

# Handbook of Research on Sustainable Development Goals, Climate Change, and Digitalization

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## Chapter 32

# Teleworking and Information Security Management in Commercial Sector Companies

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### **ABSTRACT**

*Currently, working conditions have been evolving continuously, which makes it necessary to incorporate teleworking as a means of support to fulfill the tasks entrusted. However, this type of employment brings with it vulnerabilities within companies that are not prepared for such a situation. For this reason, a teleworking model is proposed to improve the management of information security in organizations in the commercial sector. This research is of a basic type with a non-experimental design and correlational level, with a quantitative approach, the survey technique, and a questionnaire was used as an instrument that was applied to 70 workers in the commerce sector. The results show that 54.29% consider the organizational change in companies as deficient, 62.86% indicate the use of technologies as deficient, and 84.29% consider that the level of confidentiality of the information is regular. These results reflect that information security management must be implemented to provide greater reliability, integrity, productivity, control, and protection to teleworking processes.*

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## ***Teleworking and Information Security Management in Commercial Sector Companies***

### **INTRODUCTION**

Today the expansion of COVID-19 has caused a strong impact on the labor aspect, therefore it is necessary for companies to adapt to these changes, being essential to put teleworking into practice to maintain their competitiveness. According to (Buitrago, 2020), teleworking makes it possible to work remotely, in order to reduce costs in the company. In addition (Valencia, 2018) maintains that telework allows citizens with disabilities to have the opportunity to be inserted in the labor sector, this being a special way of providing services. For this reason, (Godoy, 2011) mentions that teleworkers require knowledge and intensive use of information and communication technologies (ICT) in the development of their activities. However (Peralta et al., 2020) indicates that the effect of Teleworking in business management can be positive or negative, depending on whether the company has the minimum requirements for its proper execution. Therefore, to ensure that telework is implemented correctly, changes must be carried out in the organization of the company, such as the implementation of machinery and procedures to prevent obsolescence from gaining ground; in addition to teaching methodologies on the efficient use of ICTs in order to obtain a positive impact on business human talent.

This crisis due to the pandemic has changed the employment situation of people, which leads to work outside the company on a mandatory basis, which could cause vulnerability in the data of the organizations, for this there is the security management of the information, taking into account that the most valuable thing for industries is information and as such, it must be correctly secured together with technological assets that guarantee its availability when required, that it is only accessible to authorized persons and devices, taking care that the information is not modified by third parties (Carvajal et al., 2019). The ease of connecting to the network has made it possible for users to share resources and information, which also represents an increased risk of data vulnerability, for this reason it is necessary to implement measures to ensure the confidentiality of information in the organization (Vega, 2012) Therefore, it is important to protect the information, but also to ensure its availability. Considering this approach to information security, it is necessary to take into account three main elements that are: confidentiality, integrity and availability (Rodriguez et al., 2020).

It is important to supervise the use of ICT by the employer and thus effectively develop this new work approach, for this the teleworker has the right to training on information security, data protection and confidentiality, in this way ensures efficiency in the provision of services (Culqui & González, 2016). Focusing on the correct security management, telework will be carried out optimally, therefore since the company decides to apply this work modality, it must propose changes in its organizational culture related to the way in which the organization carries out its activities, the relationship between employees and bosses, the degree of autonomy in decision-making, and personal expression (Garay, 2015).

A study carried out in Bolivia by (Duran, 2020), analyzed the physical space of the worker and the distractions that hinder their concentration to continue with work activities during the pandemic, taking into account that their development is related to family coexistence. You must define working times, respect the physical space of the teleworker, reach family agreements and share the benefits of this modality, to build a balance in work and family life. According to (Silva & Li Bonilla, 2020) the substantial decrease in physical space reduces the carbon footprint, allowing the worker to develop from a more comfortable environment, thanks to the use of the internet that allows connection from anywhere, facilitating execution of the tasks entrusted.

In the research of (Valero & Riaño, 2020) in Colombia, it indicates that teleworking is integrated into its current legislation, for this reason the teleworker enjoys protection if damage to health occurs

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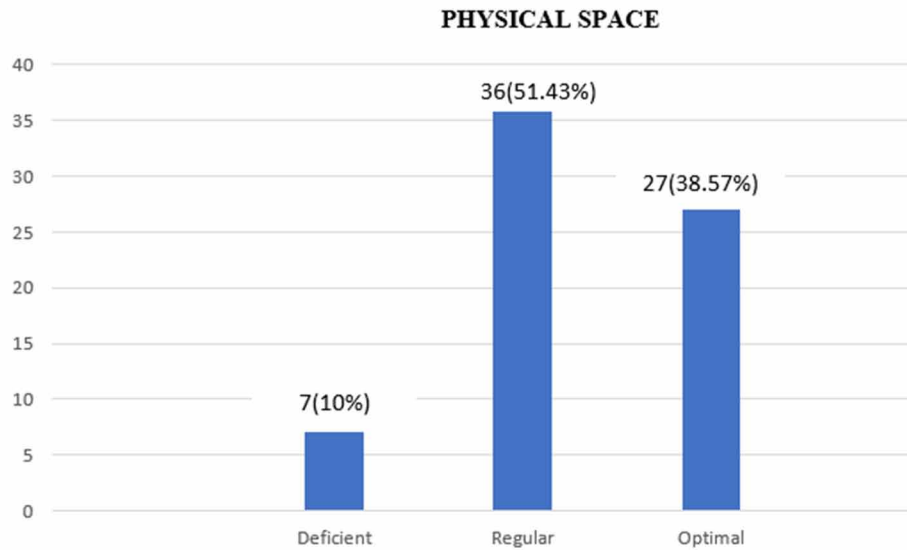
due to occupational risks, consequently it is Employer's obligation to apply a Occupational Health and Safety Management System, in this way it must have strategic objectives so that all this influences a new organizational culture. Basically, the main reforms that companies must carry out are: technological innovation, information management, the reinforcement of physical and mental health programs, and measuring the impact of teleworking on the system.

A study carried out in Argentina by (Osio, 2015) indicates that it is necessary to create regulations that allow controlling important aspects of the risks when teleworking, it is necessary to take care of and avoid the abuse of teleworkers. In this sense, a legal framework must be developed that benefits both and that allows teleworkers to guarantee their health and safety during their work activities. Argentina has made important progress in the legal aspect, thanks to the government's vision, added to the support of large technology companies. In this way, we see how a robust legal framework emerges, which has not been limited to just giving space to telework, rather, it has addressed aspects such as: health, safety and prevention.

A report developed in Spain by (Agudo, 2014) concluded that labor flexibility is essential and positively affects business results, the introduction of ICT increases productivity within the organization, therefore teleworkers see great advantages in this practice which motivates them to achieve their work goals effectively.

In the Dominican Republic, teleworking served as a necessary tool to carry out work activities in public administration companies, however, they had complications such as the lack of internet, electricity, computers, tablets or telephone, in addition to a lack of knowledge about the efficient use of ICTs that caused deficiencies in carrying out work activities due to the pandemic (Arias, 2021). In Spain, an analysis of the different occupations that exist in companies showed that 30% of employees could telework, therefore, there is still a great margin for improvement in the use of this work modality because its potential increase is unequal since workers with a lower educational level have greater difficulty in being able to benefit from this form of work (Anghel et al., 2020). In Ecuador, it was proposed to apply a teleworking model to organizations, both public and private, facilitating innovation and providing competitiveness tools. Despite this, the lack of knowledge in information technology in some sectors and resistance to change are barriers to its correct implementation (López & Sisa, 2020). In Chile, teleworking was adopted by organizations, however, some workers did not have telework skills and space at home to work. However, studies have reported that this type of employment in confinement increased different work stressors and puts the desire to telework in the future at risk (Ramírez et al., 2020).

In Peru, a high percentage of companies had to opt for teleworking due to the pandemic, but the lack of technological tools, internet connectivity, work space; Likewise, personal difficulties at home and resistance to change make it difficult to carry out this type of employment (Quispe & Fernández, 2021). This resulted in teleworking not being able to expand optimally, as well as a lack of equal opportunities for all workers. However, the state has been promoting public policies to regulate teleworking, for this it signed a national pact with regional governments, business associations, companies and civil society (Valencia, 2018). For this reason, the use of information technologies is a fundamental point to develop this type of employment. In this sense, the objective of the research is to propose a teleworking model to improve the management of information security in organizations in the commerce sector, which contributes to enhancing productivity through the learning of information technologies that provide resources for the change of the organizational culture ensuring a correct use of this work modality within the companies.

**Teleworking and Information Security Management in Commercial Sector Companies***Figure 1. Physical space dimension**Source: own elaboration*

This article describes the importance of teleworking and information security management for the improvement of remote tasks, which includes the development of technological knowledge, as well as being a contribution to companies that choose this modality, and for the development of teleworkers who cannot physically move to a workplace.

**METHOD**

This research is of the Basic type with a non-experimental design and correlational level, with a quantitative approach, whose sample is made up of 70 workers, through a simple random sampling. The technique used was the survey and as an instrument a questionnaire was used about the independent variable telework with its dimensions Physical space, Organizational Change and Use of ICT with a total of 18 questions and the dependent variable Information security management with the Confidentiality and Availability dimensions with 18 questions. The measurement scale used was Likert with a Cronbach's Alpha coefficient of 0.886.

**RESULTS**

The questionnaire was applied to a total of 70 workers of a company, based on the results the following is presented:

Figure 1 shows the results about the physical space dimension of the independent variable telework, 51.43% indicate that their level of physical space is regular, 38.57% consider it optimal, and 10% deficient.

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Figure 2. Organizational change dimension

Source: own elaboration

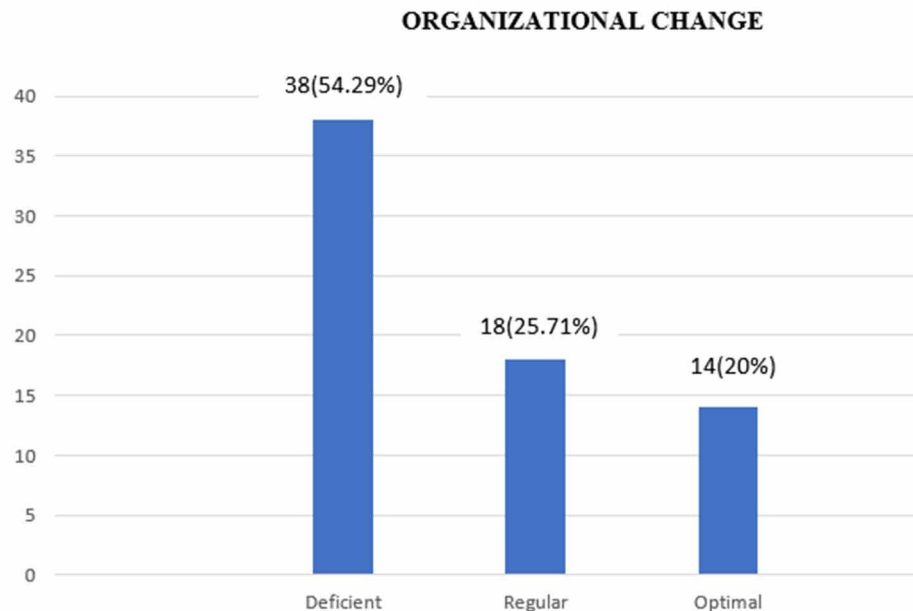


Figure 2 shows the results about the organizational change dimension of the independent variable telework, 54.29% indicate that their level of organizational change is deficient, 25.71% consider it regular and 20% optimal.

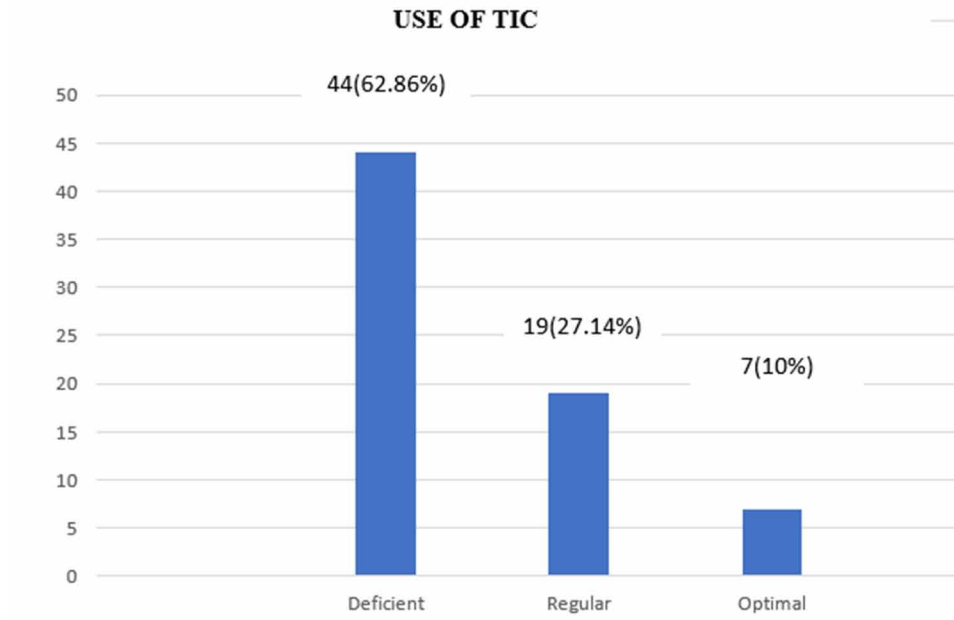
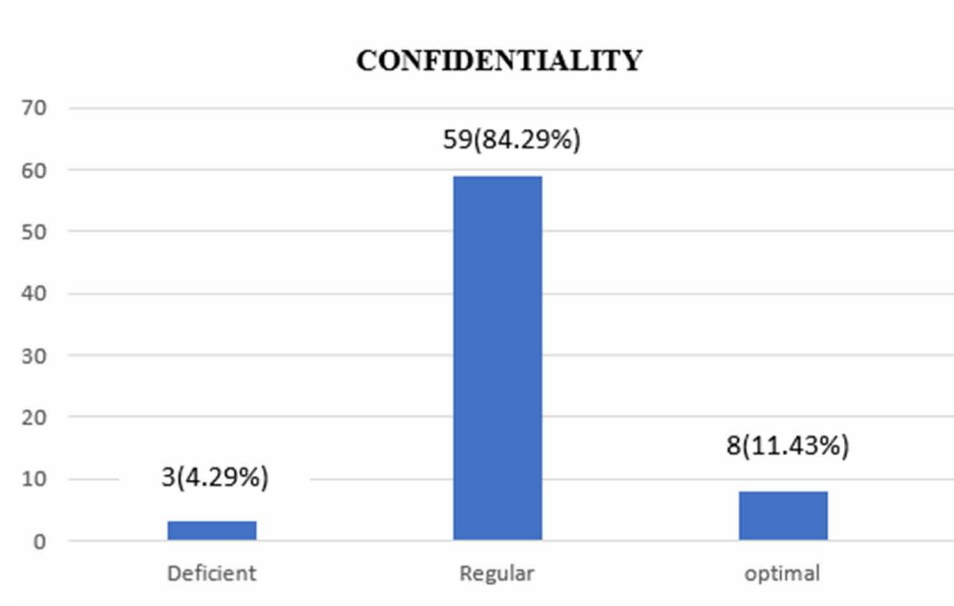
Figure 3 shows the results about the ICT use dimension of the independent variable telework, 62.86% indicate that their level of ICT use is deficient, 27.14% consider it regular and 10% optimal.

Figure 4 shows the results about the confidentiality dimension of the dependent variable Information security management, 84.29% indicate that their level of confidentiality is regular, 11.43% consider it optimal and 4.29% deficient.

Figure 5 shows the results about the Availability dimension of the dependent variable Information security management, 88.6% indicate that its level of availability is regular, 11.43% consider it optimal and 4.29% deficient.

## PROPOSAL

Based on the results of the survey, in the figure 6, the following teleworking model is proposed to improve the management of information security in organizations in the commerce sector, which helps us to evaluate the real state of this sector and then obtain ideal results.

**Teleworking and Information Security Management in Commercial Sector Companies***Figure 3. Assessment of ICT use**Source: own elaboration**Figure 4. Level of confidentiality of workers**Source: own elaboration*

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Figure 5. Assessment of the availability dimension

Source: own elaboration

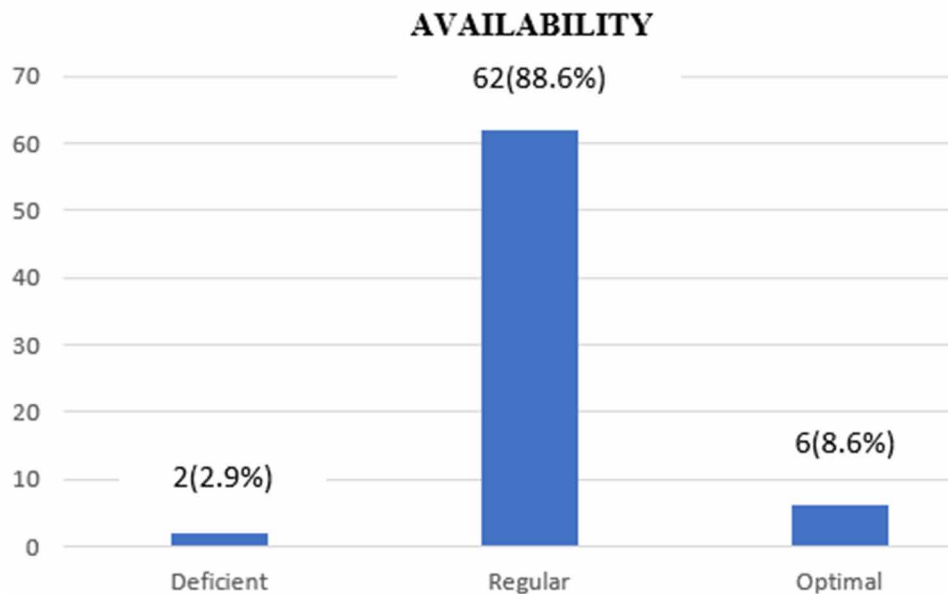
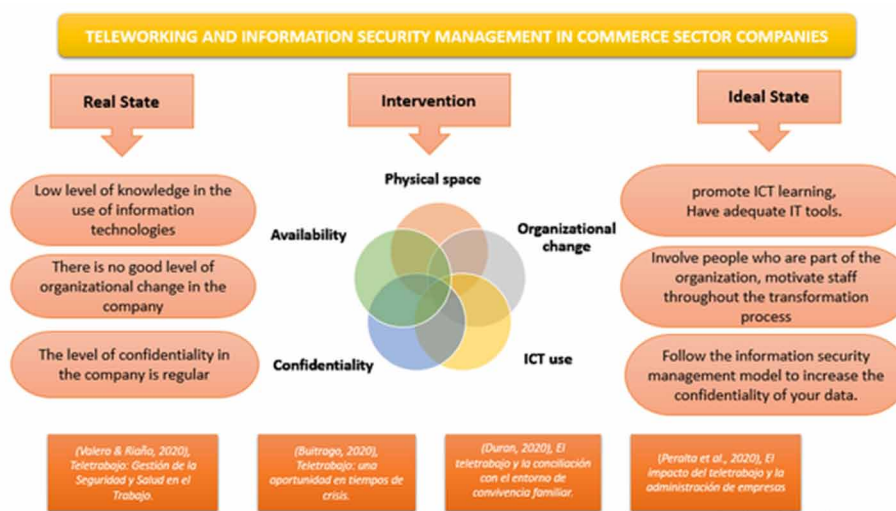


Figure 6. Teleworking and Information Security Management Model

Source: Own elaboration



**DISCUSSION**

In figure 1, 51.43% indicate that their level of conformity in their physical space is regular, this shows



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great discomfort in the workers, generating demotivation, stress and an emotional imbalance. Which agrees with (Duran, 2020) & (Silva & Li Bonilla, 2020), who point out that the physical space in which workers develop must be respected, in this way the employee will be able to balance his family and work life contributing to the correct fulfillment of their tasks. Also (Ramos et al., 2020), considers that there are difficulties in separating the work space and family, which generates a mental disconnection in work problems. For this reason, the worker must feel comfortable in the space in which he works, without feeling that his work hours are violated.

In figure 2, 54.29% indicate that the level of organizational change is deficient, showing that the company must improve its management capacity and get involved together with the worker, to define the changes that need to be implemented. Which agrees with (Garay, 2015) & (Valero & Riaño, 2020), who point out that organizational change is essential for the development of telework, adaptability to change is necessary by implementing a strategic plan that supports them to meet the objectives labor. For (Martinez et al., 2021), it is essential to strengthen the capacity for teamwork, emotional management and respect for the decisions of the organization, such is the case, of the great challenge that organizations in the area of health to manage the Covid-19 pandemic; following international guidelines to alleviate the pandemic, protect health and prevent the spread of the outbreak.

In figure 3, 62.86% indicate that their level of ICT use is deficient, showing that there is a lack of adaptation to technology, which prevents workers from performing their tasks efficiently. Which coincides with (Godoy, 2011) & (Agudo, 2014), who point out that introducing the use of ICT increases productivity within the organization, this being a great advantage for workers to develop their activities. In addition (Ramirez & Chuquillanqui, 2016) mention that thanks to new information technologies the employer can assume the same level of control and supervision that they have with an ordinary worker.

In figure 4, 84.29% indicate that the level of confidentiality is regular, which means that the company needs to implement security measures with which data protection is ensured, therefore, the training of workers is needed. Which agrees with (Vega, 2012) & (Culqui & González, 2016), who point out that to ensure that confidentiality is not violated in the organization, information security management measures must be applied, which gives the reliability of the processes. Likewise, (Barham, 2014) affirms that emphasis should be placed on the availability and confidentiality of the information, one way is the application of privacy policies on the use and treatment of personal information that is collected or generated through the site website of a company, covering user information, information to third parties and user rights over their information.

In figure 5, 88.6% indicate that the level of availability is regular, which shows that the company has not implemented mechanisms so that the services are available, it continues causing the processes to be slow and therefore does not contribute to the good performance of activities. This coincides with (Carvajal et al., 2019) & (Rodriguez et al., 2020), who point out that availability is a key element because it is essential that the information is available at the time it is required. In the same way, it coincides with (Vega, 2012), who points out that the information must be accessible to be used at the request of an authorized third party or at the request of external or internal users of the institution.

## **CONCLUSION**

The proposal of this research allows us to ensure that teleworking and information security management present a positive relationship in the results of work in a virtual way. Which helps telework to be a neces-

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sary tool in labor, economic and social transformation, thus becoming a phenomenon of development in the organization of work.

Likewise, through the union of telecommunications with the automation of offices, telework allows the decentralization of work in the office, with which employment in rural areas can be guaranteed, and thus allow a better distribution of the population. Teleworking changes the corporate structure, in addition, it brings advantages at an economic, behavioral and social level for all members who use this modality. This study highlights the benefits of teleworking for vulnerable people in society, since this modality provides opportunities for both personal and professional growth.

On the other hand, it should also focus on the training of workers for the use of information technology since, according to the study carried out, many workers still do not feel capable of carrying out tasks remotely, evidencing a lack of knowledge that allow to rely on these technological tools for the development of this modality.

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