter began to appear because of the avian influenza outbreak and were related to the preparation of countries and organizations for conditions of teleworking during a period of social coexistence restrictions.

Eighty-seven percent of federal telecommuting interviewees said they could continue to work in the event of a disaster or other situation that displaced employees, and 66 percent of non-telecommuting said they could. Meanwhile, 74 percent of telecommuting in the private sector said they could, while only 28 percent of non-telecommuting interviewees could continue. CDW said that, since fewer private-sector employees telecommute, just 33 percent would be able to do so if their office were closed.

As a conclusion of the survey, a representative of CDW stated that executive decision-makers need to understand better the importance of having a telecommuting program to operate during situations like disasters or pandemics to ensure government and/or business continuity – adding to it the benefits of employee availability and retention, and potential cost savings, not to mention the contribution to decrease traffic and pollution in congested cities.

Taylor and Metzler (2009), for the Network World, reported that the April 2009 outbreak of H1N1 flu in the U.S. and the northern hemisphere as a whole highlighted lack of preparation for business continuity, being most businesses woefully unprepared for dealing with the business impact of a medical epidemic or pandemic. They surveyed to determine the extent to which organizations had the plan to address business continuity during a severe medical emergency and, if such a plan existed, the extent to which essential business functions would survive. Their key findings showed

that for over half the interviewees, the Business Continuity Plans (BCP) addressed a medical epidemic/pandemic either minimally (36 percent) or not at all (23 percent) and that the 2008 economic crisis decreased their ability to plan/implement/support BCP in case of an epidemic/pandemic. The companies would also have an impact after the 2009 flu outbreak to review their plans. The authors also state that business continuity and disaster recovery are areas that are easily overlooked until the calamity strikes (when it is too late) and that the capabilities to teleworking have not been implemented to their fullest extent – especially for situations of workplace closure due to infections, or schools' closures when parents need to telecommute.
Taking the example of a BCP as the one developed by Language Services Associated (LSA) for a potential 2009-2010 flu season (Biotech Week, 2009), a BCP could consist of two stages, the first the preventive stage (with measures like giving employees the option to telecommute, handing out masks for those working on-site, encouraging internet-based meetings, offering a flu shot incentive program), and the second, the full implementation of the plan, when the effectiveness of an epidemic should include a natural increase of the communication services provided by the company. These two steps indicate that a BCP must contemplate, at minimum, a vision for the company's internal environment and business market.

However, more research on telework related to pandemic situations needs to be investigated in the scientific literature. From the series of articles published in I.T. weekly journals from 2007-2009 years, we jump to Ahmed, Zviedrite, and Uzicanin (2018) when they published a systematic review of the literature on the effectiveness of workplace social distancing measures in reducing influenza transmission. At that time, the authors excluded from their review studies that considered workplace closure (or social isolation) by arguing that it was not the United States nor the WHO public health recommendation for a swine (H1N1) flu outbreak.
The modeling studies they discovered suggested that workplace social distancing techniques alone reduced the cumulative influenza attack rate in the overall population by a median of 23 percent. This measure also delayed and decreased the peak rate of influenza outbreaks. The models demonstrated, according to the authors, that the decrease in the cumulative assault rate was more evident when workplace social distance was paired with additional nonpharmaceutical and pharmaceutical therapies.

Nonetheless, the efficacy was projected to decrease with greater fundamental reproduction number values, delayed activation of workplace social distance, and reduced compliance. Ahmed et al. (2020), following their studies on telework in the context of the Influenza pandemic, found that people that experience severe symptoms and need to get away from the workplace have better chances to produce working from home who have access to telework than people that only use paid leave, and that the chances of losing flu transmission at the workplace result in more days worked for both employees working from home and healthy employees working at the workplace.

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FINDINGS AND ANALYSIS

Teleworking in Brazil before, during and after the pandemic

In Brazil, PNAD Covid-19, prepared by the Brazilian Institute of Geography and Statistics (IBGE), is the only national survey allowing detailed monitoring of teleworking in the country. Curiously, in Brazil, home office faced a boom and decline before and after the coronavirus pandemic as illustrated in Figure 6:

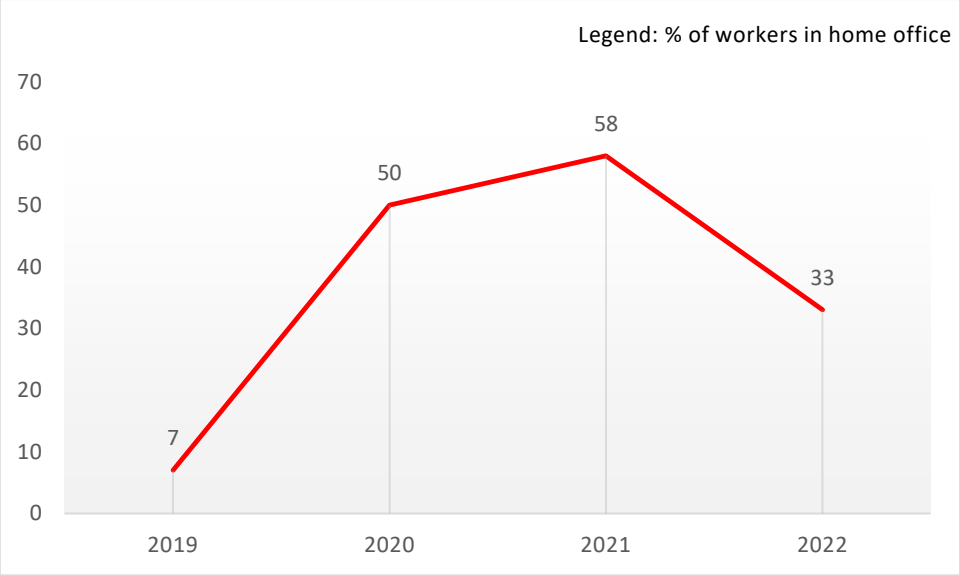

Figure 3 Percentage of Teleworking in Brazil (2019-2022). Source: IBGE, PNAD,2022

Figure 6 shows the number of workers who adopted home office grew approximately eight times during the pandemic (from Dec 2019 to Dec 2021), decreasing 57 percent in 2022 compared to Dec 2021, still 4.7 times than on December 2019.

The pandemic era was characterized by the phrase "new normal," which presented difficulties to organizations and individuals. Concerning organizations, it is necessary to recall Teece and Pisano. Shuen's (1997) original paper on dynamic capabilities for such situations of changing preparedness and management (Easterby-Smith, Lyles, & Peteraf, 2009), taking into account the unexpected need for social isolation that previous papers on pandemics were unable to evaluate as probable or even feasible. The dynamic capacities framework of private or public organizations would change depending on whether or not it favored their conditions of business/civil service continuity under subtle or disruptively altering circumstances of labor and output.

BRAZILIANS' TELEWORKING PREFERENCES

Schmitz, Leal, & Filardi (2020) investigated N=183 Brazilian professionals' preferences for teleworking. Table 4 illustrates their findings on the interviewees regarding the Positive and Negative Effects of Teleworking:

Table 4

Top 20 Positive and Negative Effects of Teleworking

	Top 20 Positive Effects of Teleworking			Top 20 Negative Effects of Teleworking		
#	Positive Effects of Teleworking in Respondents Vision (Multi-option)	Pecentage vs Total	Numbers of Respondents	Negative Effects of Teleworking in Respondents Vision (Multi-option)	Pecentage vs Total	Numbers of Respondents
1	Travel time reduction	83.61%	153	Distraction with home activities	61.75%	113
2	Cost reduction to the organization/company	78.14%	143	Professional/social isolation	59.02%	108
3	Security / Less exposition to violence	65.03%	119	Lack of facilities	49.18%	90
4	Better quality of life	64.48%	118	Cost increase for water and energy	42.08%	77
5	Flexible schedule	62.30%	114	Increased workload	37.70%	69
6	Polution reduction	61.75%	113	Tecnology still without the expected performance	33.88%	62
7	Cost reduction to the employee	60.11%	110	Fear of poor evaluation	31.15%	57
8	Having meals at home	54.10%	99	Lack of specific training for teleworking	30.60%	56
9	Oportunity to hire professionals with special needs (disabled people)	47.54%	87	Difficulty maintaining discipline during work	24.59%	45
10	Greater interaction with the family	47.54%	87	Equipment cost	21.86%	40
11	Improving productivity at work	43.72%	80	Negative impact in the career growth	16.94%	31
12	Privacy	36.61%	67	Difficulty maintaining working hours	16.39%	30
13	Concentration	34.97%	64	Lack of recognition from co-workers	16.39%	30
14	Improving quality at work	32.24%	59	Higher organization/company charge	15.85%	29
15	Silence	31.15%	57	Perceived loss of status	14.75%	27
16	Self-management (Low supervision)	29.51%	54	Motivation difficulty	14.21%	26
17	Less interruptions	28.96%	53	Psychological problems	14.21%	26
18	Less absenteeism	27.87%	51	Control difficulty	13.66%	25
19	Easy to maintain working hours	27.32%	50	Not suitable for teleworking	10.38%	19
20	Ease of maintaining discipline during work	18.58%	34	Others	9.29%	17

Note: Schmitz, Leal, & Filardi (2020). Reprinted under permission

According to Schmitz, Leal, & Filardi (2020), Table 4 shows the most frequent positive responses: “Travel time reduction” with 83.61 percent of the interviewees' choice, followed by “Cost Reduction to the organization/company” with 78.14 percent, and “Security / Less exposition to violence” with 65.03 percent. Conversely, Schmitz, Leal, & Filardi (2020) pointed out the negative effects, such as “Distraction with home activities” with 61.75 percent, followed by “Professional/social isolation” with 59.02 percent, and “Lack of facilities” with 49.18 percent. These results go in the same direction as the finds of Tremblay (2002), Rocha and Amador (2018), Costa (2007), and Filardi *at el.* (2020).

Figure 7 follows Schmitz, Leal, and Filardi (2020) and Humphrey (2005). It shows how the positive and negative effects of teleworking (see Table 4) are split between internal and external factors:

	Positive Impact	Negative Impact
Internal Factors	* Travel time reduction * Better quality of life * Flexible schedule * Cost reduction to the employee * Having meals at home * Greater interaction with the family * Privacy * Concentration * Silence * Less interruptions * Easy to maintain working hours * Ease of maintaining discipline during work	* Distraction with home activities * Lack of facilities * Cost increase for water and energy * Difficulty maintaining working hours * Motivation difficulty * Psychological problems * Control difficulty * Not suitable for teleworking
External Factors	* Cost reduction to the organization/company * Security / Less exposition to violence * Polution reduction * Oportunity to hire professionals with special needs (disabled people) * Improving productivity at work * Improving quality at work * Self-management (Low supervision) * Less absenteeism	* Professional/social isolation * Increased workload * Tecnology still without the expected performance * Fear of poor evaluation * Lack of specific training for teleworking * Difficulty maintaining discipline during work * Equipment cost * Negative impact in the career growth * Lack of recognition from co-workers * Higher organization/company charge * Perceived loss of status

Figure 4 SWOT Analysis of Teleworking under the respondent's point of view.

Source; Schmitz, Leal, & Filardi (2020). Reprinted under permission.

After careful content analysis on the recent Brazilian study on teleworking (Schmitz, Leal, & Filardi, 2020), evidence supports the existence PWB six basic dimensions, introduced in Section 2.3.7 (Ryff, 1989)

Figure 6 showed an increase of teleworking in Brazil during the pandemic and a decrease after the pandemic. Further studies are required to understand why workers prefer face-to-face rather than teleworking.

Dias, M., Lopes and Teles (2020, 2020b) reported that virtual teaching would not substitute classroom teaching eventually, pointing out (a) power failures; (b) poor internet connection nationwide; (c) poor students' engagement as possible causes for the survival of classroom teaching, for instance.

Conversely, the analysis of evidence from Schmitz, Leal, & Filardi (2020) suggests that workers perceived teleworking as the same or more productive than face-to-face work.

The literature analysis revealed, therefore, inconclusive regarding the perception of Psychological Well-Being being influenced by teleworking in Brazil. A likely cause to be investigated in future research is the mental disorders caused by the pandemic and their relationship with telework, PWB, and the return to face-to-face work.

IMPLICATIONS AND DISCUSSION

This article was designed to provide an extensive literature review on how different types of work influence employees' Psychological Well-Being (PWB), regarding the Brazilian IT industry.

Implications revealed a tendency for massive adoption of teleworking during the pandemic and an overall consistent decrease after the pandemic (See Figure 6). Regarding the Brazilian IT industry, the analysis of findings implicated a 17.4 percent growth in the sector, evidencing a boost in the market segment provoked mainly by the pandemic. The implication is that the Brazilian IT industry benefitted from the pandemic, given that the increase in teleworking activity is directly associated with the performance of the Brazilian IT industry.

Finally, this research has implications in several fields of study, such as (i) virtual education (Dias, Lopes and Teles, 2020, 2020b; Dias & Teles, 2019); (ii) virtual buyer-seller negotiations (Dias et al., 2022; Dias et al., 2022b; Dias et al., 2022c; Dias et al., 2021); (iii) retail business (Paradela, Dias, M. Sampaio, Plácido & Fernandes, 2019; Carvalho &; Dias, M., 2019); (iv) public works (Silva, Melo & Dias, M., 2022; Craveiro, & Dias, M., 2019; Dias, M., 2018; Dias, M. & Teles, 2018), for instance.

Answer to The Research Question

The answer to the Research Question: "How do different types of work influence employees' psychological well-being?" To answer the question, it is necessary to observe (a) during and (b) after the pandemics.

Firstly, evidence suggested that there is a tendency to the adoption of teleworking in the organizations after the experience of workplace closure and social isolation during the COVID-19 pandemic. Psychological Well-Being was directly affected somehow the mental health of workers. Therefore, the answer to research question (a) *during the pandemic* is that workers from the Brazilian IT industry were forced to adapt to teleworking massively, with no choice. Adapt or die. Evidence was found to support the idea that during the pandemic, PWB and mental health were affected severely by social restrictions, social isolation, fear of contamination, and uncertainty about the future, in some cases, affecting PWB and mental health caused by the "negative information which is spread through mass media repetitively can affect public health negatively in the form of nocebo effects and mass hysteria." (Bagus et al., 2021, p.2).

The answer to the research question (a) *after the pandemic* is that evidence suggests that some workers in the Brazilian IT industry declared to be satisfied with teleworking, pointing out advantages of teleworking versus face-to-face work influencing somehow PWB, such as (a) spending more time with family; (b) shorter distances to work; (c) increase of productivity due to

the reduction of endless meetings; (d) less risk of contamination with Covid-19 and variants, influencing PWB. Conversely, evidence suggests that some workers in the Brazilian IT industry declared to be dissatisfied with teleworking, preferring social contact, face-to-face meetings, pointing out advantages of face-to-face versus teleworking work influencing somehow PWB, such as (a) more productive meetings; (b) increasing networking; (c) increase of engagement and job satisfaction, directly associated with PWB. Finally, in both cases, future studies are suggested in the following section.

Future Research

Future research is encouraged to address how employees perceive teleworking affecting psychological well-being in the Brazilian IT industry, given the necessity of gaining insights into how teleworking somehow affects psychological well-being in the Brazilian IT industry, the largest Latin American IT market and the tenth largest IT market. Also, more research should be conducted on how people see the value of teleworking even after the pandemic, how that relates to PWB, and how the work comeback affects PWB.

Opportunities of appreciation should employ qualitative and quantitative methods. It is also encouraged to measure the impact of Covid-19 on teleworking. Additional studies on the nuances of teleworking in Brazil are also stimulated.

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