

The Impact of Digitalization On the Fundamental Rights of Public Employees in Spain

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Abstract. In this work, from an organizational perspective and with an exploratory approach, we address the evaluation of the impact of digitalization on the fundamental rights of public employees in Spain. Specifically, its objective is threefold. Firstly, it aims to gather and analyse general information on the relevance that digitalization is having in different areas of the organisation, on the priority of the different elements that make it up, on its degree of development and on the difficulties in its implementation. Secondly, it analyses its impact on communications and on the right to one's own image, on the protection of personal data and on the right to disconnection. Thirdly, it identifies the new occupational risks (physical and psychosocial) that it entails. The paper concludes by proposing some actions that should be carried out to preserve fundamental rights in the organizational context.

Keywords: digitalization, fundamental rights, public employees, Spain

1 Introduction

The digital revolution has broken into our personal and professional lives. Predictions of what its global impact would be like have previously unknown contexts in the social, labour and economic dimensions. Today, we are already immersed in the digital era, experiencing many of the advances for which some have coined the term new new technologies (Holtgrewe, 2014). The cloud, big data, geolocation, the internet of things, learning machines, etc. are already among us. The digital transformation includes the profound change that is taking place in society and industry through the use of digital technologies (Agarwal, Guodong, DesRoches; Jha, 2010). The digital transformation refers to the process of adopting digital tools and methods by an organization, generally those that have not included the digital factor as part of their core activities or that have not kept pace with the change in digital technologies (OPSI-OECD, 2019).

In the field of labour relations, the digital transformation affects, or may affect, areas such as employability and training, working time, the reconciliation of work and personal life, the control of employee activity through digital media (Rodríguez Fernández and Pérez del Prado, 2017), and even the very definition of the employer-employee concepts. All this requires a rethinking adapted to the new circumstances. Its impact on the new business models, on the singularities of the internal relations between people in organisations, as well as those with customers, on data privacy and communications and, of course, on the creation and destruction of jobs is undeniable, although in this last issue there is no consensus on the positive or negative nature of the final balance of employment that awaits us (European Parliament, 2015).

Organizational and management structures are adapting to the new reality. Probably among their most visible aspects are increased flexibility and fragmentation of work, changing methods of monitoring

work, recruitment strategies and the way in which new skills and training needs are identified and met. At the same time, the digital transformation has raised issues of legal liability, data protection and rules of safety at work. Collective bargaining is also affected, in the sense that it has to take into account new aspects brought about by new technologies, such as work-life balance, the intensification of work arising from electronic devices, opportunities for training and participation in the decision-making process (European Union, 2017). The digital transformation is also inducing significant changes in the necessary work skills (European Parliament, 2015), as workers will need both generic and specific skills (e-skills) to perform their tasks. However, it is estimated that a significant part of the population lacks basic skills. In addition, it is anticipated that new requirements within the set of generic skills, such as the ability to collaborate virtually and to filter information, will be indispensable. Similarly, it will be essential to be sufficiently motivated to learn and adapt to new knowledge through training methods that will evolve in parallel.

This digital transformation requires resources of various kinds. From the most quantitative, such as financial resources, to others of a qualitative nature, such as human capacities and those related to the legal coverage it demands. The speed of progress during this transformation is not necessarily balanced with the pace of availability and implementation of these resources in all areas and, consequently, dysfunctions that break the balance between the two speeds can sometimes occur. In this sense, there is a rational concern about how digitalization is affecting the fundamental rights of workers.

In this work, from an organizational perspective and with an exploratory approach, we address the evaluation of the impact of digitalization on the fundamental rights of public employees in Spain. Specifically, its objective is threefold. Firstly, it aims to gather and analyze general information on the relevance that digitalization is having in different areas of the organisation, on the priority of the different elements that make it up, on its degree of development and on the difficulties in its implementation. Secondly, it analyses its impact on communications and on the right to one's own image, on the protection of personal data and on the right to disconnection. Thirdly, it identifies the new occupational risks (physical and psychosocial) that it entails. The paper concludes by proposing some actions that should be carried out to preserve fundamental rights in the organizational context.

2 Digitalization and the fundamental rights of public employees

In a global survey conducted by Deloitte Digital (Deloitte University Press, 2015), with the participation of government officials from over 70 countries, three quarters said that digital technologies were disruptive to the public sector and 96% described it as significantly disruptive. It was revealed that there were significant differences in the pace of digital transformation processes and that an overwhelming majority were in the initial or developmental phase. It appears that, in terms of so-called digital maturity, the public sector is behind the private sector, because the latter is affected by different values and drivers (Faro et al., 2019). Indeed, the implementation of the digital transformation in government institutions must also consider the public interest and implies additional elements regarding the ownership and safeguard and privacy of public data (especially identity), data security and privacy, universal accessibility to digital service and digital literacy of citizens (OECD, 2019).

In Spain, according to the results of the Vodafone Enterprise Observatory study (2018), digitalization is the main concern among managers of Spanish public institutions, regardless of the differences that exist on the basis of the type of public administration, as they consider that it has beneficial effects at the internal level, in the relationship with citizens and in management efficiency. The most significant barriers are the lack of qualified staff and insufficient funding. As regards digital services, IT security systems and networks and inter-device connectivity appear to be the two main priorities. Analysis and "big data" are mentioned secondarily.

In this context of change and evolution, we find that digital technology threatens to jeopardize privacy and intimacy, something that once could be preserved relatively easily. In a sense, the benefits of this digitalization sometimes imply threats to people's right not to have their personal data disclosed to

others, including those categorized as sensitive as well as other information related to them. This is a highly relevant, and not exclusive, issue in the wide spectrum of impacts arising from digitalization. Unfortunately, the damage that can be inflicted on the fundamental rights that protect all persons in general and public employees in particular is not insignificant. At a higher level of sophistication, the parameters by which we conceived surveillance have taken on new dimensions with digitalization. Technologies such as big data, cloud computing and artificial intelligence have profoundly transformed the traditional sense of surveillance, posing new challenges to the right to personal data protection. In the case of big data, its application for the generation of profiles entails risks that are limited with the development of legal regulations (Álvarez Cuesta, 2017). It is even more worrying to know that the maintenance and management of millions of citizens' data in the hands of an Administration is often subcontracted to private companies (Bal Francés, 2017). It should be noted, however, that all personal information held by government agencies on their employees is subject to the utmost secrecy, regardless of the medium on which it is held, and cannot be disclosed, in principle, without the express consent of the data subjects (Arroyo Yanes, 2018). Biometric technology, on the other hand, is a double-edged sword, capturing personal information, raising ethical questions about its potential use. There is no clear understanding of these issues and other technologies, with hitherto unheard of social and ethical implications, and it is therefore time to recognize their risks and ensure that public values and fundamental rights are safeguarded in the new digital age. Privacy and data protection are the two areas in which supervision has developed most (Royakkers, Timmer, Kool, Van est, 2018). A "hyperdatification" of the workplace is taking place with important implications for labour relations, as organisations are able to have information about the employee that allows them to monitor his or her behaviour and performance and, based on this information, make decisions about that individual.

More than a decade ago, a study dealing with the impact of information technologies on public administrations concluded that, parallel to their positive effect attributed to improving the efficiency of government performance, their more predominant negative impact was associated with citizens' privacy, their relations with government and the working climate and power relations among public employees (Dazinger, 2002).

With this digital evolution, relations between citizens and public institutions have undergone a substantial change. The current governance principles open the way to a new stage for public management, where cooperation between public administration and citizens plays a crucial role.

With varying degrees of sophistication, workers' rights, including those considered by law to be fundamental rights, are confronted with the digital reality that invades us daily. Workers' privacy, the protection of their personal data, the secrecy of their communications, digital signatures, monitoring of computers and e-mails, supervision of their activity on social networks, surveillance by cameras and geolocation devices and monitoring of employees' activities on social networks (Lam, 2016) are some of the aspects where caution should be exercised. At the corporate level, the right to disconnection, teleworking and the distribution of work and rest hours are added to the above elements. For example, in the case of the multinational companies Orange and Volkswagen, internal policies have been implemented on the latter right, whereby some employees have access to corporate communication on their mobile phones blocked for a certain period of time (Aguilera Izquierdo and Cristóbal Roncero, 2017).

In order to provide legal coverage for the desire to control the negative repercussions of digitalization with regard to fundamental rights and following European guidelines, in our country Law 3/2018 of 5 December on the Protection of Personal Data and Guarantee of Digital Rights recognizes the right to privacy of public employees and regulates the mechanisms for safeguarding privacy. At the same time, the Basic Statute of the Public Employee also includes some adaptations. In this sense, the application has been extended to labor and public employee relations. Employees' right to access, rectify, cancel and oppose (ARCO) their personal data is accompanied by a series of other measures adopted for the effective protection of data. In the legal discourse on privacy and, above all, in the regulation of personal data protection, two new rights have arisen: the right to informative self-determination and the right to be forgotten (Azurmendi, 2017; Rodríguez Escanciano, 2019). Along the same lines, the possibilities of

business supervision are limited. Thus, with the aim of guaranteeing the right to privacy, it is provided that the entrepreneur may access the content stored on their digital devices only for the purpose of monitoring compliance with their obligations. Similarly, it provides that employee representatives must be involved in the preparation of the criteria and that they must be informed of these (Art. 87). The right to privacy is also protected in relation to video surveillance and geolocation, and employees must be expressly informed in advance (Art. 89). Today, digital identity is a projection of our personal identity and one of the main questions is whether a minimum legal framework is needed to specify the scope and operation of that identity within the corporation. There is talk of the existence of a right to a technology that is compatible with respect for privacy, in other words, the right to use the least invasive technological innovations possible. There are a variety of situations where digital identity requires the legal definition of the framework for action (Arroyo Yanes, 2018).

In relation to the psychosocial risks associated with digital technologies, mention is made of the right to disconnection, the materialization of which must be subject to collective negotiation or, individually, to the framework of internal policies (Art. 88). Hyperconnectivity adds new psychosocial risks to the conventional risks of previous eras. The distribution of working and rest times is at greater risk of being blurred, which implies the need to specify the spaces of time during which the company can contact the worker. The need to be continuously available may result in increased stress (European Union, 2017). Obviously, this becomes more relevant in the case of teleworking (Eurofound-ILO, 2017). The length of the working day and isolation in the workplace are other aspects that have been affected by the introduction of new information and communication technologies (Zheng, Molineux, Mirshekary and Scarpato, 2015).

More and more services are being offered online by the Government and Public Administrations. The transparency of information promoted by open data initiatives is considered one of the most powerful weapons in the fight against corruption, but at the same time, it is required to be implemented with minimum guarantees to safeguard the privacy of public employees (Rodríguez-Hoyos, Estrada-Jiménez, Urquiza-Aguilar, Parra-Arnaúy Forné, 2018). While huge amounts of information about citizens are stored, there is a demand for greater transparency in all areas of public institutions' activities.

3 Work methodology

In order to respond to the proposed objectives, we have applied the following working methodology:

- a) *Literature review.* Public and private sources were consulted on digitalization in organizations in general and on the rights of public employees in particular. Based on this review, the approach to the field work was defined.
- b) *Field work (phase1): Personal interviews.* We contacted a group of professionals from public institutions who, due to their positions of responsibility, had a suitable vision of the object of study and could contribute to the purpose of the research. Given the difficulty in identifying individuals of these characteristics, we used the non-probabilistic sampling technique known as "snowball" or "chain sampling" (Goodman, 1961), by which we progressively identified experts based on the suggestions of the experts previously interviewed. Nine managers and technicians of the following institutions agreed to participate in the research: the Basque Government, the Provincial Council of Gipuzkoa, the Comisiones Obreras Trade Union, the University of the Basque Country, the Xunta de Galicia, the Donostia-San Sebastian Town Hall and the University of León. For the collection of information, as this was a phase of approximation to the object of study, a questionnaire was designed by blocks with open questions in which, in the last block, the interviewee was invited to suggest any aspect that had not been included in the aforementioned questionnaire or to elaborate on the comments dealt with previously. The interviews took place at the headquarters of the corresponding institutions during November

2018 - March 2019. For better analysis and interpretation, the interviews were recorded. The structure of the questionnaire is illustrated in Table 1.

Table 1: Content covered in the personal interviews

<i>Relevance of digitalization</i>
<i>Priority digital services</i>
<i>Actions initiated</i>
<i>Difficulties</i>
<i>Digital identity (digital signature, corporate e-mail, corporate mobile phone, corporate computers, digital disconnection, recordings in the workplace, monitoring of employee activity...)</i>
<i>Safeguarding of personal data</i>
<i>Transparency and publication of public employee data</i>
<i>Big Data</i>
<i>Occupational risks</i>
<i>Personal assessment of the interviewee</i>

Source: Own elaboration

- c) *Field work (phase 2): Delphi exercise.* We used the Delphi methodology to assess and prioritise the relevance of the main aspects of digitalization in the public administrations identified in the interviews and in the literature review. The Delphi method is a social research technique that attempts to obtain a valid opinion from a group of experts without them having to meet at the same time or in the same place (Dalkey and Helmer, 1963; Linstone and Turoff, 1975; Landeta, 2006). Its main characteristics are iteration (at the minimum, the experts answer the same question twice), controlled feedback (the quantitative and qualitative contributions of the experts are interpreted and integrated by the coordinators of the study before being presented again to the experts in the next round), anonymity (the contributions are dissociated from those of the experts who provide them), and statistical group feedback (the group's output includes the opinion of each expert). The aim of the technique is to obtain, at the end of the process, a group response of higher quality and, in general, of greater consensus. In our case, the participating experts were the nine experts who had been previously interviewed. In the first round they had to assess, on a qualitative scale of five positions, their degree of agreement, importance or the degree of development, where appropriate, of various elements related to the digital transformation in their administration and on the rights of public employees (Table 2). In the second round, they were presented with the same questionnaire, with the group results of the answers of the first round (averages and standard deviations), their own answers to those questions and, if applicable, the comments made by the participants for each of the items in the first round, so that in light of this information and their subsequent reflection, they could modify or maintain their previous assessment/score on each item. Thus, the results obtained in the second round are the aggregate product of the knowledge of each expert, contrasted and enriched with the knowledge of the rest of the experts, in a process of personal reflection and anonymous interaction between the participants controlled by the authors of the study.

Table 2: Content and structure of questionnaires in consultations

GENERIC ASPECTS OF DIGITALIZATION
Relevance in the different areas
Priority for digital services
Actions initiated for implementation
Difficulties detected
DIGITAL IDENTITY AND USE OF DIGITAL/ELECTRONIC MEANS
Digital Identity
Corporate email
Corporate mobile phone
Corporate computer
Video cameras
Monitoring of employee activity
PERSONAL DATA OF PUBLIC EMPLOYEES
Safeguarding of workers' identification data
Big Data
Transparency and publication of personal data of public employees
LABOUR RISKS derived from DIGITALIZATION
Psychosocial risks
Teleworking
Digital disconnection
FUTURE ACTIONS: SUGGESTIONS
Suggested factors not included in the above sections
Opinion on future actions

Source: Own elaboration

4. Results

In order to facilitate the presentation of the results in an orderly manner, we proceed to present them following the structure of the sections dealt with in the consultation phase with experts.

4.2 Generic aspects of digitalisation

Firstly, it addresses the **relevance** given by the interviewees to the phenomenon of digitalization in the different internal and external aspects of their institutions. From the participants' answers, it can be deduced that digitalization is a relevant issue (medium-high relevance), both in terms of the relationship with citizens and the quality of service. Its contribution to the identification of new needs and the evaluation of public policies is an aspect that was suggested in addition to the items initially proposed. The cost savings usually attributed to it, in the opinion of the interviewees, do not seem to be remarkable. The degree of **priority** given to digitalization differs between the different areas. Security systems and connectivity are, by far and with a relatively high level of consensus, highly important (high-very high).

The Internet of things, big data and cloud services are not priorities. In the case of one institution, it was mentioned that big data was being considered, although without any real development so far.

It can be seen that the **level of development** in the implementation of measures for digitalization is not homogeneous in all its dimensions and that, in addition, there are differences between the institutions consulted. It should be noted that, in general, specific work teams have been set up to address the digital transformation and that protocols or codes of conduct have been established to help integrate the new procedures and tasks. Many of these protocols refer to the use of electronic devices and resources. The creation of protocols is embodied in the establishment of decalogues, disseminated through communications in institutional newsletters or other media. Outsourcing of implementation work through outsourcing is quite common. The rate of hiring new professional profiles is low, perhaps, as one of the interviewees pointed out, because the tempos in a public institution are different compared to the private sector. Other aspects such as the modification of jobs, as well as the negotiation with trade union representatives, are not developing to the same extent as the previous aspects. Finally, it follows that there are no losses of existing jobs.

Among the possible **difficulties and resistances** related to digitalization, the main ones, with a medium-high and medium importance respectively, are attributed to the insufficient qualification of the staff and the resistance of the employees to the new rules and/or procedures. Interviewees mentioned the management of adaptation itself and the time it requires as two of the factors hindering the implementation of digitalization. Employees' resistance to relocation in the workplace, to changing tasks or to training in the new technologies are not major difficulties (minor importance). According to one of the managers interviewed, it would be necessary to work on raising the awareness of the most sceptical employees, to enable a cultural change in the organisation that would allow a real digitalization of the organisational processes.

Table 1: General aspects in digitalization

	Group average	Standard deviation	Number of replies
The RELEVANCE of digitalization in relation to the following aspects is being:	Degree of relevance		
	1-Very little → 5-Very high		
Communication with the citizen	3,75	0,97	8
Service quality	3,63	0,99	8
Time saving	3,43	0,90	7
Problem solving	3,25	0,97	8
Offer of new services	3,25	0,66	8
Cost savings	2,86	0,99	7
OTHER RELEVANT AREAS PROPOSED BY THE EXPERTS IN THE FIRST QUESTIONNAIRE			
Using data to identify new requirements			
Using data for public policy evaluation			
Regulatory compliance			1

	Group average	Standard deviation	Number of replies
The degree of PRIORITY of the following areas is:	Degree of priority		
	1-Very little → 5-Very high		
Security systems	4,38	0,70	8
Network and device connectivity	4,25	0,66	8
Internet of things (digital interconnection of everyday objects, devices, systems and services with the Internet)	2,88	1,27	8
Digital Information Analysis and Big Data	2,50	1,22	8
Cloud Services	2,25	0,97	8

	Group average	Standard deviation	Number of replies
The degree of DEVELOPMENT in implementing digitalization:	Degree of development		
	1-None (non existng) → 5-Very high		
Creation of specific work teams	3,75	0,97	8
Creation of protocols/codes of conduct	3,43	1,18	7
Outsourcing of services	3,25	0,83	8
Negotiation with union representatives	2,67	1,37	6
Changing the functions of the current positions	2,29	1,03	7
Creation of new positions	2,00	0,76	7
Recruitment of new professional profiles	2,00	0,76	7
Elimination of existing positions	1,86	1,12	7

	Group average	Standard deviation	Number of replies
The importance of the DIFFICULTIES to implement digitization in the following aspects is:	Degree of importance		
	1-Very little → 5-Very high		
Insufficient qualification of staff	3,38	1,11	8
Employee resistance to new rules/procedures	3,00	1,22	8
Employees' resistance to changing tasks	2,71	0,88	7
Employee resistance to relocation (changing positions)	2,60	1,02	5
Employee resistance to training in new information and communication technologies	2,38	0,86	8
OTHER DIFFICULTIES PROPOSED BY THE EXPERTS IN THE FIRST QUESTIONNAIRE			
Insufficient availability of economic resources			1
-			

Source: own elaboration

4.2 Digital identity and use of digital/electronic means

In this area, it should be noted that there are significant differences between the various institutions. In any case, in general, it can be stated that there is communication from the institutions on the appropriate use of electronic and digital devices for professional purposes, indicating, more or less explicitly, the duty to abstain from use for private purposes (corporate e-mail, computer and mobile phones). In fact, the degree of development of the **regulation on restrictions to private use** is medium-high, in terms of the use of corporate e-mail, mobile phone and computer. Likewise, the degree of implementation of **protocols/codes of conduct for good use ("good practices")** is also high. However, the existence of such codes does not correspond to their awareness by public employees. The interviewees consider that the knowledge is scarce or, in any case, a medium score.

In the case of surveillance through video cameras, the level of development of the protocol for access, rectification, cancellation and opposition of the employee to the data obtained by this means is high and greater than in other devices, although its use is not so high. Monitoring and control of work activity is very scarce, if not non-existent, and, likewise, the knowledge that workers have about good usage practices is also practically non-existent.

It is striking how little collective bargaining has been developed in this context.

With regard to the **monitoring and control of activity** on the corporate computer, it can be seen that it is rarely used.

In several cases, employees have been informed that, in justified cases and always with maximum guarantees, the institution has the **power to access corporate e-mails**.

Access filters show a high degree of development in the case of corporate computer, especially for security reasons.

Table 2: Digital identity and use of digital/electronic means

	Group average	Standard deviation	Number of replies
In relation to CORPORATE EMAIL, the degree of development of the following elements is:	Degree of development		
	1-None (non existng) → 5-Very high		
Protocol/code of conduct for good use ("good practices")	3,50	0,87	8
Regulation on restrictions on private use	3,13	1,54	8
Regulation on the possibilities of access to the employee's mail by the organization	2,75	1,09	8
Public employees' knowledge of the protocol/code of conduct	2,63	0,86	8
Collective negotiation of good practices	2,00	0,82	6

	Group average	Standard deviation	Number of replies
In relation to the CORPORATE MOBILE PHONE, the degree of development of the following elements is:	Degree of development		
	1-None (non existng) → 5-Vary high		
Protocol/code of conduct for good use ("good practices")	3,25	1,20	8
Regulation on restrictions on private use	3,13	1,27	8
Public employees' knowledge of the protocol/code of conduct	2,38	0,86	8
Protocol of access, rectification, cancellation, objection (ARCO) of the employee to the data obtained through his mobile phone by the organization.	2,13	1,27	8
Possibilities of geocontrol of the employee by the organization	1,86	1,12	7

	Group average	Standard deviation	Number of replies
In relation to the CORPORATE COMPUTER, the degree of development of the following elements is:	Degree of development		
	1-None (non existing) → 5-Very high		
Incorporation of access filters:	3,50	0,50	2
Filters for security reasons	4,13	0,60	8
Filters for other reasons	3,63	1,22	8
Regulation on restrictions on private use	3,38	1,49	8
Monitoring and control of computer use	2,33	1,89	3
Working time (control of working time through computer connection time)	2,63	1,65	8
Type of website content consulted	3,25	1,39	8
Number of downloads	3,25	1,39	8
Access (without prior authorization of the employee) to files/information contained in the computer	2,57	1,59	7
Individualized controls (to employees)	1,86	1,46	7
Aggregate controls (only aggregate data from employee group(s))	2,71	1,39	7
Protocol/code of conduct for good use ("good practices")	3,00	1,32	8
Public employees' knowledge of the protocol/code of conduct	2,63	1,22	8
Protocol of access, rectification, cancellation, opposition (ARCO) of the employee to the data obtained through his computer by the organization	2,13	1,05	8

	Group average	Standard deviation	Number of replies
In relation to the VIDEO CAMERAS, the degree of development of the following elements is:	Degree of development		
	1-None (non existing) → 5-Very high		
Protocol of access, rectification, cancellation, opposition (ARCO) of the employee to the data obtained about him through video cameras by the organization	4,17	3,39	6
Use of surveillance cameras in work areas	2,83		

Protocol/code of conduct for good use ("good practices")	1,80	0,75	5
Public employees' knowledge of the protocol/code of conduct	1,60	0,49	5
Monitoring and control of work activity using video cameras	1,40	0,80	5

Source: Source: Own elaboration

4.3 Personal data of public employees

In the work environment, large amounts of information are generated that can be digitalized, such as those related to the employee's working time, performance, behavior, presence in the workplace, etc. All this digitalized information can be analysed for subsequent application by institutions and it is therefore a subject that arouses interest and concern at the same time. In order to regulate the information captured and at the same time preserve the rights of individuals, the so-called ARCO rights come into play. As noted above, it is in the use of video cameras that the existence of protocols related to ARCO rights are most developed. However, in general terms their use hardly reaches the medium level.

The results obtained indicate that it is not very frequent (low-medium degree of development) that the employee is informed about the type of information that is collected, the objective, the method used, the place where this information will be stored, as well as the time period until its destruction. regarding consultation with employee representatives, it is established that the need for and suitability of the information to be collected and processed should be agreed with employees. The results indicate that, although it is not yet common practice in the institutions consulted, there is evidence that this practice is being implemented gradually. It should also be remembered that, as the standard deviation indicates, the heterogeneity of the responses received shows a higher disparity in the responses to the items linked to this aspect than in the rest of the aspects studied.

The degree of implementation of the international standards ISO 27002 and ISO 27001, on recommendations for best practices in information security and assurance, confidentiality and integrity of data and information, and the systems that process it, appears to be low, although there are significant differences in the results.

The processing of personal data offers a more optimistic view. Among the aspects that we go on to comment on, it is possible to observe, in general, a greater degree of development in the measures aimed at preserving the privacy of personal data. The measures to control the publication of the employee's personal data, as well as the existence of the protocols to settle possible conflicts between the recommendations provided in Law 19/2013, of 9 December, on transparency, access to public information and good governance and the safeguarding of personal data and the codes of good conduct for the use thereof, show a medium-high level of development. On the other hand, it is also interesting to note that interviewees stated that they were aware (medium level of development) of the existence of internal complaints and data protection systems that allow for the reporting of irregular or perceived or potential fraudulent conduct.

However, once again, the level of implementation of protocols and systems for data protection is higher than that of public employees.

Table 3: Personal data of public employees

	Group average	Standard deviation	Number of replies
In relation to the COLLECTION AND USE OF DIGITAL LABOUR INFORMATION) about the employee on, for example, presence control, attendance at training courses, working time, performance, behaviour, location:	Degree of development		
	1-None (non existng) → 5-Very high		
Protocol of access, rectification, cancellation, opposition (ARCO) of the employee to the labor data obtained about him by the organization	2,89	1,22	9
The employee is informed about the information that is collected about his/her activity: for what purpose the information is collected, the characteristics of the data, the method of collecting the information, the location of the information collected, the period of storage	2,50	1,59	8
The need and suitability of the information to be collected and processed is agreed with the employee representatives	2,50	1,40	8
The international standard ISO 27002 is being implemented, which provides different recommendations of best practices in information security management to all stakeholders and decision makers to initiate, implement or maintain information security management systems.	2,00	1,17	6
The international standard ISO 27001 has been implemented, which allows the assurance, confidentiality and integrity of the data and information, as well as the systems that process it	1,83	1,26	6

	Group average	Standard deviation	Number of replies
In relation to the PERSONAL DATA of the employees, the degree of development of the following aspects is	Degree of development		
	1-None (non existng) → 5-Very high		
Control of the publication of employee personal data	3,67	0,93	9

Protocol to settle possible conflicts between the Law on Transparency in Administration (2013) and the protection of public employee data (e.g. publication of the procedures of an administrative file where a civil servant has acted)	3,56	1,12	9
Protocol/Code of Conduct for the good use ("good practices") of the employee's personal data. For example, ARCO rights (LOPD) of Access, Rectification, Cancellation, Objection, of the employee over his/her personal data in possession of the organization	3,38	0,73	8
Internal reporting and data protection system (system for internal reporting of corrupt, illegal, fraudulent or dangerous behaviour, including perceived or potential malpractice)	3,00	1,09	9
Public employees' knowledge of the protocol/code of conduct regarding employee personal data	2,50	1,05	8

	Group average	Standard deviation	Number of replies
With regard to the employee's right to DIGITAL WORK DISCONNECTION, the development of the following aspects is	Degree of development		
	1-None (non existing) → 5-Very high		
Regulation of working time (paid/unpaid) in telework	2,14	1,41	7
Existence of wage incentives for digital availability outside working hours	2,13	1,58	8
Protocol/Code of Conduct regarding the reconciliation of personal and professional life, including the digital switch-off	1,75	0,45	8
Established schedule of digital work disconnection (computer, mobile phone...)	1,63	1,05	8
Public employees' knowledge of the protocol/code of conduct, including digital disconnection	1,38	0,35	8

Source: own elaboration

4.4 Occupational risks arising from digitalization

With regard to psychosocial risks, only those allegedly resulting from the digital transformation in the workplace have been addressed, such as computer fatigue, electromagnetic exposure or the

disappearance of the distribution between working and rest hours, which is more pronounced in the digital age. In one of the institutions they experienced multiple cases of lipoatrophy (decrease in adipose tissue located under the skin, generally in the thighs and forearms) in women who worked with computers. Consequently, appropriate actions were taken to eradicate the causes of these injuries.

In general, the results show that there is still much room for development in this area.

The teleworking option has little implementation, but it is true that there are significant differences according to the public institution to which we refer. The remuneration for the availability of employees outside their working hours through digital devices is scarce and the differences between the institutions are remarkable. The mobile phone is certainly the primary tool for availability and use outside the working day, and it is remunerated with financial compensation.

Similarly, it can be stated that the existence of a completion time for the activity with technological or digital tools is low.

In this area, unlike other aspects addressed in the previous paragraphs, the degree of implementation of codes of conduct aimed at facilitating the reconciliation of private and professional life, and which include digital work disconnection, is lower. It barely reaches a low level of development. Finally, it should be noted that, in line with what has been said so far, the level of knowledge of employees is lower than the level of development of the measures adopted and, in this particular case, is the lowest of all the elements studied.

In general terms, the degree of development of risk detection instruments, of decalogues or protocols of good use, or of training in prevention and training, is nil or scarce. Communication for the prevention of the particular risks of digitalization still has much room for improvement and employees have little knowledge of the protocols in this area.

Table 4: Occupational risks derived from digitalization

	Group average	Standard deviation	Nº de respuestas
In relation to the PSYCHOSOCIAL RISKS derived from DIGITALIZATION, the degree of development of the following aspects is:	Degree of development		
	1-None (non existng) → 5-Very high		
Protocol/code of conduct to avoid disorders related to the above risks	2,29	0,96	7
Risk detection instruments (computer fatigue, insulation, electromagnetic exposure...)	2,13	1,03	8
Training to prevent psychosocial risks due to digitalization	1,75	0,83	8
Public employees' knowledge of the protocol/code of conduct	1,63	0,45	8
Communication to prevent psychosocial risks due to digitalisation	1,50	0,49	8

Source: own elaboration

4.5 Future actions: Suggestions

Based on the opinions gathered in the personal interviews and the first round of the consultation, a battery of possible future actions was proposed that, due to their relevance, should be addressed in the organizations with the objective of preserving the rights of employees in the context of privacy, image and data protection, as well as secrecy in communications.

Clearly, those consulted attach a high - very high importance to legal consultation prior to the implementation of labour modifications derived from digitalization. Next, of high importance, there are the actions aimed at raising the awareness of employees to work in an increasingly digital context, through different means. In a lower order, although it is given medium-high importance, would be the promotion of the development and visibility of the current codes of conduct or good practices (in response to the low awareness of them by employees) and the promotion of collective bargaining of good practices.

Table 5: Future actions: Suggestions

	Group average	Standard deviation	Number of replies
IN YOUR OPINION, IN THE FUTURE, with the aim of preserving the rights of employees in the context of privacy, secrecy of communications, self-image and data protection, the importance of carrying out the following ACTIONS is:	Degree of importance		
	1-Very little → 5-Very high		
Legal consultation prior to the implementation of significant working conditions modifications derived from digitalization	4,44	0,99	9
Formal actions to raise employee awareness (communication, training...)	4,00	0,93	9
Leadership of the management team in awareness-raising actions	4,00	0,93	9
Further development and visibility of existing codes of conduct (good practices)	3,89	1,09	9
Collective negotiation of the rules of good use	3,25	1,07	8

Source: own elaboration

5 Conclusions

Based on exploratory research, this work has included an assessment of the impact of digitalization on the fundamental rights of public employees. The digital transformation is introducing major qualitative changes. What was until relatively recently well defined, now seems to be escaping from conventional dynamics into the unknown. This new context, which is somewhat new in terms of communication and management tools, also appears to be complex from a legal point of view. The advantages related to digitalization sometimes conflict with the threats they can pose to fundamental rights around privacy,

data protection and security at work. Therefore, there is a need for public institutions to preserve the rights of employees and therefore to develop the current legal framework.

There are many elements of this digitalization in the public and private spheres, and as this research has shown, the degree of adaptation of organisations in the different areas is quite heterogeneous. However, it can be concluded that public institutions are adapting to the new digital environment and its consequences on the rights of their employees, although the pace of adaptation is not uniform. With these differences in mind, it can be seen that efforts are being made to adapt processes, more or less formally, as a driving force. Full adaptation will have to be achieved through process re-engineering to consolidate an organisation and framework of actions in line with the new social and regulatory requirements.

The existence of internal regulations for the preservation of rights is very present in organizations, but the evaluation of the current reality advises to advance in its development, as well as to promote and guarantee its knowledge by the employees. It can be seen that there is uncertainty in many aspects, which points to significant room for improvement. The adaptation of processes should include communication actions to all employees, with the aim of combining the framework of procedural and structural actions and their acceptance by all employees. Precisely, together with the framework of legislation, it will be necessary to raise awareness among public employees of the assimilation of the rights and obligations posed by the new digital environment, which will require adequate leadership and communication. It is likely that the creation of specific managerial functions or figures could help to make visible the effort of the public administration to deal effectively with the digital transformation by safeguarding the rights of its employees.

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