

Teleworking and post-pandemic digital transformation

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Teletrabajo y transformación digital post - pandemia

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ABSTRACT

The COVID-19 pandemic forced humanity to face a shocking reality where the priority was to stay safe and take care of their loved ones. However, adapting to this new reality and continuing with day-to-day life was the challenge. For many Colombian companies, it meant the end of their business, but for most, it produced a change in the way they carried out their economic activities in order to stay afloat. It is at this moment that teleworking becomes important for many sectors. In this article, the participants conducted qualitative research with an exhaustive documentary review to obtain results on three variables: the reduction in absenteeism, increased productivity with the adoption of new technologies, and the adaptation difficulties of companies with low digitalization. They concluded that after 2020, Colombians adopted new business policies where the greatest challenge was preserving the integrity of workers and maintaining confidentiality policies. It is at this moment that the correct use of technology becomes indispensable for companies and causes a change in corporate thinking with an eye to the future.

Keywords: Adaptation; Technological Change; Company; Pandemic.

RESUMEN

La pandemia COVID 19 obligó a la humanidad a enfrentar una realidad impactante en donde la prioridad era mantenerse a salvo y cuidar de sus allegados, sin embargo, adaptarse a esa nueva realidad y continuar con el día a día era el reto. Para muchas empresas Colombianas significó el final de su negocio, pero, para la mayoría produjo un cambio en la forma de realizar sus actividades económicas en aras de mantenerse a flote, es en ese momento en donde el teletrabajo cobra importancia para muchos sectores, en el presente artículo los participantes realizaron una investigación cualitativa con una exhaustiva revisión documental con el fin de obtener resultados a tres variables: la reducción del ausentismo laboral, aumentó de la productividad con adopción de nuevas tecnologías y las dificultades de adaptación de las empresas con baja digitalización, llegando a la conclusión de que después del año 2020 los Colombianos adoptaron nuevas políticas empresariales en donde el mayor reto era preservar la integridad de los trabajadores y mantener las políticas de confidencialidad, es en ese momento en donde el correcto uso de la tecnología se hace indispensable para las empresas y provoca un cambio de pensamientos corporativos con miras hacia el futuro.

Palabras clave: Adaptación; Cambió Tecnológico; Empresa; Pandemia

INTRODUCTION

The COVID-19 pandemic was a very difficult time around the world, leaving behind an unstable economy for businesses, particularly in Colombia, where many companies went bankrupt, while others experienced exorbitant growth because they distributed essential goods.⁽¹⁾ The COVID-19 pandemic has driven an unprecedented transformation in the way businesses operate. One of the most significant effects has been the consolidation of teleworking as a standard practice and the accelerated process of digital transformation in organizations across all sectors. This convergence has not only redefined workspaces, but also rethought key concepts such as productivity, work-life balance, organizational culture, and technology adoption.⁽²⁾

According to Fernando Pavón⁽¹⁾, this context clearly and precisely expresses the need to analyze in depth how teleworking and digital transformation have reconfigured business productivity, both quantitatively and qualitatively, and thus reveal the significant figures and long-term impact on efficiency, innovation, and worker well-being in companies. Therefore, the purpose of this paper is to understand, from an organizational and technological perspective, the main effects of teleworking and post-pandemic digitalization on business productivity, especially in Colombia. Understanding how teleworking and digital transformation have changed is not only important for studying the subject, but also for companies to make better decisions, create good internal policies, and prepare their leaders to face the new challenges of the world of work, which is now changing faster than ever, as Soto-Acosta⁽³⁾ states, “The pandemic forced companies to accelerate their digital transformation, making it a key tool for survival and growth in an uncertain business environment.”

Teleworking, initially driven by the COVID-19 pandemic, has become part of the “new normal” in the workplace. In countries such as Spain, the number of people working from home has increased significantly, although it remains below the European average. According to El País⁽⁴⁾, “teleworking now accounts for around 15 % of the working population in Spain, although the European average is 22 %.” This modality offers benefits such as work-life balance, reduced traffic, and access to global talent. As Batista Jiménez et al.⁽⁵⁾ point out, “teleworking has emerged as a revolutionary tool that has transformed the dynamics of work on a global scale.” However, it also poses new challenges, such as isolation, the need for technological infrastructure, and digital disconnection. Despite this, it continues to be seen as an opportunity, especially for rural areas. According to Cadena SER, “teleworking is presented as a formula for saving energy costs and promoting development in rural areas.”

According to Buitrago D⁽⁶⁾, teleworking in Colombia has experienced sustained growth in recent years. As a result, an exhaustive study was conducted, which found that this growth has occurred after the pandemic, as teleworking has allowed companies to continue with all administrative tasks while also improving productivity, well-being, and quality of life for workers. For example, a report by the National Consulting Center and .CO Internet S.A.S.⁽⁷⁾ revealed that 62 % of Colombian teleworkers claim to have improved their productivity, while 80 % value the flexibility of the remote model.

In short, these data show that in Colombia, teleworking and the use of digital tools have gone from being a temporary solution to becoming a key part of today’s work.

The scope of this work focuses on providing in-depth context

on teleworking and digital transformation in the post-pandemic era with the aim of understanding the objectives and goals achieved in both productivity and well-being at work in the organizational sphere. It also seeks to analyze how organizations work after the pandemic, based on recent studies, theses, and academic articles. Some of these studies show real experiences in technology companies and public entities, providing a clearer picture of what has worked well and the challenges that still exist.

METHOD

The study was carried out through qualitative research, studying the reality of digital transformation in companies after the pandemic in a natural context and as it occurs, interpreting phenomena from the perspective of employees involved in teleworking. The serious impact of the pandemic transformed business sectors and industries, forcing employers to plan a different work environment to meet the needs and functions of companies.

This research was developed using a qualitative approach, based on the document review technique as the main method for collecting and analyzing information. To ensure the reliability and validity of the data obtained, the guidelines proposed by Hernández et al.⁽⁸⁾ were considered, who state that “any instrument used in data collection in scientific research must be reliable, objective, and valid; if any of these elements is not met, the instrument will not be useful and the results obtained will not be legitimate.” In accordance with this, the participants conducted a thorough review of scientific and academic documents, ensuring compliance with these methodological criteria.

The collection of information was based on a systematic search of articles in databases recognized for their academic rigor, such as Scielo, DOAJ, Redalyc, Biblat, Dialnet, and Google Scholar. Specialized sources on issues related to the importance of teleworking in the post-COVID-19 context were consulted, paying special attention to the structural and functional changes implemented by Colombian companies to adapt to this new work reality.

The document analysis was guided by the approach outlined by Martínez Corona et al.⁽⁹⁾, who emphasize that “considering the traditional emphasis placed on document analysis, it should be defined as a set of operations carried out in order to represent, either the content or the form of a document, in a record for later consultation or retrieval.” This process allowed the information found to be organized, classified, and interpreted in a rigorous and systematic manner.

In addition, the concept of teleworking was incorporated as proposed by Lalama-Franco et al.⁽¹⁰⁾, who define it as “a way of performing work activities through the use of technological devices, in such a way that it does not require employees to travel to the company.” This perspective was essential to understanding the context in which Colombian companies implemented this modality and adapted their operational processes.

Finally, the research focused on analyzing three fundamental aspects derived from the implementation of teleworking: (1) the reduction of absenteeism, (2) the increase in productivity in companies that adopted new technologies, and (3) the difficulties in adaptation experienced by organizations with low technological infrastructure or limited digitization. These points constitute the central axis of the analysis and evaluation of the findings obtained during the study.

The qualitative research focuses on the investigation carried out through a structured and validated survey of residents of the city of Medellín who adopted teleworking. The data was collected through telephone calls, based on a city directory, Restrepo et al.⁽¹¹⁾.

The research identified the need to implement teleworking as an innovative alternative for companies seeking new forms of production and work organization. In this case, input for the application of teleworking techniques in companies is essential, and networking is undoubtedly the most important factor.

As a study says, at some point we all start to become part of networks, whether among friends, family, or coworkers, etc. The emergence of the internet has led to new ways of working and coordinating, replacing traditional forms of command and control and focusing on work where individuals schedule their own hours and organize themselves to complete the tasks assigned by companies.⁽¹⁰⁾

Consequently, citizens must be prepared for digital transformation, with the necessary skills and in a creative and appealing way, since information technology will be used in companies in all functional areas, thus providing the opportunity to develop the skills acquired and ensure that salary compensation is reflected in those who do not possess them.

The approach of a study was taken as a reference, who argues that “teleworking requires specific training in soft skills such as assertive communication, teamwork, empathy, and flexibility, which must be reinforced from the university stage. Developing these skills is particularly important in teleworking, as reducing physical interaction makes it necessary to find alternatives to foster social relationships both at work and in everyday life.” This statement guided part of the analysis toward the need to strengthen these skills, particularly in contexts where face-to-face social interaction is limited.

The challenges and limitations of remote work were also considered, especially when it is not carried out in a disciplined and organized manner. In this regard, a study warn that “when working at home, other tasks such as housework, answering the phone, or dealing with unexpected visitors cannot be neglected. These situations can create distractions, lack of concentration at work, and interruptions in virtual meetings (...), which can cause stress for workers, as they do not know how to deal with all these activities that arise at the same time.” This perspective allowed us to identify the importance of establishing organizational policies that support workers in designing appropriate work environments at home, in order to reduce stress factors and increase productivity.

The analysis also incorporated the results of the study conducted by Morelos-Gómez et al.⁽¹²⁾, who applied a descriptive-analytical methodology to twenty-six (26) tourism companies in Cartagena, with the aim of evaluating the implementation of telework in terms of organizational innovation. According to their findings, “the telework methodology is a modality that is in line with innovation, given that organizations tend to reduce operating costs in order to generate greater competitiveness.” This approach made it possible to explore the economic and strategic impact of telework in different sectors, especially those seeking to adapt to contemporary technological dynamics.

Finally, consideration was given to the reflection of Camacho Solís⁽¹³⁾, who emphasizes that “the temporary and financial reduction in worker commuting implies better use of the working day and a true work-life balance.” This perspective

complements the idea that teleworking not only transforms organizational processes but also improves workers’ quality of life, provided it is implemented in a responsible and structured manner.

RESULTS AND DISCUSSION

The COVID-19 pandemic caused an unprecedented acceleration in the adoption of teleworking and digital transformation in various economic sectors. During the period 2020–2022, many companies chose to implement new technologies that allowed them to maintain operational continuity, even without prior preparation. According to Patiño⁽¹⁴⁾, “they had to resort to the use of digital tools and implement new customer service strategies in order to mitigate the negative effects on the business sector”. This new way of working, known as home office, was defined as a form of remote employment that sought to create a balance between work and personal life, improving quality of life and having a positive impact on business productivity.⁽¹⁵⁾

Limited internet coverage in rural areas made it difficult for many companies to comply with restrictions such as teleworking and virtual education, highlighting that digital infrastructure was key to resilience during the pandemic.⁽¹⁶⁾ In contrast, companies located in urban areas with better connectivity reacted more quickly and managed to adapt their digital processes efficiently.

During the pandemic, companies in Colombia also faced financial transformations, driven by mandatory lockdowns and the need to reduce physical contact. This accelerated the implementation of online payment and purchasing methods, which particularly benefited companies that already had digital platforms and nationwide logistics systems. According to a report by the Colombian Chamber of Electronic Commerce⁽¹⁷⁾, during the second quarter of 2020, there was a 230 % growth in digital sales, which was one of the main drivers of formal commerce during the crisis.

In the wake of the pandemic, many Colombian companies temporarily or permanently closed their physical stores, accelerating the migration to digital channels such as websites and social media to continue their sales. This transformation also gave way to the intensive use of tools such as Instagram, Facebook, and WhatsApp Business, where brands found a new space to interact with customers. In addition, influencer marketing established itself as a key strategy, as influencers helped amplify the visibility of products and services amid lockdown. According to the Colombian Chamber of Electronic Commerce⁽¹⁷⁾, more than 60 % of MSMEs began using social media as their main sales channel during mandatory preventive isolation (ccce.org.co).

During the pandemic, many Colombian MSMEs quickly migrated to social media as commercial channels, with WhatsApp, Instagram, and Facebook being the most widely used. According to the OEI report, 66 % of companies in the country use social media as a commercial channel and for customer interaction, reflecting an accelerated digital transformation in the way business is done. This trend emerged as a practical solution to the closure of physical premises, positioning digital platforms as the main means of direct sales and service.

Reduction in absenteeism

Teleworking brought with it several advantages, such as increased productivity, flexible hours, greater concentration,

and, especially, cost reduction, thanks to the elimination of commuting time between home and the workplace.⁽¹⁹⁾ These conditions contributed to a decrease in absenteeism by facilitating operational continuity and allowing workers to deal with unforeseen events without neglecting their duties.

However, this modality required workers to develop new skills to perform their duties effectively, different from those required in face-to-face environments. Remote work and the intensive use of information and communication technologies (ICT) led to the acquisition of digital skills, adaptability to the virtual environment, and time self-management.⁽²⁰⁾

During and after the COVID-19 pandemic, teleworking intensified the need for technological resources, placing additional physical and mental demands on employees. According to López et al.⁽²¹⁾, “techno-stress has symptoms similar to those of stress, including fatigue, insomnia, depression, headaches, and muscle tension, with the first symptom being a change in character (anger) or refraining from using technological devices”. These risk factors derived from the use of ICTs generated risk factors in the workplace, which were related to production processes and, above all, psychosocial risk factors, causing various pathologies that led to absenteeism in companies.

Similarly, Sierra et al.⁽²²⁾ indicate that, during the pandemic, the global working population faced an excessive workload caused by an increase in responsibilities, failure to comply with disconnect times, and an imbalance in relation to routine family activities carried out at the same times, generating a perception of high levels of work-related stress.

The figure 1 shows the advantages and disadvantages of working from home, presenting the different points of view involved.

Analyzing the image above, it can be seen that teleworking presented more advantages than disadvantages. This is related to the abrupt change involved in moving from face-to-face work to total confinement, coupled with the fear of infection or death from an unknown virus. Many companies found themselves needing to restructure their processes and quickly adapt to new

hiring and labor management models, which drove innovative ways of operating and remaining economically active.

Increased productivity with the adoption of new technologies

Since 2008, when Law 1221 was enacted with the aim of “promoting and regulating telework as a means of generating employment and self-employment through the use of technologies of the information and telecommunications – ICT”,⁽²⁴⁾ this modality is formally recognized as a viable employment alternative in the country. This regulation has sought to promote the use of emerging technologies in the Colombian business sector, thereby promoting labor and digital transformation processes.

In this regard, Ayala et al.⁽²⁵⁾ assert that the use of telework and ICTs allows “organizations to improve and increase the productivity and quality of life of their employees and contribute to the country’s digital transformation process”.

The global health crisis caused by COVID-19 forced Colombia and the rest of the world to make drastic changes to their working conditions. Initially, the priority was to safeguard workers’ lives, which led to an accelerated shift toward working from home. Companies had to quickly implement new work models and agreements that protected both employees and their families without compromising operational continuity. From the perspective of a person working from home, both advantages and disadvantages were identified. Among the former are an increase in job quality, greater flexibility in the organization of the workday, and, consequently, an increase in productivity.⁽²⁶⁾

This process highlighted structural and preparedness limitations in many productive sectors, both public and private. Deficiencies in physical infrastructure, legal regulations, technological capabilities, and occupational health conditions became apparent, posing a challenge to maintaining productivity levels.⁽²⁷⁾

Although it is said that teleworking contributes significantly to improving people’s quality of life and general well-being, it also offers benefits such as stress reduction and improved

	Possible advantages	Possible disadvantages
For the Individual	<ul style="list-style-type: none"> • Improves performance and productivity • Less time commuting to work • Greater autonomy • Less work stress • More time with the family • Unique possibility of entering the labor market (people with small children, people with disabilities, etc.) 	<ul style="list-style-type: none"> • Fewer opportunities for work relationships • More stress related to the home • More professional profession • Mess job security
For the organization	<ul style="list-style-type: none"> • Higher productivity • More varied and wider job offer • Savings • Office space savings • Less absenteeism • Flexible company 	<ul style="list-style-type: none"> • Challenge to the possibility of control and motivation of teleworkers • Less committed employees • Loss of teamwork
For the society	<ul style="list-style-type: none"> • Less travel/displacement • Less pollution, traffic congestion, and accidents • Less labor discrimination 	<ul style="list-style-type: none"> • Individuals more isolated from social institutions (societed autisty)

Figure 1. Possible advantages and disadvantages of teleworking⁽²³⁾

work and family relationships. That is why Acosta⁽²⁸⁾ states that “teleworking is a work model designed to promote people’s well-being and positively impact their work performance”.

Adaptation of technologies and digitalization after COVID-19

During the COVID-19 pandemic, many MSMEs were forced to rapidly adopt digital technologies to ensure their survival. Although we clearly live in an era of constant technological evolution, the COVID-19 pandemic significantly accelerated this process, driven by the urgent needs that arose in that context.⁽²⁹⁾ Resistance to change and the implementation of new technologies, work methodologies, and training processes was one of the main challenges faced by many organizations. However, these aspects became fundamental pillars for moving forward in a new era that basically forced companies to transform themselves in order to survive. “This transformation involves structural changes that go far beyond a product or a technology department; it is a change in the culture of the entire company and its employees.”⁽³⁰⁾

According to a study by ECLAC, lockdown and social distancing measures drove the use of the internet and digital tools such as teleworking and e-commerce in Latin America. “The significant impact of COVID-19 restrictions on Internet adoption, digital tool use, and teleworking”.⁽³¹⁾ Although this digital push was significant, the pace of adoption remained uneven across sectors, as factors such as age and educational level affected the intensity of technology use.^(32,33,34)

Companies that fail to adapt technologically risk falling behind those that have modernized their processes. “The gap between those who have embraced digital transformation and those who have not is widening at an alarming rate”.^(32,35,36)

A Microsoft study revealed that 8 out of 10 SMEs in Colombia made some technological changes to survive, especially by adopting tools such as video calls, remote work, and cloud solutions. However, only 66 % felt prepared for technological adoption, and many were slow to adapt effectively. News Center Microsoft Latin America.^(33,37,38)

During the pandemic, many companies faced the need to make quick digital decisions while managing operational and financial uncertainty.

In this context, “concurrent digital strategies, such as e-commerce and automation, proved essential to sustaining activities during the COVID-19 crisis”.⁽³⁴⁾ These decisions enabled effective adaptations in sectors such as manufacturing, healthcare, and education.

CONCLUSIONS

Remote work and the introduction of new technologies during the pandemic brought with them new work alternatives, allowing people to continue performing their duties safely from home. It promotes work flexibility and facilitates the possibility of sharing quality time with family, friends, and coworkers, albeit virtually. However, the abrupt shift to this modality also generated various emotional and coexistence issues, effects of prolonged confinement, which caused high levels of stress, anxiety, and mental overload, resulting from the lack of separation between work and personal life.

Despite these challenges, teleworking has established itself as a key strategy for ensuring business continuity during the pandemic. Its implementation has highlighted the need to

strengthen digital skills, mental health, and disconnect policies in order to achieve a sustainable balance between productivity and well-being.

The research showed how the COVID-19 pandemic not only transformed the way work is carried out in Colombia, but also marked a turning point in organizational culture, especially in relation to the incorporation of teleworking and the intensive use of new digital technologies. Companies that managed to adapt quickly to this new model by implementing virtual platforms, collaborative structures, and training in soft and digital skills experienced an increase in productivity and a significant reduction in absenteeism.

However, not all organizations responded with the same effectiveness. MSMEs with low levels of digitization faced greater difficulties, revealing the urgent need for public policies that promote technological inclusion and the strengthening of digital capacities, especially in traditionally lagging sectors. Added to this is the challenge of technostress, which has become a new psychosocial risk in the workplace, affecting the physical and emotional health of many workers.

From an organizational perspective, the results suggest that teleworking, when well implemented, contributes not only to operational efficiency but also to a better work-life balance. However, it also requires a commitment from companies to design healthy work environments with clear protocols for disconnecting and managing time. It is therefore concluded that the future of work in Colombia will be hybrid, digital, and more flexible, but will require institutional support, ongoing training in digital and soft skills, and an organizational strategy geared toward sustainable human development in an increasingly changing and competitive environment.

Trends for future research

- Longitudinal evaluation of productivity in hybrid models: it is necessary to measure the medium- and long-term effects of telework combined with face-to-face work in terms of productivity, mental health, and job turnover.
- Sectoral studies on digital divides: analyzing in greater depth how technology adoption varies across economic sectors, geographic regions, and company sizes will enable the design of differentiated digital transformation strategies.
- Impact of teleworking on gender equality and family responsibilities: research how remote work has influenced the distribution of household tasks, especially in households where women take on multiple roles.
- Analysis of digital leadership: explore the skills that business leaders need to develop in virtual contexts to maintain commitment, motivation, and organizational culture.
- Design of public policies for the digitization of MSMEs: a state agenda is needed to facilitate access to technological tools, credit, training, and support for companies that have not yet begun their digital transformation process.

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The authors declare that they have no conflict of interest.

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