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HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS IN EUROPE? A COMPARATIVE STUDY

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Abstract:

Digital transformation has become a desire for states due to its real benefits to society. Public sector employees must prepare professionally to successfully implement digitisation projects of public services. In this context, the issue of digital skills of civil servants is a priority for the public administration. In this study, we performed a comparative analysis of institutions that provide professional training in the digital field for public sector employees. The purpose of this work is to analyse which are the models of good practices to follow when we talk about the digital transformation of public administrations in Europe. At the same time, the objective of the comparative analysis is to establish a set of priorities regarding the digital skills that must be pursued through the professional training processes of civil servants. The work offers interesting insights on how these institutions are sharing their responsibilities. The conclusions of this study can be useful to public institutions in Romania in order to improve digital transformation processes.

Keywords: digital transformation, digital competences, public servants, employees, public sector

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INTRODUCTION

In the digital era we live in, the technological processes and public service digitalisation have transformed the way in which civil servants perform their activity and interact with citizens and the working environment. A massive majority of the population use digital ICTs at work. This aspect is confirmed by scientific studies, as shown by a representative research from Germany, according to which 83% of the interviewed employees have stated that they need technology at work (Klamer et al., 2017). The strategic importance of the digital transformation within the public sector leads to the fact that „many governments from developing countries invest in the digital infrastructure and support training programmes developed by the private sector, in order to provide the workforce with digital competences” (Bilana et al., 2023). In this context, the acquisition and development of digital competences becomes essential for a modern and efficient public administration. For the public sector employees, it is time to prepare adequately so that they can be ready to fully assimilate the operational model of the digital network and era. This

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY

would help increase efficiency and productivity and would bring new methods of interaction between the citizens and the institutions (Casalino et al., 2020). The strategic importance of the digital competences have determined researchers to deepen, in numerous studies, the definition of the digital competence term. A specific approach defines this term as being that combination between knowledge, skills and attitudes needed in order to achieve “the confident and critical use of Information Society Technology for work, leisure and communication” (Ferrari, 2012). The difficulty of defining and implementing this concept comes from its nature, namely the fact that the digital and technological progress is in a constant change and evolution (Casalino et al., 2020).

According to OECD, public institutions must raise their performance level so that they can keep up with the citizens’ expectations, to manage increasingly better budgetary pressures and to maintain public confidence at a high level. The pandemic crisis has presented a new challenge for the confidence levels, but it has also demonstrated the relevance of a more flexible and more adaptable public service in uncertain times (2021). Digital competences are crucial in modernising governmental processes, improving services for the citizens, and ensuring that civil servants can effectively contribute to the progress of the society in a digital era. To this effect, both the European Union Parliament and the Council have recommended, since the early 2000s, the acquisition of digital competences as a part of key competences for lifelong learning (European Commission, 2015). The European Commission has taken various initiatives to define digital competences in the context of digital literacy and skills. They have outlined digital competences within the framework of the Digital Competence Framework for Citizens (DigComp) and the Digital Competence Framework for Educators. Within the DigComp Framework, the definition of digital competences is close to the one expounded by Ferrari (2012), however, we notice the emphasis that the European Commission places on the responsible nature that the use of technology must have in society (2018).

As digitalisation continues to transform the manner in which public administration works, digital competences become a key element in the modernisation and adaptation process. Civil servants must be prepared to use digital instruments and technologies, to manage data and information in the digital environment, to communicate and collaborate online, to ensure data security and to adapt to the constant technology changes. The purpose of this paper is to explore the various methods by which European states try to implement digital transformation. This paper aims at analysing and identifying the institutions or agencies responsible for the professional training of the civil servants. The research follows a series of criteria such as the need of digital competences, areas of specialisation and skills that are relevant for the civil servants in administration, as well as good practice examples from other states. In order to illustrate the diversity of digital competences required in the European public institutions, we will perform a comparative study in which we will review examples of approaches and initiatives from various countries. These examples will outline specific measures taken to develop the digital competences of the civil servants and their positive impact on the efficiency and quality of the public services.

1. LITERATURE REVIEW

In order to meet the challenges brought by digitalisation, the organisations must develop digital strategies and endeavour to identify key success factors on the path to digital transformation (Hess et al., 2016; Vial, 2019). Therefore, digital competences have become extremely important not only to perform at work, but we also refer to the social component. Along with the democratisation of access to digital devices and internet, digital competences have become fundamental to all individuals (Nyikes, 2017).

Martin (2005) considers that digital literacy means „awareness, attitude and capacity of the individuals to adequately use digital instruments and facilities, in order to identify, access,

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY

manage, integrate, evaluate, analyse and synthesise digital resources, build new knowledge, create media expressions and to communicate with others, in the context of specific life situations, to enable a constructive social action; and to reflect upon this process". Ivanenko and Artamonova (2020) develop a conceptual delimitation between digital skills and competences. After researching several definitions, they concluded that digital skills come down to the capacity to use technology (ICT), whereas digital competence is a much more complex concept. In conclusion, there are debates both on the terminology employed, as well as on the manner the concept is defined. The efficient digital transformation of public services and institutions must be integrated into a joint vision of the states to respond to requests generated by globalisation, the increase of the citizens' expectations for services, the evolution of the state's role and the need of inclusive information for the society. The real stake of this process is not only technology, as introducing new technologies in the workplace does not concern hardware or software, but it is about the human resource which must embrace change in order to learn to effectively use the available technology (Bala and Venkatesh, 2016; Colbert et al., 2016). Therefore, institutions not only must adopt strategies to cope with digitalisation, they must prioritise a workforce retraining plan (Kane et al., 2019).

The Deloitte study on human capital (2023) shows us the world as one without borders with respect to working relationships. In order to survive and perform in this digital world, professional training is the key – both employees and organisations "must think just like researchers" (Azevedo, 2023). The competitive advantage will come from creativity and from an attitude by means of which new solutions will be constantly generated, through learning and adaptation to the new reality as fast as possible. Today, more than ever, organisations are asked to implement agile and receptive professional training processes, reflecting organisational models with multiple competences, with human resources capable of sharing, extending, updating and renewing experience and knowledge (Cucino et al., 2022). Furthermore, in today's complex informational landscape, the literacy concept involves more than its classical meaning (Bawden, 2001).

The technology progress already functional in the private environment has raised the expectations of the European public institutions and citizens as regards the improvement of the public deed and the experience of the citizens – for instance, by digital provision of public services – as well as the increase in funding for the technological development. There is an opportunity to fully exploit the benefits of the technology, such as improving the efficiency and transparency of the governmental operations, promoting the quality of services for the citizens and enhancing the general competitiveness of EU-28. In order to reduce the competence gap and to best equip the workforce for functioning in an increasingly digitalised and automated world, the governments will have to focus on recruitment, improvement and retraining efforts (Chinn, 2020).

The digital competences of the human resource may vary according to the employer. Also, there are scientific studies demonstrating that the needs regarding the digital qualification of people can transform depending on the industry (Periáñez-Canadillas et al., 2019). Workforce competences, such as digital competences, differ not only depending on the jobs, but also according to industries or fields. As shown by the literature, there are certain digital competence standards relevant for the civil servants such as digital literacy, digital communication, data and information management, cybernetic security, electronic services, or digital project management (Vasileva et al., 2018). Moreover, according to the European Digital Competence Framework, digital competence models desirable for the public sector contained information and literacy areas relating to data, communication and collaboration, creation of digital content, safety and problem solving. Concurrently, due to the fact that there is little data on the assessment of digital competences, research relating to the manner in which civil servants could be professionally trained are very general (Bilan et al., 2023) and usually include a continuation of the classification used by ITU (2018).

**HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY**

Although there are plenty of methods through which civil servants can get digital competences, OECD recommends that professional training be officialised and formalised, in order to show commitment from the institution. At the opposite end, practicing a less standardised professional training process could lead to not taking it seriously and ultimately to failure (2021). In Europe, there are several practices to be followed so that the professional education in the digital field for the civil servants can be completed successfully. Thus, the Institute of Public Administration in Spain periodically regulates (every 4 years) a General Strategic Plan encompassing the specific needs of the employees from each ministry or public administration. The preparation approach is therefore particular, in relation to the design of each institution aside. A similar plan is in Italy by means of the „Digital skills for the public administration” project. Other states choose to externalise the professional training process and to collaborate with the education system and the IT industry. Such an example is Estonia, which has encouraged the learning of digital competences on a general level in society, starting from the principle according to which digital transformation is a universal process incurred not only by the public institutions, but also by citizens in general. Employees prefer a „pull” type of learning approach, accessing easy-to-use materials and acquiring skills on demand, rather than a rigid „push” type of approach. Passing to a „pull” type of learning involves promoting new methods, nurturing a growth mindset, creating a feedback loop and iterating the content in order to satisfy the current needs.

Another approach that must not be neglected is the one that calls on external consultants from the private sector, companies capable of teaching the governments what are those competences to be followed in the digital governance skills. Both Great Britain and Spain are states which have emphasised the know-how transfer from their providers to the public sector employees. In continuation of this practice, the OECD also presents the case of Slovenia. They have organised professional training sessions or education workshops whenever they conducted digital transformation processes. Therefore, by sessions of knowledge transfer, they made sure that the people in government service were equipped with the specific digital competences required in those processes (2021).

2. OBJECTIVES AND METHODOLOGY

Romania’s ranking on the 27th position as regards the size of human capital reflects a lack of basic digital competences among the population, the results obtained being way below the European Union average concerning at least basic digital competences (28 % compared to 54 %) and digital competences above the elementary level (9 % compared to 26 %). According to the European Union’s vision and perspectives for the digital transformation of Europe by 2030, the issue of digital competences of the public administration staff is a priority for the public administration as an essential prerequisite for the digitalisation of the public services and of the internal operations within the administration, a complementary measure for the implementation of e-governance, as well as an essential requirement for achieving the objectives set in Europe’s Digital Decade.

This analysis aims at highlighting best practices of the European states, best practices that can be taken over by our country too, with a view to improving the digital transformation processes and to increase the scores registered by the European Commission. The purpose of this research is to conduct a comparative analysis of the way in which European states approach the civil servants’ professional training by means of the institutions in charge with their management and training. Furthermore, our research tries to establish the priorities in professional training as regards the digital competences of the public field employees with the aim of providing high-quality public services for the citizens.

The methodology of comparative scientific research involves the systematic comparison of different variables, cases, or groups to identify models, relations, and differences between them.

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS IN EUROPE? A COMPARATIVE STUDY

This type of research intends to explore how and why certain variables act differently or similarly, under various conditions (Ragin, 1987). In the first phase, we chose to study the digital competences of the civil servants in general and of those from institutions specialised and authorised in public servant management and training. The comparative analysis of the institutions providing public function and public servant records and management in various European states, from the digital competence and development point of view, outlines the manner in which these countries approach the public administration digital transformation process and how they prepare their civil servants for the constantly changing technological requirements. By comparing these two aspects, we can get a more detailed perspective on the differences and similarities between different national approaches. In order to achieve the comparison, we have selected various countries of Europe. Among these, besides our country, Romania, we have also selected Norway, Spain, Germany, Estonia, France, Poland. The next step was to identify which are the institutions dealing with the management of competences (particularly digital) in civil servants. Subsequently, we sought to observe which are those exact digital competences that these institutions promote and / or assess. The objective of this comparative analysis is to establish certain patterns concerning the digital competences required to successfully provide the digitalisation of the public system. In order to illustrate the diversity of the digital competences required in the institutions specialised in Public Function Management and in public servant management from other EU states, we have analysed examples of successful approaches and initiatives of various Member States. These examples will outline specific measures taken to develop digital competences of the civil servants and their positive impact on the efficiency and quality of the public services.

3. ANALYSIS AND INTERPRETATIONS

According to the European Commission’s vision and perspectives for the digital transformation of Europe by 2030, the issue of digital competences of the public administration staff is a priority for the public administration. Therefore, conducting a comparative analysis on the institutions providing records, management and professional training of the civil servants from various European states, we have represented the information obtained in a table below, as follows:

Table 1. Main responsibilities of the institutions responsible with professional training in 7 European states

COUNTRY	Name of the institution responsible with public function management	Main responsibilities
Romania	The National Agency of Civil Servants (ANFP) National Institute of Administration	<ol style="list-style-type: none"> 1. Training and Development of Civil Servants 2. Planning and Organisation of Training Courses 3. Evaluation and Certification of Competences 4. Career Management 5. Collaboration with Public Institutions 6. Research and Development in the field of civil servant digital competences 7. Promoting International Experience Exchange 8. Promoting Ethics and Integrity

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY

COUNTRY	Name of the institution responsible with public function management	Main responsibilities
Norway	The Norwegian Agency for Public Management and eGovernment (Difi)- Norwegian Centre for E-Government (NCEGOV)	Difi is part of the Norwegian Agency for Digitalization (2020) and is responsible with promoting and supporting an effective public administration, including training and development of civil servants. They offer guidance, instruments and resources to improve the digital competences and skills of the public sector employees. All the DIFI's responsibilities have been taken over by the Norwegian Agency for Digitalisation, the most significant ones being: <ol style="list-style-type: none"> 1. Government's digitalisation 2. ITC governance 3. Public procurement 4. Information security 5. Data management 6. User-centered design 7. Research and development <p>NCEGOV is likely involved in conducting research and analysis related to e-government initiatives and digitalisation trends. This includes studying the impact of digital technologies on public administration, identifying best practices, and evaluating the effectiveness of existing e-government services. NCEGOV may play a role in disseminating knowledge and information about e-government practices. This can include organising conferences, seminars, workshops and publishing research papers or reports to keep stakeholders informed about the latest developments in the field.</p>
Spain	Dirección General de la Función Pública (DGFP) – General Directorate for the Civil Service Instituto Nacional de Administración Pública (INAP)	<ol style="list-style-type: none"> 1. Records and management of the public function 2. Elaboration and implementation of the policy concerning civil servants 3. Professional development of the civil servants 4. Monitoring and evaluating the performance of the civil servants 5. Promoting ethics and integrity principles
Estonia	Estonian Academy of Public Administration (EAPA) E-Governance Academy (eGA)	The Estonian Academy of Public Administration offers a wide range of professional training and development programmes for the civil servants on various levels. These programmes cover topics such as: public administration, leadership, project management, policy development and other relevant fields. EAPA aims at improving knowledge, skills and competences of the civil servants to ensure an effective and efficient governance in Estonia. The E-Governance Academy (eGA) is an international organisation that specialises in providing expertise, research, training, and advisory services in the field of e-governance. It was established in 2002 in Estonia, a country known for its advanced and innovative approach to digital governance. The eGA operates as a non-profit foundation and has gained recognition for its contributions to the global advancement of e-governance.

**HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY**

COUNTRY	Name of the institution responsible with public function management	Main responsibilities
Germany	Bundesverwaltungsamt (BVA) – The Federal Office of Administration	<ol style="list-style-type: none"> 1. Records of the public function 2. Human resource management 3. Professional development and continuous training 4. Implementation of regulations and laws 5. Monitoring and assessment of the performance
France	Direction générale de l'administration et de la fonction publique- DGAFP) – (in English General Directorate for public administration and civil service) Institut National du Service Public -(in English National Institute of Public Service)	DGAFP is a governmental institution functioning under the authority of the French Ministry of the Interior and has the role of providing coordination and implementation of the policies and regulations related to public function and civil servants in France. INSP offers a diversified range of continuous training to consolidate the career and mobility perspectives of the executive directors in France and internationally. One of the course pillars is related to innovation and transformation for the civil servants.
Poland	Ministry of Administration and Digitalisation	The institution supervises the development and implementation of policies relating to public administration, including recruitment, training and management of the civil servants on various levels of governance. Its main role is to ensure the efficient functioning of the public administration system in Poland.

Source: Own processing of the author based on the information from the official sites of the institutions (2023)

Table 2. Key digital competences pursued for the civil servants from 7 European states

COUNTRY	Name of the institution responsible with public function management	Digital competences
Romania	The National Agency of Civil Servants (ANFP) National Institute of Administration	ANFP takes action within the National Recovery and Resilience Plan, conducting the Advanced Digital Competence Training Programme for Civil Servants within investment 16. The objective of this investment consists of improving the advanced digital competences of the civil servants with the aim of supporting the public service digitalisation process. By means of the investment, specialised training courses are proposed, focused on the acquisition of advanced digital competences, such as the management of databases, information systems, the analysis of working processes, data analysis and programming. These courses are intended for a number of 32.500 civil servants, including 2.500 managerial level civil servants
Norway	The Norwegian Agency for Public Management and eGovernment (Difi)	In the Norwegian civil servant professional training process, we find the following desirable digital competences: <ol style="list-style-type: none"> 1. Basic skills for computer operation 2. Information management: the ability to manage and

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY

COUNTRY	Name of the institution responsible with public function management	Digital competences
		<p>organise digital information in an efficient manner</p> <ol style="list-style-type: none"> 3. Communication and collaboration instruments 4. Data analysis and visualisation: knowledge of data analysis instruments (for instance, Excel, statistical software) and visualisation instruments (for instance, Tableau, Power BI) 5. Cyber security awareness 6. Digital literacy and adaptability:
Spain	<p>Dirección General de la Función Pública (DGFP) – (in English General Directorate for the Civil Service. Instituto Nacional de Administración Pública (INAP)- (in English National Institute for Public Administration)</p>	<ol style="list-style-type: none"> 1. Use of digital communication instruments 2. Digital data and information management 3. Use of digital platforms and applications for human resource management 4. Information and communication technology competences (ICT) 5. Information security and data protection competences
Estonia	<p>Estonian Academy of Public Administration (EAPA) E-Governance Academy (eGA)</p>	<p>Similar to the competence structure set by Norway, competences such as digital literacy, management of online communication platforms and information, cyber security awareness are wanted in Estonia too. We can also add:</p> <ol style="list-style-type: none"> 1. e-governance instruments 2. Project management instruments 3. Digital service design
Germany	<p>Bundesverwaltungsamt (BVA) –(in English The Federal Office of Administration)</p>	<p>BVA has established a digital vision setting specific and ambitious goals for the digitalisation of the institution by the end of 2022 (BVA, 2023):</p> <ol style="list-style-type: none"> 1. Digital accessibility 2. Digital pioneering 3. Digital rhythm 4. Intelligent promoter 5. Modern digital working <p>Unfortunately, there are no reports with the results obtained after the implementation of this digital vision and not even a report on the achievement of the objectives set out.</p>
France	<p>Direction générale de l'administration et de la fonction publique (DGAFP) - The Directorate General for Administration and Public Service Institut National du Service Public (in English National Institute of Public Services)</p>	<ol style="list-style-type: none"> 1. Use of digital instruments and technologies 2. Data and information management 3. Online communication and collaboration 4. Data security and data protection 5. Digitalisation of the administrative processes <p>By developing and applying these digital competences, DGAFP aims at improving the efficiency, transparency and quality of the public services in France, as well as adapting to the technological evolution and digital requirements of the society.</p>

HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY

COUNTRY	Name of the institution responsible with public function management	Digital competences
Poland	Ministry of Administration and Digitalisation	<p>Among the most relevant objectives of this institution, the digital transformation of the public services is included also, through:</p> <ol style="list-style-type: none"> 1. e-Governance and digitalisation 2. Development of the information society 3. Data protection and cyber security 4. Regional development <p>An important actor in the process of equipping civil servants with digital competences is the National School of Public Administration, which creates course modules including digital technologies and the way these can be employed in the public sector of Poland.</p> <p>The main courses for developing digital competences:</p> <ol style="list-style-type: none"> 1. Digital transformation in public administration 2. Data analysis and decision making based on the data 3. Cyber security and information security 4. Digital project management 5. e-governance and digital communication services 6. The digital leadership digital and change management is conceived for the public sector leaders and focuses on the development of leadership skills in the digital era

Source: Own processing of the author based on the information from the official sites of the institutions (2023)

CONCLUSIONS AND RECOMMENDATIONS

Following the analysis presented above, we can see that different European states have various approaches as regards developing the digital competences of the civil servants and adapting to the digital environment. Some countries place a special emphasis on continuous training, promoting programmes and initiatives for teaching the servants how to efficiently use digital technologies, whereas others concentrate their efforts on recruiting staff with advanced digital and technical competences. Although the objectives set by the European Commission are shared, the differences in the content and extension of the digital training programmes are notable. Some states provide detailed courses in fields such as data analysis, artificial intelligence, and emerging technologies, while others concentrate on the basic skills in using digital applications and instruments.

An interesting observation would be the one regarding the institution in charge with the professional training of the civil servants with digital competences. Thus, we can notice that the states with better results in digital transformation have a specific institutional design related to digitalization (institutions whose object is digitalisation). The states with a slower progress as regards digitalisation have passed the process in the subordination of general institutions (with a subfield related to digitalisation). Moreover, it is noted that certain countries focus on adapting to the increasing technological requirements by promoting collaboration and knowledge exchange within the public administration. This encourages innovation and the development of customised technological solutions in order to improve public service efficiency and quality. As regards the evolution of the Organisational Culture, a significant change can be noted in the organisational culture with an emphasis on adopting technology and on flexibility in adapting to new digital solutions and instruments. While some countries have a smoother transition, others might encounter resistance or difficulties in embracing the new digital paradigms. This study can be

**HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY**

useful to the National Agency of Civil Servants in Romania and to the National Institute of Administration, in order to optimize the digital transformation process for the public institutions of our country. To this effect, several recommendations could be drawn out of this research for the public institutions in our country. For a common assessment base, defining a standard set of digital competences relevant for the civil servants would be a fundamental stage in the digitalization process. Also, we can recommend the analysis of the training programmes provided by each institution, with an emphasis on the specific content regarding digital competences and their periodic evaluation, in the sense of adapting according to the current and future needs of the public administration in the digital context. Since neither the literature, neither the analysis of the European institutional design offers a standard process to improve digital public services, a useful measure would be the development of clear criteria to measure the impact of the digital development programmes on the performance of the civil servants and on the administration's effectiveness. Not in the least, in this" abundance of innovations and technologies, it is important to integrate the citizens' perspectives into the analysis, assessing the degree to which the development of digital competences within the administration contributes to the improvement of the public services perceived by the citizens. These recommendations can offer a solid framework for the institutions who wish to approach digital transformation within public function management, placing a particular emphasis on the development of required digital competences.

In conclusion, the development of digital competences and the digital transformation of the public administration have a significant impact on the efficiency and quality of the public services. The countries that constantly invest in the digital development of the civil servants tend to have a more efficient administration, more accessible public services, and a more fluent interaction with the citizens. Our research has limits as it comes down to comparing the official data found in the literature and on the Internet pages of the public institutions specific to public management. Surely, a qualitative analysis based on in-depth interviews with people involved in the digital transformation process would be useful to go deeper into the subject of our research. The theme approached for this study is a highly topical one and could help the public institutions from Romania in accelerating the digital transformation, chapter where we rank last in Europe, according to the DESI classification (European Commission, 2022).

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**HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
IN EUROPE? A COMPARATIVE STUDY**

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HOW DO WE ENSURE THE QUALIFICATION OF CIVIL SERVANTS WITH DIGITAL SKILLS
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