Media Literacy 45+

Building advanced media literacy competences and digital skills of low-skilled adults 45+ through social media

IO1: Development of digital skills building framework through social media for low-skilled/low-qualified unemployed persons over 45

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Executive Summary

The present report is developed in the context of the first intellectual output of the project "MedLit45+", named "Development of digital skills building framework through social media for low-skilled/low-qualified unemployed persons over 45". The main aim of the project is to assist low-skilled/low-qualified unemployed persons over 45 years old to return to the labour market by developing and enhancing their digital competence. The outcome of this study will be the development of the digital skills framework on which the creation of an online resource platform will be based and render the basic tangible outcome of this project, together with the manual for professional that will also support unemployed persons.

Since digital competence is one of the key competences of lifelong learning and modern life in general, older people who did not have the opportunity to grow up in the current era of technological advances, face difficulties in dealing with digital tools. Consequently, those who are not familiar with the digital technology are more likely to be excluded from the labour market, the digital economy and even the digital society. In this context, it is of outmost importance for people who are unemployed and over 45 years old, to increase their possibilities to return to the labour market by developing their digital competence. An essential step towards such competence is that people become more familiar with social media, in order to develop their digital identity, their digital footprint and increase their chances in the recruitment process through the digital environment.

This report consists of five national reports/case studies by the five EU Member States (Greece, Italy, Portugal, Romania and Spain), which identified the national context of digital skills of citizens, the relevant policies and practices and the role of social media in the recruitment process. Additionally, ten (10) interviews with human resource managers were conducted in each country (50 in total), in order to identify the needs of organisations regarding the digital competence of their employees, the social media usage and their perceptions regarding older employees.

The main finding of this study is that three out of five countries (Greece, Italy and Romania) are far behind the EU 28 average regarding the level of digital skills, while Portugal and Spain perform better, especially in the younger age groups. However, in all countries, the level of digital skills of older age groups (45+) is low and there is a need to support people of older age, in order to avoid their exclusion from the labour market. In this vein, training opportunities are of great importance in a national, local and organisational level, in order to allow older people to keep up with the rapid technological advances and bridge the generations' gap.

In the interview, which constituted the research field of the study, participants highlighted the importance of digital competence in the modern workplace, as long as the gap between younger and older employees, regarding the expectations and the level of digital skills. As for social media, most organisations of our sample use social media platforms for advertising or communication purposes and to a smaller extent for the selection and recruitment process. Additionally, the human resources professionals contributed to the identification of the most significant digital skills an employee should have, in order to be functional in the workplace. From the digital competence framework that we chose as a methodology (DigComp 2.1), the answers of human resources managers allowed us to form

the basic elements for the online resource platform, which will be the second output of our project and the basic training tool for the low-skilled/low-qualified unemployed persons over 45.

In conclusion, the main aspiration of this study is to contribute to the overall European process to increase the digital competence of citizens and more specifically of those who are unemployed or had fewer opportunities to keep up with the technological advances. As the digitalization process is under implementation in all European societies, people with a lower level of digital skills are more likely to be excluded from the labour market and they generally have fewer opportunities to participate equally in the digital society. Initiatives like this of the project MedLit45+ will contribute significantly in the effort to create an open, inclusive and equal European society.

1. Introduction

Nowadays, Europe is in a process of transformation, due to great changes on political, social and economic terms. More specifically, economic downturns, aging societies, reform of social and welfare system and the refugee crisis are some of the key challenges that the EU is facing. In this context, another vital factor that affects the global society in general and Europe in particular, is the technologic advances and the ongoing digital transformation of modern economies and societies. As the New Skills Agenda for Europe (European Commission, 2016) points out:

> "*The digital transformation of the economy is re-shaping the way people work and do business. New ways of working are affecting the types of skills needed, including innovation and entrepreneurship. Many sectors are undergoing rapid technological change and digital skills are needed for all jobs, from the simplest to the most complex*". (pg. 2)

However, considering that to function effectively in a digital society more than low level skills are needed, about 45% of the EU population can be considered as insufficiently digitally skilled (having either low or basic digital skills). In Romania, 74% of the population does not have the skills they need to function effectively in the digital world, while the share is over 50% in Greece, Portugal and Italy and over 40% in Spain. (European Commission, 2017)

Digital technologies are key drivers of innovation, growth and job creation, and therefore digital competence is increasingly linked to participation in the labour market. Digital competence is not only about being familiar with digital technologies, but also about the way new technologies and online media are used and for which purpose.

The present report comprises of a short literature review of available models and frameworks for digital literacy. Its purpose is to review current models in digital literacy and identify the most appropriate model for developing digital literacy skills that can promote access to employment in low-skilled/low-qualified unemployed persons over 45 and more specifically to build the framework where the project MedLit45+ will be based on.

2. Digital Competence

Digital competence is one of the Eight Key Competences for Lifelong Learning (European Community, 2007). However, defining what digital competence means in practical terms is an arduous task. Systematic reviews of digital competence frameworks highlight the disparities between broad conceptual and general competence definitions (Ala-Mutka, 2011; Ferrari et al., 2012).

The European Commission in an effort to establish a common ground concerning the knowledge, skills, and attitudes constituting digital competence issued by a Delphi study[1] which brought together 95 experts on digital competence (Janssen et al., 2013). Their findings indicate that experts see digital competence as a conglomerate of knowledge, skills, and attitudes connected to various purposes (communication, creative expression, information management, personal development, etc.), domains (daily life, work, privacy & security, legal aspects), and levels. Digital competence, involves more than the mere knowledge of ICT and information management skills. Instead, it requires understanding the role of ICT in society, an understanding of the legal and ethical aspects involved in the use of ICT, and an ability for lifelong development of digital competence.

In a comprehensive analysis of frameworks by the Joint Research Center (JRC) (Ferrari, 2012) a single all-encompassing definition of digital competence has been proposed:

> *"Digital competence is the set of knowledge, skills, attitudes, (thus including abilities, strategies and awareness) that are required when using ICT and digital media to perform tasks; solve problems; communicate; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socialising, consuming and empowerment."*

This definition of digital competence highlights that digital competence relates to many aspects of life (work, leisure, empowerment etc.) and stretches beyond mere know-how and technical skills, as it refers to ethical usage and a critical attitude as well. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet. Even though this definition was proposed before the Delphi study was conducted, it is perhaps one that reflects more closely the key conclusions drawn from the study.

The definition can be broken down into different parts (Figure 1). The learning domains (i.e. knowledge, skills, attitudes etc.); the tools required for digital competence (i.e. ICT and digital media); the competence areas (i.e. manage information; create and share content etc.); the modes of competence (i.e. effective use, ethical use etc.); and finally the purposes in which digital competence is set to serve.

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[1] The Delphi method is a structured communication technique or method, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. The experts answer questionnaires in two or more rounds. After each round, a facilitator or change agent provides an anonymized summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel (Linstone and Turoff, 1975).

FIGURE 1: DEFINITION BREAKDOWN
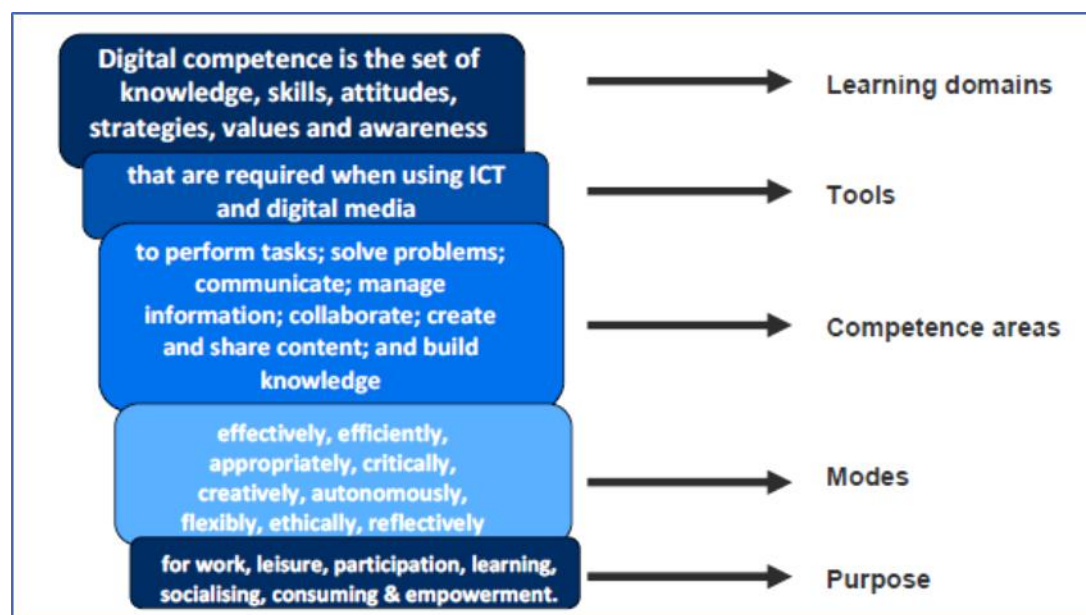
Source: Ferrari, 2012

Digital Competence and the generations gap

As digital competence is so important nowadays, one of the major issues is the familiarity of older people with new technologies. The traditional generations gap is more obvious in the field of technology, as the youngsters considered to be "digital natives" and the older "digital immigrants" (VanSlyke, 2003), because the former are born and grow up in the era of technological advances, while the latter did not have this opportunity. In this vein, digital literacy/competence was an issue for older workers when it came to comprehending and using new technologies. There are researches indicating that employers were more skeptical to select older people, because of alleged lack of competence and flexibility, and insecurity with the new technologies (Kadefors and Hanse, 2012).

Nevertheless, things are not genuinely negative for older people. It depends on the context, whether someone will have a digital competence disadvantage or not and also there are positive aspects and competitive advantages of older people, compared with the younger ones. For instance, there are studies showing that organizations of a highly educated workforce, tended to be more positive to older employees (Henkens, 2005). In addition, another study showed that older employees were more careful and willing to support younger employees and new recruits, adopting methods of mentoring for the organization (Nilsson, 2011).

To sum up, it seems to be a 'generations' gap' where older people have a competitive disadvantage in the labour market, compared to the younger ones, whether this is true or just a stereotype that happens to have an actual impact. Kadefors and Hanse (2012) found that one of the major barriers that keep older people away from employment is the factor of competences, while there is a tendency from employers to be skeptical about older

people's skills and adaptability. In other words, there are situational factors that hinder the older unemployed from the return to the labour market. One of these factors is digital competence and the scope of this study is to foster older peoples' digital competence and more specifically the unemployed ones, in order to make easier for them, the return to working life.

Social Media and Recruitment practices

Social Media is one of the most popular tools for communication, information and interaction in the digital world we live in. Social media are based in two main concepts, Web 2.0 and User Generated Content. Web 2.0 is a platform where "content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative fashion" (El Ouirdi et al., 2015, pg. 61), while User Generated Content refers to the various forms of media content created by end-users and are available in public. Based on these two foundations, social media became the dominant context where information, ideas and business are shared from people all over the world, "transforming the internet from a platform for information, to a platform for influence" (Hanna, Rohm & Crittenden, 2011, pg.8).

A recent report prepared by Statista gives a clear image about social media usage, with Facebook having over 1,870 million active users, 22% of the world's total population. LinkedIn boasts more than 450 million user profiles. Over 50 million businesses use Facebook Business Pages, while the 88% of businesses with more than 100 employees use twitter for marketing purposes. (Social media - Statistics & Facts, n.d)

In the job market context, more than 50% of candidates use social media to research companies they are interested in applying. From them, 67% of social media job seekers use Facebook and 35% use Twitter. On the other hand, 87% of recruiters use LinkedIn but only 55% use Facebook (Jobvite, 2016). In any case, social media nowadays is a significant tool for the recruitment and selection process for many companies and individuals who are looking for a job. More specifically, social media can be used for various professional purposes, such as personal branding, self-promotion and impression management (Chen, 2013; Zhao et al., 2013). Job seekers are displaying their educational background, work experience, competences, skills, achievements, hobbies, connections etc. through the various channels of social media.

In this context, recruiters try to filter all this information and identify the general characteristics of the personality, through the applicant's profile on the social media (El Ouirdi et al., 2015) in order to make the right choice for their company. Social media do not replace completely other e-recruitment tools, but actually considered to be more dynamic and interactive tools for recruitment (Girard, Fallery & Rodhain, 2014). Moreover, forecasts of the near future labour market arguing that employees will be selected and promoted, according to their online image and reputation capital on the social media, rendering impression management and self-presentation on social media a necessity for every candidate (El Ouirdi et al., 2015).

For all these reasons, users must be able to create a very good online profile in order to increase their chances in the selection process, and in order to achieve this, they must have at least a sufficient level of digital competence. To sum up, Internet nowadays is an interactive and continuously modified and ever-changing digital environment where users from all over the world create and share content mainly through social media platforms. In this vein, a significant part of the job market is digital as well, making digital competence a necessity for anyone who wants to increase his/her potential in employability. For this reason, the main scope of this project is to assist unemployed people 45 years old and older, in order to increase their chances of returning in the labour market by developing their digital competence.

3. Short Overview of Selected Frameworks

This section provides a brief overview of six selected frameworks based on relevance for the development of digital literacy of adults. It provides a short summary of the main objectives and purpose of each framework along with its key characteristics. The last presented framework (DigComp 2.1) is the one we chose as methodology in our field research and as methodology for the development of the online platform, which is the second output of the project. The reason for the selection of DigComp 2.1 is explained in the methodology part of the study.

DigEuLit

DigEuLit was a 2005-2006 joint initiative by the European Commission and the University of Glasgow, aiming to develop a general framework for Digital Literacy for the European citizens. The development of such a generic framework and set of tools would enable educators and learners to comprehend and apply digital literacy into educational practice and everyday life (Martin & Grudziecki, 2006). The output of the project was a series of publications, which highlighted the need for the individual to learn and use digital tools properly (Ferrari, 2012).

The DigEuLit proposed a three level model:

Level 1: "Digital Competence" encompasses skills, concepts, approaches and attitudes that helps the individual to apply the digital tools into their real life situation, through a critical, evaluative and conceptual method.

Level 2: "Digital Usage" refers to the application of digital competence within specific contexts, such as the work environment or other domains of life. In this level, the user is able to recognise the needs and use the appropriate digital competences and tools, in order to fulfil the task or problem.

Level 3: "Digital Transformation" is the highest level and allows the user to contribute and even transform the knowledge domain through innovations. However, this level is not of

the outmost importance for the average user and refers usually to professionals of the ICT. (Martin & Grudziecki, 2006)

ECDL

ECDL (European Computer Driving Licence), known also as ICDL (International Computer Driving Licence) outside of Europe, is a not-for-profit organization and among the leading authorities on computer skills and certification programmes worldwide. ECDL has a global network of national operators and offers a range of certification programmes, from entry-level to professional. The most common and widespread programme of ECDL includes modules of skills and knowledge development, in order to use applications such as word processing, database, IT security, spreadsheets, presentation, image editing and web editing.

There are three ECDL Profiles - Base, Standard, and Advanced - each represents a different level of digital proficiency, and proof of the skill level. Base profile certifies essential skills and covers the basic knowledge areas, while standard profile is the most flexible of the recommended profiles and ensures that the user can certify essential ICT skills and then demonstrate his/her competence in other modules as well. Finally, ECDL advanced profile enables the user to become a 'power user' in commonly used computer applications and address to professionals who want to be recognised as experts in these applications.

More specifically, the three profiles and the 21 specific modules are the following:

Base Modules

- Computer Essentials
- Online Essentials
- Word Processing
- Spreadsheets

Intermediate Modules

- Presentation
- Using Databases
- IT Security
- Online Collaboration
- Image Editing
- Web Editing
- Project Planning
- 2D Computer Aided Design
- Health Information Systems Usage
- ICT in Education
- Digital Marketing
- Computing
- Information Literacy

Advanced Modules

- Advanced Word Processing
- Advanced Spreadsheets
- Advanced Database
- Advanced Presentation (ECDL Profile, n.d)

Eshet Alkalai's Digital Literacy Framework

The conceptual framework of Eshet Alkalai has been developed in a series of articles that describe different aspects of digital literacy and on the various literacies that are necessary in the digital era. It proposes a conceptual framework with the skills appropriate for being digitally literate (Ferrari, 2012). Eshet Alkalai argues that digital literacy is an integrative conceptual frame that works as a survival skill today, allowing users to deal with a variety of obstacles and barriers that lie in the way to deal with modern technology and digital tools (Eshet-Alkalai, 2004).

More specifically, Eshet Alkalai's conceptual framework of digital skills as introduced in 2004 (Eshet-Alkalai, 2004) and updated in 2012 (Eshet, 2012) includes six kinds of digital skills:

1. Photo-visual digital skills (understanding messages from graphical displays)
2. Reproduction skills (utilizing digital reproduction to create new, meaningful materials from preexisting ones)
3. Branching digital skills (constructing knowledge from non-linear, hypertextual navigation)
4. Information digital skills (critically evaluating the quality and validity of information)
5. Socio-emotional digital skills (understanding the "rules" that prevail in the cyberspace and applying this understanding in virtual communication)
6. Real-time digital skills (the ability to process large volumes of stimuli at the same time, as in video games or in online teaching) (Eshet, 2012).

Main purpose and application of this conceptual framework of digital skills is to improve communication between learners and developers, by providing an assessment and evaluative tool for developing user-friendly digital products. In this context, empirical studies that tested this digital literacy model, identified a generations gap, as the younger users performed better than senior users in skills that require usability, such as photo-visual skills. On the other hand, older users performed better in those parts of digital literacy, which required critical thinking and creativity, such as reproduction of content. (Eshet, 2012)

IC3 Digital Literacy Certification

The Internet and Computing Core (IC3) Digital Literacy Certification is a programme managed, among others, by Certiport, a Pearson VUE business, which established in 1997 and is one of the major providers of certification services. Certiport exams are delivered

through a network of over 14,000 Certiport testing Centers worldwide. Certiport delivers more than three million exams each year in 148 countries and 26 different languages.

IC3 Digital Literacy Certification tests basic computer skills and understanding of the Internet in the school, work environment and life in general. It ensures that learners develop the critical entry-level skills needed to use the latest digital technologies. The latest version, IC3 Global Standard 5 (GS5) is comprised of three exams: Computing Fundamentals, Living Online, and Key Applications.

More specifically, Computing Fundamentals covers a foundational understanding of computing (hardware/software, mobile, security etc.), Living Online covers skills for working in an internet or networked environment (navigation, email, social media, communications etc.) and Key Applications that covers popular word processing, spreadsheet and presentation applications and the common features of all applications. (IC3 Digital Literacy Certification, n.d)

iSkills

Educational Testing Service (ETS) is a nonprofit educational testing and assessment organization, founded in 1947 in USA. ETS develops tests and exams in various educational fields in the USA and 180 other countries. One of the tests ETS developed but exists no more was the "iSkills", an online assessment tool aimed to establish literacy criteria for an outcome based test regarding ICT. The framework addressed to students and adults, providing the necessary skills for completing education, making career decisions and assist life transitions (International ICT Literacy Panel, 2007).

The assessment measures ICT literacy through the seven performance areas, which represent important problem-solving and critical-thinking aspects of ICT literacy skill. More specifically, the seven performance areas are the following:

1) Define - Understand and articulate the information problem in the digital environment
2) Access - Collect and/or retrieve information from various sources, such as Web pages, databases etc.
3) Evaluate – Judge the value of information from multiple perspectives
4) Manage – Organize and store information
5) Integrate - Interpret information by using digital tools to synthesize, summarize, and contrast information from multiple sources
6) Create: Adapt, design, or construct information in digital environments
7) Communicate - Disseminate information tailored to a particular audience in an effective digital format (Katz, 2007, pg.5)

The iSkills assessment was offered at two levels: core and advanced. The core level addressed to high school seniors and first-year college students. The advanced level aimed to assess ICT literacy in the transition phase from college to university. (Katz, 2007, pg.6)

DigComp 2.1: The Digital Competence Framework for Citizens

The European Digital Competence Framework for Citizens (DigComp) was developed by JRC (Joint Research Center) and published in 2013 by the European Commission. Specifically, is:

> "*a tool to improve citizens' digital competence, to help policy-makers to formulate policies that support digital competence building, and to plan education and training initiatives to improve digital competence of specific target groups. DigComp also provided a common language on how to identify and describe the key areas of digital competence and thus offered a common reference at European level*". (Vuorikari et al., 2016, pg.3)

Since the first version in 2013, DigComp has been established as a reference for the digital competence development across Europe. The latest version is DigComp 2.1 published in June 2017 and aims to expand the levels of the initial versions, providing also examples of use and practical implications. (Carretero, Vuorikari & Punie, 2017)

The first DigComp Framework had three proficiency levels, while the new one (2.1) has eight. These eight levels consists a wide and detailed model of assessment and training, aiming to develop to European citizens these digital competences necessary to their career and life in general. These eight proficiency levels have been identified through learning outcomes and an online validation survey. In table 1 we can see that the levels form a scale in which every level is a step to a more advanced level of digital competence. Moreover, the table analyses what tasks a user can handle in a specific level, his/her autonomy and which cognitive domain applies to each level. (Carretero, Vuorikari & Punie, 2017)

TABLE 1: DigComp 2.1 Proficiency Levels

Levels in DigComp 1.0	Levels in DigComp 2.1	Complexity of tasks	Autonomy	Cognitive domain
Foundation	1	Simple tasks	With guidance	Remembering
	2	Simple tasks	Autonomy and with guidance where needed	Remembering
Intermediate	3	Well-defined and routine tasks, and straightforward problems	On my own	Understanding
	4	Tasks, and well-defined and non-routine problems	Independent and according to my needs	Understanding
Advanced	5	Different tasks and problems	Guiding others	Applying
	6	Most appropriate tasks	Able to adapt to others in a complex context	Evaluating
Highly specialised	7	Resolve complex problems with limited solutions	Integrate to contribute to the professional practice and to guide others	Creating
	8	Resolve complex problems with many interacting factors	Propose new ideas and processes to the field	Creating

Source: Carretero, Vuorikari & Punie, 2017

Competence Areas

The core of DigComp 2.1 framework are the five general competences that compose the general areas in which the training material of the framework is developed, in order to create the context of digital competences. More specifically, the five competence areas and the relevant dimensions are the following:

Competence area 1: Information and data literacy

      1.1 Browsing, searching, filtering data, information and digital content

      1.2 Evaluating data, information and digital content

      1.3 Managing data, information and digital content

Competence area 2: Communication and collaboration

      2.1 Interacting through digital technologies

      2.2 Sharing through digital technologies

      2.3 Engaging in citizenship through digital technologies

      2.4 Collaborating through digital technologies

      2.5 Netiquette

      2.6 Managing digital identity

Competence area 3: Digital content creation

      3.1 Developing digital content

      3.2 Integrating and re-elaborating digital content

      3.3 Copyright and licences

      3.4 Programming

Competence area 4: Safety

      4.1 Protecting devices

      4.2 Protecting personal data and privacy

      4.3 Protecting health and well-being

      4.4 Protecting the environment

Competence area 5: Problem solving

      5.1 Solving technical problems

      5.2 Identifying needs and technological responses

      5.3 Creatively using digital technologies

      5.4 Identifying digital competence gaps (Carretero, Vuorikari & Punie, 2017)

The competence areas and the dimensions of each, form a detailed framework, which covers the wide range of digital competence, allowing the user to develop those skills needed, in order to handle new technologies and survive in the ever-changing digital environment.

4. Objectives, Research Questions and Methodology

The basic scope of the MedLit45+ project is to develop the digital & media skills of low-skilled/low-qualified unemployed adults of 45 years old and older, through innovative tools, so that they are motivated and be able to build a robust online professional identity to strengthen their access to employment, thus leading to social inclusion and employability.

The scope of the research in this report, which is the first intellectual output of the project, is to develop a methodological framework for building digital competence, mainly through social media. This framework will be the theoretical basis of the online resource platform, which is the second output of the project and aims to train low-skilled/low-qualified unemployed persons over the age of 45, so as to enhance their access to employment opportunities.

As the digital competence is one of the key competences in the working environment today and social media are becoming more and more important for recruitment and selection process, the research questions of our study are the following:

a) What is the level of digital skills of citizens in five European countries of MedLit45+ (Greece, Italy, Portugal, Romania, Spain) and what policies and training opportunities are available in those countries?
b) What digital skills are essential for the modern working environment?
c) What role do social media play in the recruitment and selection process?
d) What digital skills framework should be used for an online resource platform addressed to low-skilled/low-qualified unemployed persons over 45 years old?

In order to identify the answers to these questions we use both a quantitative and a qualitative research approach. In the desk research of each national report, we analyse the data of digital skills in the general population across various age groups, in order to identify a possible generation's gap in digital literacy. Additionally, we analysed the relevant data in order to identify a possible correlation between unemployment and digital competence. Moreover, with the case study method we identified in the five European countries (Greece, Italy, Portugal, Romania, and Spain) training opportunities and policies regarding digital competence development.

In the second part of each report, we conducted interviews with 10 human resources managers in each country (50 in total), in order to identify their perceptions and needs of employees' digital competence, as long as the social media usage in their organisation. The research tool used was a structured interview guide, based on the DigComp 2.1 digital competence framework. More specifically, the interview guide was separated in 11 sections; the first two sections consist of standard questions regarding demographic information, while section 11 provided a set of open-ended questions. The intermediary sections (i.e. sections 3 to 10) consisted of multiple-choice questions. In this part, we used the five competence areas of DigComp 2.1 framework, in five different sections with questions, so to identify in detail the most significant digital skills that organisations expect from their employees. The selection of DigComp 2.1 as the theoretical framework of our study was based on the idea that DigComp is the current "official" Digital Competence framework of European Union and additionally a detailed and tested educational and evaluative tool.

From all five national reports, we proceeded to a transnational analysis, in order to identify the main themes, common issues and differences between the countries and we validated the interview results through a statistical analysis, in order to select and verify the content of the online resource platform. The sample of our transnational analysis (50 participants) is a reliable number of human resources managers and professionals, which is an added value in the common European process of enhancing digital literacy of the citizens and more specifically older people. It also contributes to the identification of the digital literacy needs of the modern organisations.

For the transnational analysis, the research methodology we followed consisted of four parts:

a) Definition of Digital Competence, Digital skills frameworks and social media and recruitment practices;
b) The national reports/case studies of 5 EU Member States (Greece, Italy, Portugal, Romania and Spain) regarding digital skills data, training opportunities, policies and social media in recruitment process;
c) Transnational analysis of the five national reports; Results from desk and field research;
d) Statistical analysis and validation of the DigComp 2.1 competence areas.

5. Transnational Analysis

5.1 Main Results from the Desk Research

From the five national report's desk research that the study consisted of, we could identify some common themes, regarding digital literacy. As digital competence is one of the eight key competences for Lifelong Learning of the European Union (European Community, 2007), in all countries of our study there are public policies and multi stakeholder partnerships that aim to develop and increase digital literacy in the general population or in specific target groups. These policies and practices have been launched for some years now, but unfortunately, the level of digital literacy remains low for the majority of citizens in the countries of our sample.

More specifically, Italy is far behind the EU average regarding those who have above basic digital skills, even in the younger age groups (16-24, 25-34). Moreover, there was a minor or no change between the last two consecutive years that we have data for Italy (2015 and 2016), regarding the digital skills in all age groups. Another unique characteristic of Italy is the territorial gap, as Northern regions perform better than Southern, regarding digital skills. However, there are public initiatives in order to increase the level of digital skills, as several public bodies are participating in the implementation of the Italian Digital Agenda, which aims to foster digital skills in education, digital identity and electronic transactions. In the labour market domain, digital literacy is associated with lower unemployment in Italy, similar to the wider EU context. Italy is overall characterised by an inadequate digital culture, which accompanied by a very low innovation culture.

Romania, being one of the younger EU Member States and coming from a different social and economic background, performs low in digital economy and digital society indicators. The percentage of Romanians with above basic digital skills is almost three times lower than the EU 28 average, while business digitalization is also in a low level. However, Romania experiences an increasing of ICT in people's general life and in the connectivity domain, something that creates potential for the digital competence of the Romanian citizens.

Digital literacy in Greece is below the EU average in all age categories and in overall, while in the European Commission's annual 'Digital Economy and Society Index' for 2017, Greece ranks 26th and so belongs to the cluster of the low performing countries. Despite Greece is an old EU Member State, it seems that some structural issues and the current economic recession affected the digitalization process. Interestingly enough, the rate of unemployed people with above basic digital skills is almost 10 percentage units lower than the EU average, something that probably explained by the high overall unemployment in Greece, that excludes from the labour market even those with a high level of digital competence.

On the other hand, Portugal performs very well in digital skills, especially in the younger age groups. More specifically, in the age group 16-24, Portuguese who have above basic overall digital skills are 15 percentage units above EU average and in the age group 35-44, Portugal is 7 percentage units above. However, in the older age groups (45+) Portugal is below EU average, something that verifies the traditional generations' gap in Portugal as well. Regarding the digital economy, the potential of Portugal is high, as according to estimations, Portugal will grow job creation in the digital area, reaching a growth rate of 21 to 30% (Costa, 2017).

Similarly, Spain is close to EU average in most age categories regarding digital skills and in the skills category "above basic digital skills" in the age group 16-24, is 6 percentage units above the EU average. Additionally, in the most recent three years period (2015-2017), the level of digital skills of Spanish people have been slightly improved in overall and in each age category. In the market domain, Spain is one of the most important ICT markets by volume in Europe, while in the Digital Economy and Society Index (DESI) of 2017, Spain ranks 14th out of the 28 EU Member States.

Finally, regarding training opportunities there are policies and initiatives for the development of digital skills to citizens, in all countries of our study. Since all countries are EU Member States, they implemented the Digital Agenda of the Europe 2020 Growth Strategy, in order to increase digital literacy of citizens and the digitalization of the economy and the market. In this context, the governments launched national agendas and strategies, with public institutions leading the way in the establishment of digital literacy training programmes. Moreover, multi-stakeholder partnerships between public institutions (universities, municipalities) and private enterprises, offered various opportunities of training to the general population and specific target groups (students, unemployed, older people etc.) in all the countries of our study.

5.2 Field Research – Demographics

The sample of our study consisted of 50 participants in total (10 per country) who were human resources managers or general managers responsible also for the recruitment and other human resources processes. These managers work in organisations from various sectors of economy but most of them come from the services sector. The mean age of all participants is 44,9 years old, while interestingly enough the majority of human resources managers of our sample are female. More specifically, 29 participants were female and 21 male.

Figure 2: Gender of Participants
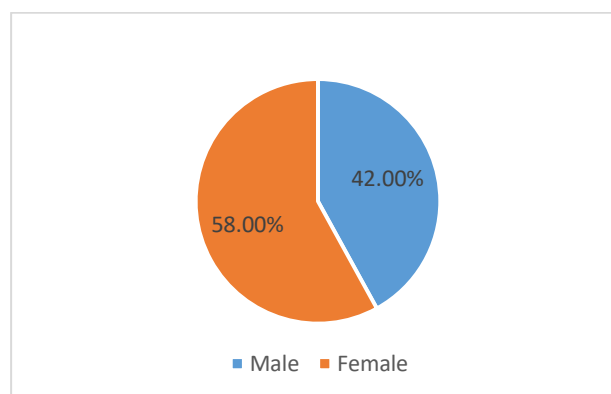
Regarding their educational background, the majority of participants hold a bachelor degree, while 17 of them have also acquired a master degree as well. In figure 2, we can see the education background of participants in percentage.

Figure 3: Educational level of HR Managers
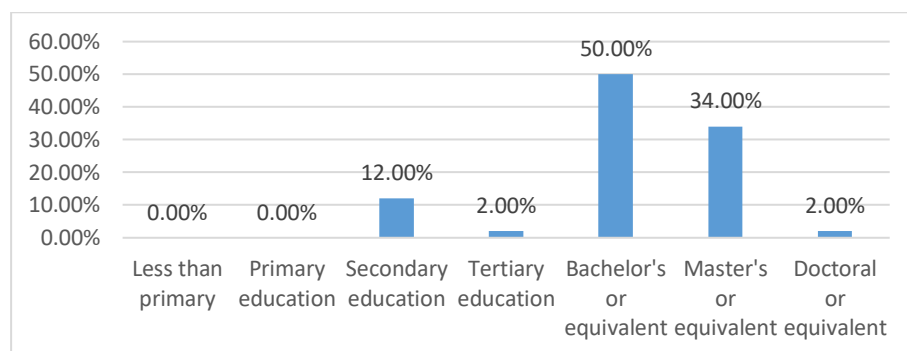
Most of the participant's organisations belong to the Small and Medium Enterprises (SMEs) category, as half of them (25) have less than 50 employees and actually belong to the small size enterprise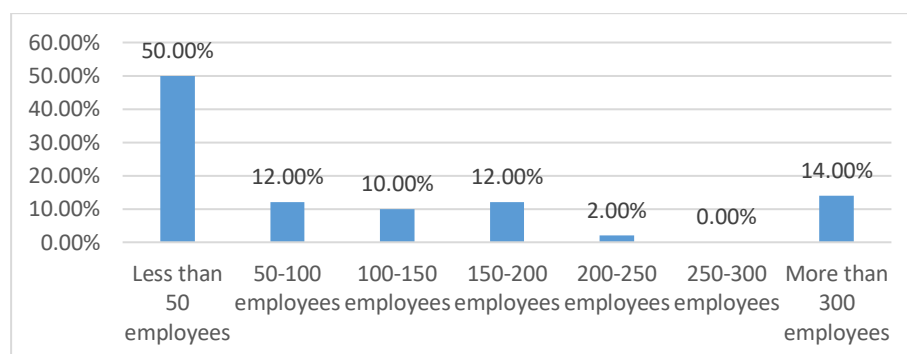s according to the EU classification, while just seven of them have more than 300 employees. In figure 3, we see in percentage the size of organisation of our sample, according to the number of employees.

Figure 4: Organisations' size

Regarding the experience of the human resources managers that we interviewed, the mean number of years of experience in their current organisation is 11,67, while the mean number of years of experience in the human resources management field is 14,16. Consequently, we can consider our sample as reliable for the reason that they have a long experience in business and human resource management field.

5.3 Main Results from the Field Research

From the interviews' results, we could come up with some interesting main themes across the countries of our study. The number of 50 Human Resource managers from five EU Member States is a reliable sample, in order to work as a strong point of our research. However, there are differences across countries, as every case is a unique context with specific social and economic characteristics. For instance, in Portugal there are no human resources departments in most of Portuguese small and medium-sized enterprises. Usually, the managers or directors of these enterprises carry out the task of human resources management and recruiting. This phenomenon is more or less typical for most of the

Southern European countries. However, the presence of a human resources department depends also on the size of the organisation, as for the large organisations is more common to have such a department.

Most human resources managers in all countries highlighted the importance of digital competence in the modern workplace. However, many of them also argued that the level of digital competence needs for their organisation, depends on the work position and so they do not have the same digital skills expectations from all the employees. Nevertheless, regarding the age factor, a main outcome from most reports is that younger people are expected to be more skilful in the digital technologies, while an essential conclusion from all reports is the need for employees 45+ years of age, to upgrade their digital competences and skills in order to get access to the job market. In overall, the majority of participants verified the "generations' gap" regarding digital skills, arguing that younger people are more familiar with digital technologies, compared to the older ones.

Regarding social media usage, there is a common fact in all countries, that social media are not widely used yet from organisations in the recruitment or selection process but the potential for the near future is high. Most organisations use social media for advertising and internal or external communication, such as Facebook and Skype. In some cases, social media platforms are used from human resources managers in order to assess or select job candidates. From those who use social media in the selection and recruitment process, most of them tend to prefer LinkedIn as more professional and career-oriented platform, instead of Facebook or Twitter

5.4 Assessment Results and Framework Adaptation

As mentioned above, the research tool of our field research was an interview questionnaire. The first part of the questionnaire included demographic data and the second part was based on the DigComp 2.1 digital competence framework, which targeted the identification of employees' level and type of digital skills, needed from the organisations. The questions of this section were based on the five competence areas of DigComp 2.1 framework (information and data literacy; communication and collaboration; digital content creation; safety and problem solving) and their various dimensions (see page 16). In this context, it was important that we verified specific dimensions of digital skills that are essential for the organisations, and which as a result can form the content of the online resource platform. To assess the importance of each dimension we used a Likert scale from 1 to 7 (where participants could choose 1 as "not important" and 7 as "very important"). We then scored participants' answers to conduct a quantitative statistical analysis in order to identify the most important dimensions that will be included in the platform.

For the statistical analysis, we used the 'Wilcoxon Test' in order to measure the critical value of each question and test its significance. Since the scale was from 1 to 7, a median of 4 served as the criterion of statistical significance, with questions with a median of less than 4 being rejected as not important to be included in the platform. In other words, these specific dimensions of digital skills with lower median than 4, were valued from participants as not important for them. All dimensions that were valued as not important would be excluded from the content of the platform and those skills would not be targeted. Consequently, we had to reject some of the digital skills from the area of content creation,

as the majority of participants valued digital skills such as programming language, multimedia, web development and other complex functions, as not important.

Therefore, the most important digital skills for the average employee in modern organisations, according to the answers of the participants of our study are the following:

- Information processing (search engine usage and save and store files and content)
- Communication and interaction with other users (e-mail, chat, social media, social networks and sharing files)
- Basic content creation (text, tables, images and audio files)
- Problem solving (basic functions, such as re-install/update program, check internet connection and find support).
- Safety (basic protection measures, awareness of possible threats)

This will be the main axis where the second output of the project, the online resource platform, will be based on, in order to provide a tailor-made, target-oriented training to the low-skilled/low-qualified unemployed persons over the age of 45. The five competence areas and the relevant dimensions will be adapted according to the target group needs, with a special reference to the social media usage, which is the basic element of our project methodology.

There is a need to develop social media literacy of older people, since perceptions of the participants in our study about the level of skills in social media is more favourable for the younger people. More specifically, in figure 4 we can see that in a scale from 1 to 7 (where 1 is poor and 7 is excellent) the younger age group (less than 25) is considered to be the most skillful in social media, while our target group (45+) was valued mostly from 3 to 5 in the assessment scale. The older age group is the one with the lowest rate regarding social media literacy.

Figure 5: Social Media literacy according to age group
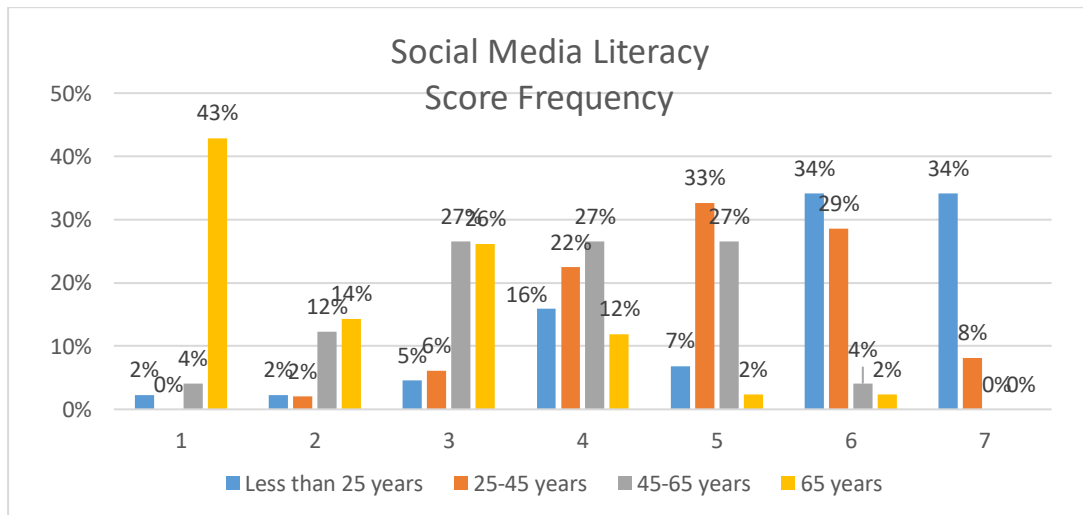
In this context, the need for older people to keep up with social media advances is greater than ever. Social media do not serve only as platforms of communication, but as our literature review and as our study indicates, critically they constitute useful tools for the labour market. Therefore, there is a need to develop and enhance social media literacy in

the general population and more specifically to those older than 45, in order to participate equally in the digital society and digital market. In this vein, in the content of the online resource platform we are going to provide a special module, regarding social media and their usefulness in the job search.

6. Conclusions and Next Steps

The main point of our study is the fact that digital competence is one of the key competences necessary for the modern workplace and will be even more significant in the near future. Modern organisations demand a wide variety of digital skills from their employees and those who cannot deal with digital technologies face the threat of marginalization. Moreover, social media is a basic column for the development of the new digital society, in which participation requires a sufficient level of digital skills. Additionally, social media literacy will not be useful only for the participation in the digital society, but also in the labour market, since more and more organisations use social media in selection and recruitment process.

For these reasons, what this study highlights is the need for a more inclusive and open digital society. In this vein, the digital skills building framework we adopted (DigComp 2.1) and the adaptation we made for the scope of our project, aims to create a more target group-oriented framework in the online resource platform that aspires to be a useful training tool for the low-skilled/low-qualified unemployed persons over 45. Basic scope of this project is to assist those people develop digital competence and return to the labour market with a higher level of digital skills and greater self-confidence.

The next step of our project is the development of the online resource platform that will be based on the digital competence framework of this study. The content of the platform will be based on DigComp 2.1 framework and the relevant modifications we made, in order to be adapted to the special needs of our target group. Finally, the third output of the MedLit45+ project will be the development and dissemination of manual for professionals, aiming to support unemployed persons over 45 years of age. By the end of the project, the unemployed persons and the human resources professionals that will benefit from our activities could be able to make a real difference in their career and hopefully in the labour market.

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5. Annexes – National Reports

Annex 1: Greece

Introduction

Greece has been under a severe economic crisis since 2010, which affected both the labour market and the digitalization process of economy. Additionally, the level of digital skills of Greek citizens is behind the EU 28 average, while Greece belongs to the category of the low performing countries in the European Commission's 'Digital Economy and Society Index'. However, there are initiatives from various public and private organisations, in order to develop digital skills to citizens. The enhancement of digital skills of the wider population will create an open and more inclusive digital society and economy in Greece. A good level of digital competence nowadays is a requirement in most of the job positions in the labour market, regardless of age or other characteristic. The digital era we live in, demands from every individual to acquire a good level of digital skills in order to be an active member of digital economy and digital society. In this regard, the present report aims to identify the relevant context of digital skills, the policies and practices regarding digital skills training and a possible generations' gap. Finally, the target group of this study is low-skilled/low-qualified unemployed persons over 45, who have fewer opportunities to develop their digital competence.

This study's research consists of a desk and a field research part. For the desk research part, a literature review has been conducted, together with a review of relevant websites and other digital sources, in order to identify the national context of digital skills and training. In the field research part, interviews with human resources managers has been conducted, in order to identify modern organisations' needs, regarding digital skills of employees and the usage of social media for selection and recruitment process. Basic scope of this study is to contribute in the transnational analysis of the five case studies of the MedLit45+ countries, which will be used as methodology for the development of the online resource platform that will assist low-skilled/low-qualified unemployed persons over 45, to develop their digital competence.

Chapter 1: Setting the Scene: Digital Literacy in Greece

TABLE 2: DIGITAL LITERACY IN GREECE AND EU (28 COUNTRIES) IN 2017

Age Group	EU/Greece	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	European Union (28)	26%	26%	31%	1%
	Greece	23%	24%	22%	1%
16 to 24 years old	European Union (28)	15%	25%	57%	0%
	Greece	10%	46%	40%	0%
25 to 34 years old	European Union (28)	21%	29%	46%	0%
	Greece	22%	30%	42%	0%
35 to 44 years old	European Union (28)	27%	29%	36%	1%
	Greece	29%	31%	27%	0%
45 to 54 years old	European Union (28)	30%	29%	27%	1%
	Greece	30%	25%	16%	1%
55 to 64 years old	European Union (28)	31%	25%	16%	1%
	Greece	27%	13%	8%	2%
65 to 74 years old	European Union (28)	26%	18%	7%	1%
	Greece	13%	6%	2%	1%

Source: Eurostat, 2018

Digital literacy in Greece is in overall below the EU average. In table 1 we see that Greece is close to EU average in terms of the Individuals who have low overall digital skills and those who have basic digital skills. However, the problem is that in the category of those who have above basic digital skills, Greece is 9 units behind the EU average, which means that Greeks are less skillful than the average European, in terms of digital competence. The above basic digital skills allow the individual to handle with digital technologies easier and so is the most reliable indicator to measure the actual level of digital literacy in a country. Regarding the age groups, we see that the "digital natives/digital immigrants" phenomenon (VanSlyke, 2003) is happening in Greece and in Europe as well. Younger ages are much more familiar with digital technologies, compared to the older age groups, making the policies for training

older people in digital skills a necessity all over Europe. In Greece now, we see that in categories of basic and above basic digital skills, Greeks are in all age groups behind the EU average, something that explains also the big difference in the all individuals category. More specifically, regarding the target groups of our study (45 plus) we identify a significant gap between Greece and EU average. In the age group 45-54, Greeks with above basic digital skills are 11 units behind the average European. This fact confirms the significance of the MedLit45+ project, which aims to raise awareness and help towards the direction of enhancing digital competence of people 45 years old and older.

TABLE 3: DIGITAL LITERACY IN GREECE BY AGE GROUP FOR 2015, 2016 AND 2017

Age Group	Year	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills
All Individuals	2015	22%	28%	16%
	2016	23%	26%	19%
	2017	23%	24%	22%
16 to 24 years old	2015	13%	52%	31%
	2016	8%	44%	45%
	2017	10%	46%	40%
25 to 34 years old	2015	18%	44%	32%
	2016	19%	39%	35%
	2017	22%	30%	42%
35 to 44 years old	2015	28%	35%	20%
	2016	29%	35%	21%
	2017	29%	31%	27%
45 to 54 years old	2015	32%	24%	11%
	2016	35%	24%	14%
	2017	30%	25%	16%
55 to 64 years old	2015	25%	10%	4%
	2016	24%	13%	5%
	2017	27%	13%	8%
65 to 74 years old	2015	8%	3%	1%
	2016	11%	3%	1%
	2017	13%	6%	2%

Source: Eurostat, 2018

In table 2 we can see the progress of the digital skills level of Greeks in a period of 3 years. A positive finding is definitely the rise of 6 percentage units in the category of above basic digital skills, which means that Greeks in overall improved their digital competence, in this small period. However, even if there is a small progress in all age groups, the gap between younger age groups and older is still great. Those individuals who are above 45 and have above basic digital skills are still very few, making them more vulnerable in the use of new technologies and consequently in the labour market as well. Another interesting finding in table is also the fact that the percentage of the age group 45-54 with basic digital skills remained actually stable, which identifies the lack of effective policies and strategies to develop and enhance digital competence in people of this age group.

TABLE 4: DIGITAL LITERACY AND UNEMPLOYMENT (2017)

Age Groups	European Union (28)		Greece	
	All Individuals	**Unemployed**	**All Individuals**	**Unemployed**
Individuals who have low overall digital skills	26%	33%	23%	28%
Individuals who have basic overall digital skills	26%	24%	24%	27%
Individuals who have above basic overall digital skills	31%	20%	22%	21%

Source: Eurostat, 2017

Table 3 is significant for our purpose as it examines the unemployed people. Both in Europe and in Greece we see that the percentage of those unemployed who have low digital skills is high. This explains the fact that people with low overall digital skills have a disadvantage in the labour market and this is common in all European context. The other significant finding from this table is the almost same percentage of both general category and unemployed, from those who have above basic digital skills. Unemployed people in Greece with above basic digital skills is one percentage unit higher from the EU average of unemployed people with this same characteristic. This is slightly awkward, as Greece is far behind Europe in most of categories. A possible explanation for this might be the high percentage of general unemployment in Greece (the highest in Europe) that excludes from labour market even people with a good level of digital competence.

Literature Review

Technology and computers nowadays are parts of our everyday life in almost all levels. From communication and business, to education and entertainment. Moreover, ICT skills are essential in the labour market, for the reason that most of the business processes nowadays requires a minimum level at least of digital competence. In this vein, young people who grew up and growing up in this constant technological progress, are considered to be "digital natives", while people from older generations may be referred as "digital immigrants" (VanSlyke, 2003). Consequently, these "digital immigrants" might feel inferior and be most fearful of technology. Various studies examined the barriers of older people regarding technology. For instance, Jimoyiannis & Komis (2006) identified four correlated dimensions regarding adults' attitudes about ICT: a) anxiety, resistance or cautiousness of using technology; b) self-efficacy and confidence in the ability to use ICT; c) liking to use computers and ICT tools; and d) value and usefulness of using ICT in personal life.

For those adults who are more reluctant and resistant to technology, there is a need to introduce them to digital literacy, in order to participate equally in the labour market. Improving adult digital competence would bridge the digital gap between generations and would allow more people who are now excluded and marginalized, to be integrated in the modern social life (Jimoyiannis & Gravani, 2012). The increasing of digital literacy in a wider part of the population will reduce inequalities and will ensure the access of more people into social, economic and political life in the information age. Moreover, as digital competence and ICT skills are essential for businesses nowadays, a more inclusive approach

in digital competence education, will allow people from older age groups, to strengthen their position in the labour market and a better access to employment.

In the European Commission's annual 'Digital Economy and Society Index' for 2017, Greece ranks 26th and so belongs to the cluster of low performing countries. This means that only Romania and Bulgaria are lower, while Greece is in general in the underachievers of Europe, regarding digital economy and society. More specifically, in terms of connectivity, Greece features wide availability of fixed broadband, but transition to fast broadband connection is slow and prices are relatively high, while Greece remains last in NGA coverage per household. Regarding human capital, though more people are using internet nowadays, ICT skills levels remain low. However, a positive sign for the future is the number of science and technology graduates, which is relatively high. Additionally, Greeks are active internet users of social networks and online content, while internet-banking usage is growing as well. (EC, 2017)

The integration of Digital Technology in businesses and the public sector services is progressing, but slowly in comparison with other EU countries. Companies use social media but they are not proceeding in more advanced new technologies, such as cloud and RFID. More and more SMEs use electronic sales channels, but mainly in a national context. Regarding the public sector, the number of eGovernment users is slightly progressing, but the delivery of online public services is still below EU average. (EC, 2017)

According to the 2016 OECD Adult Skills Survey (PIAAC), Greece performs well on both literacy and numeracy, although it is slightly below the OECD average. On the contrary, performance in problem solving is very low, something that shows a lack of transversal and digital skills. Moreover, only 2.5% of adults in Greece attain Level 3, the highest proficiency level, in problem solving in technology-rich environments, which is the fourth lowest percentage among all OECD countries (OECD average is 5.4%). Some 17.4% of adults in Greece reported no at all prior experience with computers (compared to the OECD average of 10%) and 2.8% failed the ICT core test (compared to the OECD average of 4.7%). These and some other facts that comes out from OECD survey, highlights a major issue of digital literacy and digital competence in Greece. In terms of working conditions, workers in Greece use their numeracy and problem-solving skills at work as frequently as the average worker across OECD countries. The problem is that their proficiency in these skills is not reflected in their compensations, as in other OECD countries. (OECD, 2016)

Social Media in Greece

Social media becomes more popular every year in Greece, following the worldwide trend of the increasing social media usage. According to an annual research conducted by the Economic University of Athens (E-Business Innovation, Strategy and Entrepreneurship) on social media and digital marketing, Greeks spend on average 80 minutes per day on the internet. 62% of the Internet users prefer the mobile application of Facebook, which remains the top platform with at least 6,7 million accounts, while the 53% use the web platform. 50% of the users reported that they use Facebook to connect and communicate with friends, while the other half use Facebook to interact, chat and share. Interestingly enough, Greeks are becoming more concerned about the quality of the information they

receive and the time they spent on the platforms. (Annual study of e-commerce in Greece, 2017)

Another very popular social media platform is YouTube. The majority of people uses the platform to listen to music (92%). The popularity of Twitter is also increasing. One out of four users use Twitter to stay up to date with news (eltrun.gr). Moreover, the annual Digital News Report by the Reuters Institute for Journalism reveals that Greeks distrust news media more than any other country in Europe. In fact, Greece is the only country in the world that trusts social media more than news media. There are wide variations in trust across countries. The proportion that says they trust the news is highest in Finland (62%), while the lowest is in Greece and South Korea (23%). (Reuters, 2017)

Regarding other uses of social media, 19% of the population interact with facebook business Pages, out of which 12% like brands and 8% products. In addition, internet users declare familiarity with search engines, as eight out of ten report that they often visit the organic results of the search. In this vein, modern businesses demand from their employees to acquire SEO techniques. As for the online sales, Greeks are using the internet more often to buy products and services. Travel services, accommodation, tickets, gadgets and food are the top categories Greeks prefer to buy online. (Annual study of e-commerce in Greece, 2017)

Even in an older survey that took place in Greece (Nikolaou, 2010) regarding the use of social media in business, there were findings that 90% of workers were using social media, while Facebook and LinkedIn were the most popular social media amongst workers with a penetration of 90% and 63%, respectively. LinkedIn was the most widely used social media platform for professional use with 79% penetration in companies' staff and it appeared to be the most preferable site for job seeking.

Among younger business professionals and businesses whose customer base is young people (cafes, restaurants, clubs, etc.), social media usage is more frequent. As far as the do's and don'ts in social media are concerned, most Greeks prefer to use their real name and believe that speaking to people you do not know in real life is not acceptable. The majority also thinks that it is inappropriate to criticize others in abusive terms, to swear and use foul language and to post pictures of people without permission. (Social media guide, 2014)

Recruitment, screening and selection practices

According to a study that was carried out in Greece (Nikolaou, 2014), age plays a role regarding usage of social media in job related activities. The older job seekers using LinkedIn while younger job seekers, but also HR professionals, are using Facebook and job boards and they are spending more time online and in the social media. Regarding the educational level, LinkedIn is more widely used by people of higher educational backgrounds, who also visit it more regularly. However, Job seekers in Greece can distinguish between the importance of LinkedIn and Facebook, and so they consider the former as more effective than the latter in job search process. In parallel, HR professionals as well, although they are using both social media platforms, they acknowledge that LinkedIn is more effective for recruitment and screening purposes and so they are using it more extensively (Nikolaou, 2014). Nevertheless, in another study the main finding was that although the use of internet

in recruitment process has been welcomed from human resource managers, the use of social media is not so widespread in most cases, with interviewing remaining by far the most common selection practice they rely on (Cholopoulos, 2015).

Policy and Major Stakeholder Initiatives

In the context of the European Commission's strategy to improve e-skills in all member states, Greece initiated certain measures to develop digital competence and e-skills in all citizens. More specifically, Greek government launched the Lifelong Learning Act of 2008, in which digital literacy is a major part of the lifelong learning and continuous professional development of citizens. In general, strategies and policies towards this direction have been developed mainly from public sector's organisations through the training of adults. Other institutions that launched training programmes regarding ICT literacy and digital skills were local authorities (municipalities), VET centers and universities.

The public institution that provides services towards this direction is EOPPEP, the National Organization for the Certification of Qualifications and Vocational Guidance, a statutory body that ensures qualitative lifelong learning services. More Specifically, EOPPEP develops and implements non-formal education programs, including initial and continuing vocational training and adult education, and provides scientific support to Vocational Guidance & Counseling services in Greece. One of the Certifications of Qualifications is 'Licensing of Providers for the certification of qualifications & Providers for computer skills certification'. (eoppep, n.d)

From a study conducted in 2014 from empirica, on behalf of the European Commission, the main projects regarding digital skills that has been identified in the Greek context were the following:

- One of the first projects on digital skills training of citizens was the 'Heron project' that was aiming to train adults in basic computer applications such as MS Word, Excel, Internet and E-mail. The project aimed to train 76,800 adults in Greece through 4,960 training centers in the period from 2008 to 2014. Other projects were focused on specific target groups, such as training of teachers in ICT pedagogy, training of public servants on issues and applications with ICT and the 'Certification of knowledge in ICT-skills for all students in 3rd grade of High School'.
- Another similar project, which was more target oriented though, was the "Training of teachers in ICT pedagogy", launched by The Greek Ministry of Education & Religious Affairs, Learning and Religion (MNELR) and the Pedagogic Institute of Greece (PI) together with the Academic Institute of Research and Technology. The project started in 2008, covered the whole country and aimed to meet the increasing demand for applying ICT pedagogy in education. It focuses mainly on in-service training of Greek primary and secondary education teachers in ICT-applications that help the teaching process.
- Lastly, regarding the training on ICT skills of public servants in general, the Interbalkan Institute, since 2009, offers 50 hours training on new technologies for public servants across six geographic regions of Greece regarding electronic government, basic computer skills, security of networks, advanced computer skills

and specialist computer skills and specialist computer applications. (empirica, 2014)

According to the same report report (empirica, 2014), until then were 170 different projects regarding digital economy and digital society. The Digital Convergence Initiative and Information Society Monitoring Scheme for the period 2007-2013 had a total budget of 2 billion euro and aimed to develop the effective and sustainable exploitation of ICT in the Greek economy. More specifically, the main targets were: digital supporting knowledge; digital consumer; digital protection of the natural environment; a digital security; support for digital work; support the digital quality of life; digital support and social and economic integration and participation; support for digital openness and specialized technological activities in a local-regional level. The project included also assistance in the secondary education, funding of businesses and overall a target of 300.000 beneficiaries throughout the whole project.

In the wider context, Greece needs to keep up with the global trends of the digital era, in order to improve public administration, labour market and economy in general. According to a report for the Foundation for Economic and Industrial Research, Greece should aim for the following digital projects:

1. digital signatures to public administration,
2. development of open data,
3. improvement of e-skills,
4. enhancement of entrepreneurship and innovative ecosystem. (Tsakanikas et al., 2014)

The implementation of these particluar four digital projects would render great benefits for the national economy in terms of exports, country's competitiveness & transparency, job creation, innovation, e.t.c. The adoption of a relevant strategy was influenced by the strategic framework in digital growth designed for the period 2014-2020 at European and Greek policy level of analysis. The key priority areas under examination include:

1. enhancement of e-skills
2. development and use of digital solutions regarding the transactions between public administration and citizens/businesses
3. development of open data
4. creation of new opportunities for innovative SME's and start-ups

The main barriers for efficient implementation of strategies aimed to the "digital" improvement of Greece refer to policy-driven limitations, weaknesses related to technical design and planning, and complex/time consuming processes. (Tsakanikas et al., 2014)

In this context, the 2014-2020 National Strategic Reference Framework (NSRF) is a major policy, supported also by EU funds, that is expected to contribute significantly in ICT market growth in Greece. The implementation of the new strategy will rectify the structural weaknesses of the country and will improve the overall digital economy and society. The framework with the time horizon 2014-2020, consists of 20 projects, of which 7 are sectoral and 13 regional, with approximately 28 billion dollars in funds to be allocated. (Greece-IT, 2017)

Additionally, Greek government recently has launched the 'Syzefxis II' project, which aims to upgrade the digital infrastructure of the public sector. More specifically, the government will deploy a wider network of fiber connections, in order to reach approximately 34.000 important stakeholders that operate with the public sector. The same project will implement wireless access to 55.000 government smartphones. The overall budget of the project estimated to be approximately 684 million dollars and EU will provide the 191 of them. (Greece - Information and Communications Technology, 2017)

Selected multi-stakeholder partnerships

Apart from the Greek government's and other public institutions' initiatives, several projects in the form of multi-stakeholder partnerships carried out in Greece, regarding the improvement of digital competence and digital literacy for citizens. One of the leader organisations worldwide in ICT, Microsoft, together with OAED (Labour force Employment Organization of Greece), developed a project that offers digital skills training to unemployed persons without charge all over Greece. Unemployed people who were registered in OAED were able to have access in the Microsoft international platform and benefited from a multi-dimensional digital skills training. Moreover, another project launched by Microsoft and the Alumni Engagement Innovation Fund (AEIF) of the US Department of State, called "Tech Talent School" and aimed to assist students, young and unemployed people, who want to enhance their skills and familiarize with Programming, Design and Digital Marketing. Finally, the Microsoft Innovation Center in Greece, offers, among others, opportunities of e-skills training and partnerships between various stakeholders from the academic and business fields.

In terms of business and private sector, several multinational software companies operating in Greece and disseminate innovative practices in ERP applications and specialized solutions in government, retail, logistics, utilities, and other sectors (Greece - Information and Communications Technology, 2017). Regarding ICT skills development, OTE created "Oteacademy", a professional training organization that offers various opportunities, ICT skills training including, to organizations and individuals. For instance, Oteacademy provided to Oktabit a highly specialised training to ICT practitioners among the clients and collaborators of its clients in various ICT domains.

Initiatives by local and regional authorities - Good Practices

Many municipalities and other public organisations in Greece are organising seminars for digital skills that addresses to unemployed of all ages and for specific age groups as well. For example, the municipality of Iraklion in Attica offered basic computer skills classes for free, 15 hours total duration, to people 40 years old and older. More specifically, the beneficiaries learned some basic Microsoft office functions, word processing and internet navigation. To those who attended all classes was given an EqualSkills – ECDL certificate.

Similarly, the municipality of 'Nea Philadelphia', together with the NGO '50plus' and the telecommunications enterprise 'cosmote', organised free of charge computer skills classes for people 50 years old and older. Another initiative of 'cosmote' for the same age group was with the municipality of 'Marousi' in a project named "Be digital", where people over 50 could acquire basic digital skills. Overall, all across Greece seminars and classes for digital

skills takes place, allowing students, older people, unemployed and citizens in general to acquire or enhance their digital skills, free of charge. This kind of initiatives are funded by Europe, ministries or private corporations in the context of Corporate Social Responsibility.

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Chapter 2: The Perspectives of HR managers

Main scope of this field research was to identify the needs of organisations regarding the digital competence level of the average employee and to measure the social media penetration in selection and recruitment process of the modern organisations. More specifically, the different digital competence areas used, identified the most significant digital skills, in order to contribute to the development of the digital competence framework that will be used for the online resource platform. The human resources managers assessed the importance of various digital skills and additionally provided information about the social media usage in their organisation.

Methodology

Our study's methodology was based both in qualitative and quantitative approach of research. The basic tool of our study was a structured interview guide with both quantitative and qualitative elements. The questions were mainly structured, closed-ended questions, with a separate section of open-ended questions in the last part of the questionnaire.

The interview guide was developed according to the Information and Communication Technologies (ICT) science and more specifically by using the DigComp 2.1 digital competence framework, which develops and measures digital competence in the European context. More specifically, the main structure of the interview's questionnaire based on the specific domains that DigComp 2.1 methodology uses and these are: Information and data literacy; Communication and collaboration; Digital content creation; Safety and Problem solving. In these areas, we tried to identify what digital skills organisations and companies expect from their employees to have, in order to meet their needs and in parallel which of these skills are the most important for the modern organisation.

Moreover, in a separate section, we study the usage and impact of social media in the hiring process of organisations and additionally how important is the digital footprint of prospective employees in various social media platforms in order to work as another assessment tool. Finally, the last section of our research tool is that of the open questions, where we try to take answers about relevant issues of the study that could not be attained through the quantitative part of the questionnaire. Therefore, in this final part the participant develops his thoughts and opinions more extensively and gives us details.

The strong point of our methodology is the usage of a well-known and tested framework, DigComp 2.1, which develops and measures digital competence and is in general an initiative of the European Commission. Therefore, it perfectly matches our study, which also takes place in the European context. Additionally, the number of human resources managers (10 in each country – 50 in total) is an effective sample, in order to identify the main themes and issues in national and European level. Finally, structured interviews are more reliable, as they give the same set of questions for all, it is easier to quantify them and the findings can ne generalized. On the other hand, a limitation of the structured interview is that they are not flexible as the semi-structured for example. However, in the open questions section we covered a high range of issues, giving the opportunity to the participant to develop his/her thoughts. A possible weakness of methodology is the fact that organisations' needs varies across sector of the economy and field of activity.

Results

Demographic Information

The average age of participants is 45,2 years old and the gender classification is 8 female and just 2 male. Regarding their educational background, 7 out of 10 are master degree holders, while just 3 hold a bachelor degree. In figure 1 there is the pie chart of educational level classification.

Figure 1: Educational level of participants
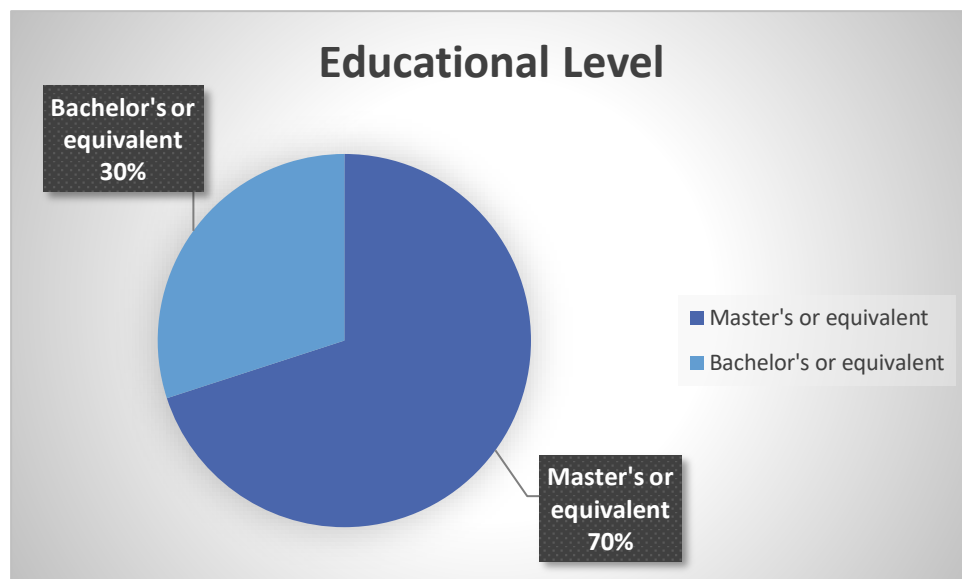
Regarding the experience of participants, the vast majority of them have a long year experience in the field of human resources management. More specifically, the average number is 16,7 years. For instance, one participant has 27 years of experience and another 26. A third has 22, while 6 out of 10 has more than 15 years of experience. Regarding the years in the current organisation, the majority of participants are many years in the same company, while only 3 are new comers. In figure 2 there is a chart bar with the years of experience in human resources managements and the years in the current company of each participant.

Figure 2: Years in Company and years of experience in HR

To render the sample of our study more reliable we addressed to human resources managers from various organisations from different sectors of the economy. In this context, the participants of our study belong to seven different industry sectors. There are three participants from companies that operate in products manufacturing and two human resources managers from insurance companies. Then, there is one representative of five other industry sectors, as we see in figure 3.

Figure 3: Participant's Organisations Industry Sector
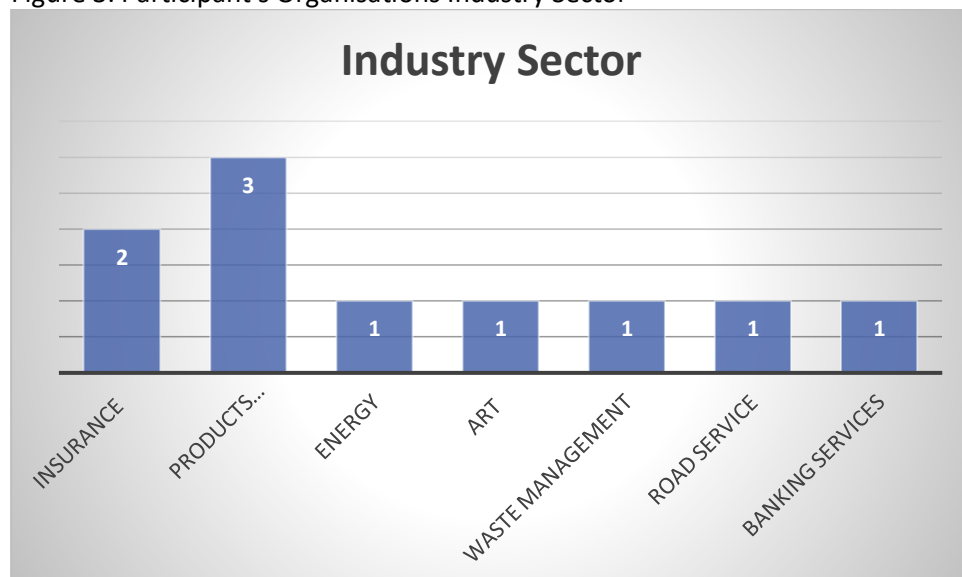
Open-ended Questions

Digital literacy

Digital literacy is one of the key requirements nowadays for most of the job positions in the labour market. The majority of the participants of our study stated that at least a minimum level of digital competence is necessary for their average employee. Moreover, in some organisations even a below average digital skills level is necessary, in order to deal with the digital technologies and ICT systems that are used in the organisation. For instance, two of the participants, whose organisations operate in the insurance sector, argued that they have high expectations from their employees in terms of digital skills, as they use demanding programmes (CRM, ticketing). More specifically, all the participants argued that MS Office, e-mail, security issues and other basic digital functions are prerequisites for every employee and then the requirement for more advanced digital skills, varies according to the sector of the organisation in general, or the nature of the department or position in the organisation.

Regarding the age factor, most of the participants argued that age matters when it has to do with new technologies. From their experience, older people are less familiar than younger in digital technologies, digital skills and skills update according to technological advancements. Nevertheless, many participants highlighted that even though older people are less familiar with new technologies, character, experience and motive plays a decisive role, in order to improve their skills and fulfil the job requirements.

Duties of employees 45+ years of age and their link to digital competence

The majority of the participants stated that most of the people 45 years old and older in their organisations are occupied in administrative positions. This means that people with experience, regardless of the level of digital skills, are placed in the high ranks of organisations. However, as digital skills are necessary even for simple job positions, an above average level of digital skills is of outmost importance for the administrative positions.

For this reason, almost all the organisations of our sample, offers training programmes relating to digital skills. Interestingly enough, participants stated that the organisations offers training programmes regardless of age, and so all employees have to improve their skills in order to deal with digital systems and technological advances. Therefore, digital skills is a basic part of modern organizations' function and training opportunities are offered to employees of all ages. The nature of training though, varies according to the organisation, the department and the digital skills necessity.

Digital literacy and recruitment

As we mentioned above, at least an average level of digital skills is a prerequisite for almost all positions in modern organisations and companies nowadays. However, digital skills is not the only requirement organisations demand from employees, so a wide range of various skills and capabilities might be more important than an exclusive expertise on digital technologies. In this vein, most of the participants of our study argued that they have never rejected a candidate, just because digital skill, as they looked mainly for the whole picture.

Nevertheless, some of them stated that if two candidates are similar on skills, character and experience, the one who is more familiar with digital technologies, probably would be selected.

From our sample, just two HR managers declared that they have rejected in the past a candidate, because of the low level of digital skills. However, many of the HR managers stated that most of the candidates, who pass to the stage of interviews or in the selection process, are already digitally skillful, so this factor was not a cause for rejection.

Digital literacy gaps

All the organisations of our sample demand at least an average level of digital skills from their employees. In this context, the vast majority of employees probably is capable of dealing with simple or complex digital programmes and tools. However, the level of difficulty or the complexity of these programmes and tools varies between organisations and even between departments within organisations. For example, an insurance company is using specific programmes for insurance services, so the employees are trained accordingly to use them. Similarly, retail companies are using sales digital programmes and so the sellers must be aware of them. On the other hand, within organisations as well, digital competence in some digital programmes or tolls may varies. For example, the accounting department are using specific programmes, while the Public Relations department a completely different. In this vein, what the HR managers highlighted is the willingness and the capability of an employee to learn and improve. As long as this motive is there, the training and all the other procedures is the easy staff.

Role of Social Media Platforms in the hiring process

Interestingly enough, some of the participants stated that they are not using social media platforms during the hiring process, either because some of the participants were from public organisations, where the hiring process is being done by a centralized system, or because some of them fulfill their needs with other means. From those who are using social media platforms, all argued that LinkedIn is the most professional and efficient tool to assess a candidate. The LinkedIn profile provides all the important facts about skills, work experience and other relevant information. On the other hand, Facebook might not be a professional tool, but is important because gives an idea about the character and personality of the candidate. Many participants stated that they use Facebook in order to avoid a potential negative impact for the organisation in the future, if for example someone posts something extreme in terms of political views, weird photos etc.

Role of Social Media Platforms in advertising new openings

Regarding the advertising tools, most participants stated that they use Facebook, LinkedIn and Twitter in order to advertise their products, services and to communicate their news and activities. More specifically, some of the participants are using LinkedIn and one of them specifically LinkedIn enterprise, which is the professional tool of the LinkedIn platform. These tools allow them to keep in touch and communicate with organisations and individuals, creating a professional network. As we mentioned above, the HR managers

highlighted the difference between LinkedIn and Facebook, considering the former as more professional than the latter. Therefore, some organisations who want to acquire a more professional profile are using LinkedIn in advertising new openings, while Facebook and Twitter are not so popular in our sample.

Importance of Social Media Profile

Some organisations of our sample told us they are not using social media in hiring process at all. Therefore, candidate's profile is not relevant for them. Nevertheless, from those organisations that are using social media with one way or another, applicant's profile play a role regarding the final decision. Most of them argued that LinkedIn is the most important platform for a candidate's profile, as long as they can see professional experience, studies and other useful information about the applicant. On the other hand, Facebook is used mainly as tool for verification that all is good and not as a source to learn something useful. More specifically, most of the participants stated that they visit applicant's profile on Facebook, just to confirm that there are no extreme posts or pictures, i.e something that could possibly harm organisation's reputation in the future, as long as they hire the particular candidate.

Social Media and Internal Usage

Social media is useful tool for the half of the companies of our sample. Five participants answered that they use social media, especially for advertising purposes. Some of them also use SM for internal or external communication. However, all HR managers stated that interviews via social media is not a preferred way for interviewing and just a couple of them used this method in the past, only because there was no other way. The most common used platform for those who use social media is skype and mainly is used for internal communication. Interestingly, one of the participants said that they use a more advanced skype programme (skype for business) for more than 8 years now. In overall, a limitation for our sample is the fact that some of the participant's organisations belong to the public sector, in which there are standard procedures and patterns. Therefore, there is not a flexibility for the human resources managers to use and develop their own methods through the social media.

Synopsis

The results of the study helped us to identify the basic digital skills modern organisations demand from their employees in the Greek context. The basic digital functions as e-mail, internet and Microsoft office are prerequisites in almost all job positions nowadays and prospective employees should be familiar with them, in order to meet the needs of organisations. Additionally, the participants of our study verified the traditional "generations gap" in digital skills, as they argued that younger people perform better than older ones in digital technologies. Regarding social media usage from modern organisations, we can highlight that most companies use social media for advertising purposes and communication. In selection and recruitment process, social media platforms are not so popular yet, but the potential is great for the future. From the participants of our sample

that use social media platforms for recruitment, most of them stated that they prefere LinkedIn as a more professional tool, while Facebook is used mainly for a basic personality check.

Conclusions

Greece is in process of digitalization nowadays, together with the rest of European countries. However, some structural problems of the Greek economy and the current economic crisis make this process a slow one. Greece performs low in the digital skills indicators of the general population, while there is a generation's gap in digital skills. Moreover, as the digital skills becoming more and more necessary in the labour market nowadays, the need to support those who are outside the labour market is greater than ever. In this context, our study identified the most significant digital skills for the modern organisations in Grrece, from a sample of ten human resources managers, in order to develop an online platform that will enhance the digital skills of low-skilled, low-qualified unemployed persons above 45 years of age. Additionally, as social media platforms are basic tools of the digital society, the need to keep up with these platforms is essential.

The results of our study show that a minimum level of digital skills is a prerequisite nowadays for most job positions in most organisations. Moreover, social media platforms are used extensively from organisations for advertising and communication purposes, while for recruitment and selection process there is a growing trend. In this vein, people who are outside the labour market needs to be familiar with digital technologies and social media platforms, in order to increase their chances to return in employment. A good level of digital skills and social media literacy, will allow the individual to be an active member of digital society.

Although in Greece digital literacy training is provided by various stakeholders, few initiatives aim exclusively in the support of older unemployed persons. In this regard, the project MedLit45+ that will develop an online resource platform, addressed to this target group, is in the right direction. However, more initiatives of this kind are needed, in order to develop digital skills in those who are not familiar with digital skills, with an outmost goal to create an equal and more inclusive "digital" society and labour market.

Annex 2: Italy

Introduction

As ICT spreads throughout our societies, touching more and more parts of our lives, so digital competence has become essential for every individual. In line with the EU trends, in Italy the large majority of jobs now require different ICT skills. Digital competences are one of eight key competences essential for all individuals in a knowledge-based society. Recognising the crucial role of digital competence in today's society, the European Commission's 2010 Digital Agenda for Europe devoted a whole pillar to digital literacy, skills and inclusion.

The purpose of this study is to analyze digital literacy in Italy and to develop a methodological framework for the building of digital skills through social media of low-skilled/low-qualified unemployed persons over 45. Main findings are taken from existing relevant sources of data collection such Eurostat, including relevant academic articles, national reports and other publications on digital competence and on social media literacy about Italy.

In the current study, structured interviews were held with 10 recruiters and/or HR managers aimed to understand: how HR managers use social media to evaluate prospective employees during the hiring process; what digital skills are expected by HR managers for employees who are 45 years old or older.

Chapter 1: Setting the Scene: Digital Literacy in Italy

Digital Literacy in Italy

Digital skills indicators are composite indicators which are based on selected activities related to internet or software use performed by individuals aged 16-74 in four specific areas (information, communication, problem solving, software skills). It is assumed that individuals having performed certain activities have the corresponding skills. Therefore, the indicators can be considered as proxy of the digital competences and skills of individuals.

TABLE 5: DIGITAL LITERACY IN ITALY AND EU (28 COUNTRIES) IN 2016

Age Group	EU/Italy	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	European Union (28)	25%	27%	29%	1%
	Italy	23%	24%	19%	2%
16 to 24 years old	European Union (28)	16%	28%	52%	0%
	Italy	20%	35%	34%	1%
25 to 34 years old	European Union (28)	21%	29%	44%	1%
	Italy	24%	28%	31%	2%
35 to 44 years old	European Union (28)	27%	30%	34%	1%
	Italy	27%	28%	25%	2%
45 to 54 years old	European Union (28)	29%	30%	24%	1%
	Italy	28%	25%	16%	3%
55 to 64 years old	European Union (28)	30%	24%	15%	1%
	Italy	22%	20%	10%	3%
65 to 74 years old	European Union (28)	24%	17%	7%	1%
	Italy	13%	9%	3%	2%

Source: Eurostat, 2017

The graph above shows that 23% of the Italian population has low overall digital skills, while 24% have basic overall digital skills, 19% have above basic overall digital skills, only 2% have no overall digital skills. The percentage of individuals with above basic digital skills decreases with age for both Italy and the EU. Overall, the percentage of Italians with above average digital skills is generally lower than the EU average.

TABLE 6: DIGITAL LITERACY IN ITALY BY AGE GROUP FOR 2015 AND 2016

ITALY					
Age Groups	Year	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	2015	21%	24%	19%	2%
	2016	23%	24%	19%	2%
Individuals, 16 to 24 years old	2015	18%	35%	36%	1%
	2016	20%	35%	34%	1%
Individuals, 25 to 34 years old	2015	21%	29%	32%	1%
	2016	24%	28%	31%	2%
Individuals, 35 to 44 years old	2015	26%	27%	23%	2%
	2016	27%	28%	25%	2%
Individuals, 45 to 54 years old	2015	23%	26%	16%	2%
	2016	28%	25%	16%	3%
Individuals, 55 to 64 years old	2015	21%	19%	10%	2%
	2016	22%	20%	10%	3%
Individuals, 65 to 74 years old	2015	11%	8%	3%	1%
	2016	13%	9%	3%	2%

Source: Eurostat, 2017

The graph above shows that the percentage of Italians who have low overall digital skills has increased from 21% in 2015 to 23% in 2016, while other categories are keeping the same. Results shows minimum changes among both young age groups (i.e. 16-24 and 25 to 34) and older age groups (i.e. 45-54 and 55-64 year olds).

TABLE 7: DIGITAL LITERACY AND UNEMPLOYMENT (2015)

Age Groups	European Union (28)		Italy	
	All Individuals	Unemployed	All Individuals	Unemployed
Individuals who have low overall digital skills	25%	31%	23%	28%
Individuals who have basic overall digital skills	27%	24%	26%	25%
Individuals who have above basic overall digital skills	29%	19%	19%	15%

Source: Eurostat, 2017

The graph above highlights how high digital literacy is associated with lower unemployment in both EU in general and Italy. Results shows that the percentage of unemployed people is generally lower for individuals who have above basic overall digital skills.

Literature Review

According to "e-Skills In Europe - Italy Country Report" (European Commission DG Enterprise and Industry, January 2014), Italy faces a number of problems in the e-skills domain: an inadequate digital culture is the real barrier against a clear and consequent demand. Most SMEs' owners from ICT demand side, are mainly aged people who scarcely understand the challenges of internet and how the web implicates their business, communication and marketing as well. On ICT skills supply side, the relatively ease of the initial boom with no regulation and a low culture towards quality, led to the establishment of many consultants and very specialized small enterprises which hardly commutated their skills and offer when the ICT landscapes changed into the web and social development. On the demand side, a low digital culture is accompanied by a very low innovation culture. In this scenario, ICT skills and e-leadership skills are delegated to the labor market itself and the key players.

The increasing of the WEB and distributed systems, allowed ICT practitioners to evolve in terms of professionalism, the ICT skills have developed coherently with the developing ICT world and its complexity; the relevant profiles have increased in terms of job roles and specialization. The great changes on ICT determined a selection of the more flexible and really skilled profiles. New technologies led to new markets as well. Those who had the capability to turn themselves into the third generation of ICT practitioners and follow the changing market, focused their activity on three main directions: marketing consultancy (web marketing; digital communication; social media marketing); open source customizations; migration of proprietary client applications into web social applications. A very high offer of training courses in these topics can be easily found within the IT training offer. Likewise, the social media marketing and security is another set of mixed ICT and managerial skills requested by ICT SMEs who are mostly ready now to invest their time and money for acquiring this know-how.

The picture emerging from the Digital Scoreboard[2] regarding the development towards a digital economy and societies, highlights a situation of extreme delay for Italy, more than other EU member states. But it is necessary to underline that Italy suffers its territorial differences. An analysis carried out in the "Italia Connessa - Agende Digitali Regionali " report shows that three Regions lead the way, with Emilia-Romagna, which reaches the highest score, close to the European average, followed by Lombardia and Lazio. Besides there is a strong gap between northern and southern regions. All northern regions, and one southern region (Lazio), are the ones that reach values higher than the national average; by contrast, southern regions, together with (northern region), perform below the average.

The Hays' Italia Salary Guide 2017, reports that more and more companies (56%) are using social networking sites for recruitment, screening and selection purposes. The statistical data certainly indicates how social networks are becoming a part of the reality and a part of recruitment and selection processes. Most used social media by the companies include LinkedIn (99%), Facebook (60%) and Instagram (19%). Social media are becoming an innovative and consolidated way of recruitment and selection that can be cost effective,

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[2] The digital scoreboard measures the performance of Europe and the Member States in a wide range of areas, from connectivity and digital skills to the digitisation of businesses and public services.

time consuming and can spot the talents that are usual hard to reach with traditional means of recruitment.

Insight on the Italian digital market

Despite the Italian delay in digital innovation, there is an increasing awareness in promoting the spread of digital skills: the digital transformation relies on the availability of appropriate digital skills for all citizens, from the youngest to the oldest, considering that acquiring such skills will have a positive impact on finding jobs, reducing unemployment and integrating all citizens in the life.

After years of contraction, the Italian digital market grew by 1.0% in 2015, to 64.9 billion euros. 2016 figures should confirm a positive trend, with a 1.5% increase, followed by a 1.7% growth in 2017 and 2% in 2018. This performance was driven by process of digitalization and by the use of ICT to innovate business models and increase competitiveness. Demand for Digital Enablers[3] is increasing also in Italy, especially with regard to Cloud Computing, Big Data, IoT (Internet of Things), Social, Mobile Business and Security, which recorded a combined 14.6% rate of growth in 2015. A similar growth is expected to continue at least until 2018. Without these segments, the traditional ICT market shows very different trends of stagnation: it dropped in 2015 (-1.2%) and the forecast for 2016 and 2017 is negative (-0.6% and -0.3% respectively). Return to growth is expected only in 2018 with a small increase (+0.1%).

As measured by the OECD Survey of Adult Skills (PIAAC) in Italy there is still a large number of adults with very limited ICT skills or with no computer experience: the percentage of adults that have very low familiarity with computer devices is 26.9%. In this category people with no computer experience (24.4%) and those who failed the ICT core test (2.5%) are summed, thus demonstrating not to possess the basic ICT skills, such as the capacity to use a mouse or scroll through a web page (functions useful to take the assessment measuring the foundation skills, such as literacy and numeracy, in the computer based form).

On the other side in Italy there was a 14.6% of adults that even if they reported some prior experience with computers, they 'opted out' of taking computer-based assessment. This means that among those who claim to have experience in using computers (75%) only 58% accessed in the PC assessment. While the total OECD average of those who had access to the assessment test on PC is 77%.

There is a different proportion of adults with ICT skills according to their occupations: highly qualified workers (Skilled occupations) represent the largest group of those who took the CBA with the 40% of adults. While, on the other side, adults being employed in elementary occupation represent the category with the higher percentage of people with no experience in using computers (72,4%).

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[3] Capabilities, forces, and resources that contribute to the success of an entity, program, or project.

Sectorial trends and digital service penetration in Italy

According with the "Digital Trends in Italy" elaborated by the Politecnico di Milano, business spending on digital technologies is expected to grow in the 2015-2018 period, but differences can be observed across the various user segments:

In the Banking sector, spending reached 6,583 million euros in 2015 and it is expected to grow at an average annual rate of 3.3% until 2018, despite the difficulties suffered by this sector. Digitalization strategies focus mainly on migration to digital banking, through the development of new services, branch automation, better data management and updates of IT architectures to foster evolution. In the Insurance sector, after reaching 1,735 million euros in 2015, spending will go up by an annual average of 3.8% until 2018. New digital paradigms are supporting service innovation – the IoT for example makes it possible to develop new types of insurance policies and pricing models – and process of innovation. Mobile and Social channels will be increasingly used for internal and external communication, including communication through the agency network.

Applications modernization projects and projects in the Big Data and Cloud areas are key to enable new strategies. Digital demand in Industry will grow between 2016 and 2015 at an average annual growth rate of 2.5% from 6,877 million euros in 2015. Within an overall scenario of moderate recovery, ICT investment shows several growth areas: from traditional areas (Enterprise Resource Planning and extended-ERP) to innovative ones: the IoT (to support plant efficiency and safety and new business models), Big Data, Cloud. ICT spending in the Distribution and Services sector totalled 3,856 million euros in 2015 and is expected to increase at an average annual growth rate of 1.6% until 2018. The main goals in this sector are: keeping market shares, develop sales strategies, brand strengthening and better customer knowledge.

The focus is on Mobile, Big Data/Business Analytics and Cloud computing [4] . In the Telecommunications & Media sector, ICT spending reached 8,124 million euros in 2015 and is expected to score an average annual growth of 1.2% until 2018. Companies are working to innovate their offering to respond to evolving customer needs and competitive pressure. Investment is mainly focused on upgrading broadband network infrastructures, adoption of mobile solutions to support new content usage models and evolution of customer care services, migration to Cloud computing, adoption of Big Data solutions to profile customers and to launch personalised offers. In the Utility sector, digital demand totalled 1,522 million euros in 2015 and an average annual growth rate of 4.3% is expected until 2018. ICT investment is driven by the need to optimize business processes (Mobile Workforce, Business Intelligence, Augmented and Virtual Reality), to widen targets and markets, to focus on market liberalization (Social channels, advertising, mobile applications). In the Travel & Transportation sector, ICT spending in 2015 was 2,155 million euros and it will increase at an average annual growth rate of 3.7% until 2018. Strategies are aimed at evolving the business activities by using more BI/BA tools (customer knowledge, new offers, monitoring of sales activities); Mobile Apps (new booking, payment and customer care

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[4] Cloud computing is an information technology paradigm that enables ubiquitous access to shared pools of configurable system resources and higher-level services that can be rapidly provisioned with minimal management effort, often over the Internet.

systems); IoT systems (MobilityInfo, Fleet Management[5], etc.) Spending by Government in 2015 went slightly up in central government to reach 2,893 million euros and down in local government to 1,217 million euros; this trend is expected to be confirmed in the 2015-2018 period, with an average annual decline in spending by local government of 1.5% and an average annual increase of 2% in spending by central government, driven by the 2014-2020 Digital Growth Strategy[6] and its major nation-driven coordinated projects.

Trends by Size of User

The Italian digital market is driven by large companies' investment, which is expected to increase at an average annual rate of 3.1% between 2015 and 2018 from 20,646 million euros in 2015. Spending by medium-sized companies is expected to grow at an average annual rate of 1.9%, from 7,004 million euros in 2015. Investment by small companies shows a much lower development rate. Small and medium-sized companies seem to be focusing on short-term efficiency goals while lagging behind with regard to investment in Digital Transformation areas. The focus on these areas is expected to increase in the next two years when they will start to prioritize on better understanding customer needs and behavioural profiling so to evolve towards the digitalization of business models and customer experience.

Policy and Major Stakeholder Initiatives

Public policies and programmes aimed to increase ICT and digital competences

On 19 October 2012 the national executive law for the implementation of the Italian Digital Agenda was launched in line with the Europe 2020 Strategy and the Digital Agenda for Europe. The Steering group is composed by the six ministries mainly involved in its implementation, including nominated representatives of the Italian Regions, Provinces and Municipalities. The agenda includes short and mid-term actions in the areas of the digital identity, digital PA/open data, digital school and university, digital health, digital justice, digital divide, e-payments. (Empirica, 2014)

Data from the Global Information Technology Report (2016) shows that Italy is one of the countries that improved the most during the last year its ability to leverage information and communication technologies to improve its competitiveness and the well-being of its population. On top of billion-euro investments in broadband access, the new strategy for ultra-fast internet connection expects to raise €12 billion to meet the EU h2020 broadband targets. The advances in internet rights and bandwidth have been complemented by the realization of the Italian strategy for digital growth[7], which includes the constitution of a

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[5] Fleet management software (FMS) is computer software that enables people to accomplish a series of specific tasks in the management of any or all aspects relating to a fleet of vehicles operated by a company, government, or other organisation.
[6] The Digital Growth Strategy was drawn up following a participatory consultation process, both online and offline, which took place from 20 November 2014 to 20 December 2014 and involved all public and private stakeholders, as well as numerous citizens and civic associations.

coalition of associations, companies, institutions and foundations, which will support projects that develop digital competences.

Overall the Italian government has focused its legislative interventions in ICTs on two main priorities:

1. Bridging the digital divide in terms of access to network, digital rights and digital competence development.

2. Developing normative and digital infrastructures to foster innovation in both public administration and industry.

Multi-stakeholder partnerships

The following is a list of multi-stakeholder partnerships of major relevance to the e-skills issue:

- "RETE - Competenze per l'Economia Digitale" (Italian Competence Network for the Digital Economy) [selected as Good Practice]: The network aims to raise awareness about e-competences and disseminate the e-CF.
- The Italian Coalition for Digital Skills aims to promote, support and integrate national and regional projects, linking them to the initiatives of the Digital Agenda as well as to promote the exchange and implementation of best practices.
- Job ICT: this initiative of the Italian service sector trade unions is a job matching web portal for ICT practitioners and SMEs, based on the Italian e-CF national standard.
- "Futuri IT Leader": the objective of this initiative by the Chief Information Officer Forum of the IT industry association (CIO AICA Forum), is to provide a whole, very concrete, experience based picture of the future IT leaders, to promote awareness about IT professionals and their growing role within Italy's economy.
- Seminars and communication campaigns on e-commerce: The seminars are organised by the local Chambers of Commerce and sectoral company associations addressing SMEs; whilst the communication campaign is mainly managed by RAI, the main Italian broadcasting corporation, under the direction of the Ministry of the Economic Development.
- "Adotta un'impresa" (Adopt An Enterprise): the project aims to disseminate among micro enterprises digital culture, communications, marketing of goods and / or services, improvement of management processes.
- The Italian National Plan for Digital Education (Piano Nazionale Scuola Digitale — PNSD) is a policy launched by the Ministry of Education, University and Research for setting up a comprehensive innovation strategy across Italy's school system and bringing it into the digital age ("La Buona Scuola" school reform, law 107/2015).
- Italian Digital Innovation Hubs is part of the I4MS (ICT Innovation for Manufacturing SMEs) initiative, coordinated by the Federation of Innovative and Technological Services of the Confindustria system and aimed at orienting businesses, especially SMEs, to opportunities for digital innovation.

Success of e-skills policies and activities in meeting the objectives of the EU e-skills agenda

Longer term cooperation: large ICT companies, especially telecommunication, have joint partnerships with the PA to foster and support experimental digital implementations especially in the school system. In the last few years, SMEs from both demand and offer side, have started to understand more and more the importance and the strategic relevance to set synergies between them and build up informal networks.

Attractiveness of ICT jobs: especially thanks to the recent eSkills week initiatives, new campaigns and events have been developed for young people. Employability and e-inclusion: The main investments on ICT from the central Government in the last ten years have been addressed to reduce the digital divide and focused on digital literacy of population: young people, teachers, SMEs employees. The interprofessional funds have been quite engaged in funding basic IT training aimed at spreading the basic user ICT skills mainly referring to ECDL

Synopsis

The effectiveness of e-skills policies and activities in meeting the objectives of the EU e-skills agenda, will depend on: the capability of the Italian government and multi-stakeholder partnerships to apply them in the short terms; investments on research and development, population's ICT usage (e.g. internet users), further innovation in the education and VET system. On the one hand, innovation and digital culture might be fostered by the young ICT practitioners coming out of the education system. On the other hand, ICT SMEs should enhance their culture in terms of management and marketing skills. Likewise, innovation in the Public Administration Sector should represent another key driver for ICT skills demand and offer.

To become digital, citizens, companies and institutions are called not only for a technological change, but also for a cultural one. But this is not easy to achieve. According to a survey carried out by Osservatorio delle Competenze Digitali 2015, various and consistent reasons drive deep concern around skills vendors suffer from misalignment between demand and supply of ICT skills; in customer companies, budget restrictions are slowing down the use of specialized resources; in government, regulations on public debt control have stopped new hirings. Education and training should play a key role, through effective planning of curricula. Unfortunately, this is not the case yet. Companies and institutions say they have close relations with universities, especially ICT companies, but they mainly focus their hiring on candidates who have already been trained. Few companies try to direct educational curricula. There is no real sharing of objectives and joint development of courses of studies. This is one of the reasons why in Italian universities it is hard to find motivation to create skills in the technological/digital competence areas, as it happens in the other European countries. Collaboration initiatives between companies and high schools are even fewer and they are limited to short stage periods during the school year. Higher technical education and higher technical education and training institutes (ITS and IFTS) are still little known, although they create specialized skills accessible also to small companies. For this reason it is very important the relevant investment that Italy is doing on its infrastructure, also in order to reduce the gaps, existing also in the area of digital skills, between the different areas of the country.

Chapter 2: The Perspectives of HR managers

Objectives of the study and research questions

In order to explore the training needs of low-skilled/low-qualified unemployed person over 45 years of age, interviews with 10 recruiters and/or HR managers were organized in Italy. The objective of the research interviews is twofold:

a) Understand how recruiters and HR managers use social media to evaluate prospective employees during the hiring process.

b) Understand what digital skills are expected by HR managers for employees who are 45 years old or older.

The interviews captured the perspectives of recruiters and identify ideas, opinions and issues in the area of investigation. Research questions focused on the importance of Digital Competence in the workplace for people 45+ years old, what skills and competences related to Digital Competence are expected out of prospective employees who are 45+ years old, what are the most common social media platforms used in advertising, screening and selection process.
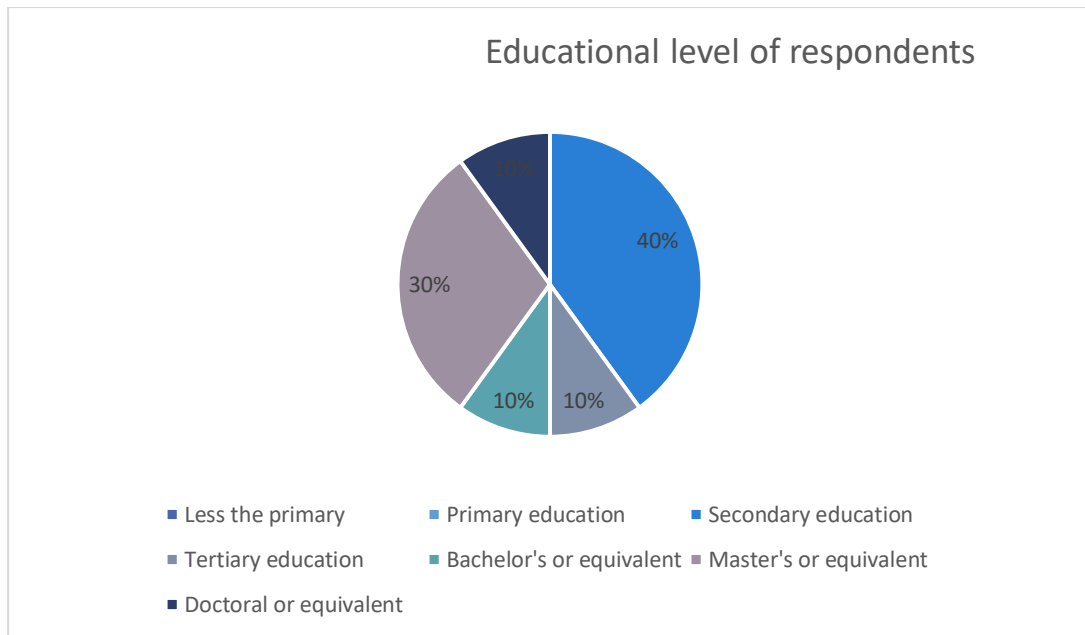
Methodology

The interviews targeted recruiters and/or HR managers and firms from different towns in Italy in order to guarantee a national coverage: Caltanissetta, Palermo, San Cataldo, Milano, Bologna, Bari, Trabia. The interviews were taken in the national language of each partner to ensure participants comprehension. Each interview was conducted face-to-face based on a set of predefined questions including: closed questions providing people with a fixed set of responses in order to collect quantitative data, and open questions allowing people to express what they think in their own words in order to collect qualitative data. Each interview took approximately 30 minutes to get completed and got recorded.

Results

Demographic Information

The average age of participants is 46,6 years, while 90% of respondents are males and 10% are females.

Here below a pie chart summarizing the educational level of respondents:

Educational level of respondents

Legend:
- Less the primary
- Primary education
- Secondary education
- Tertiary education
- Bachelor's or equivalent
- Master's or equivalent
- Doctoral or equivalent

(40%, 30%, 10%, 10%, 10%)

Here below a horizontal bar chart summarizing the years of cumulated experience of respondents in relation to the working experience in general, in human resources (HR) and in the current company:

Cumulated experience of respondents

Legend:
- How Long Experience YEAR
- How Long HR YEAR
- How Long Company YEAR
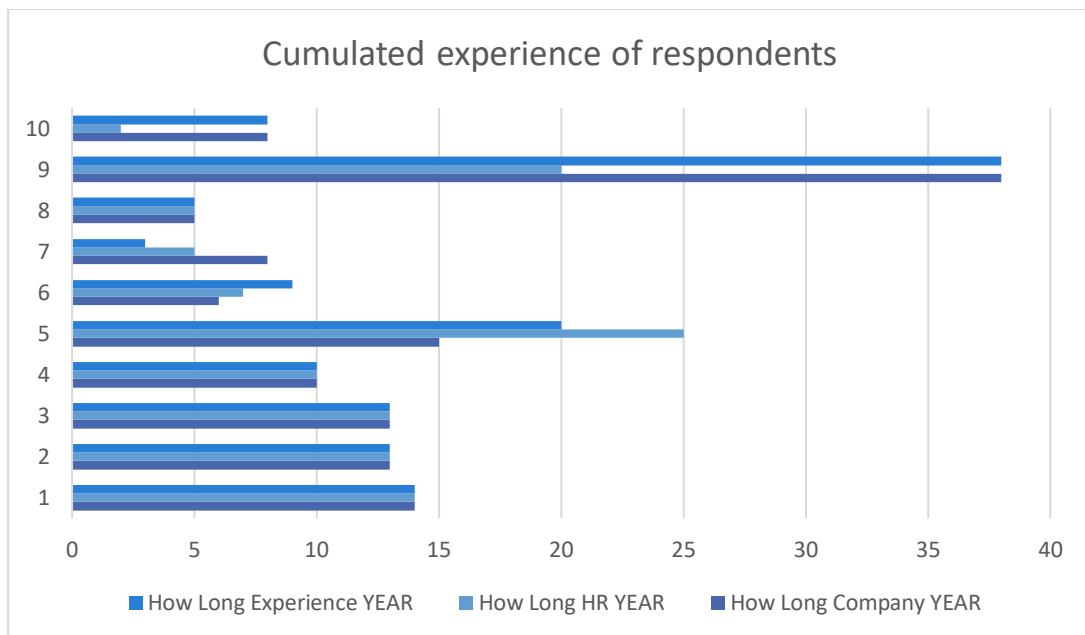
Here below a vertical bar chart summarizing the information regarding the sectors the respondents work in:

Open-ended Questions

Digital literacy

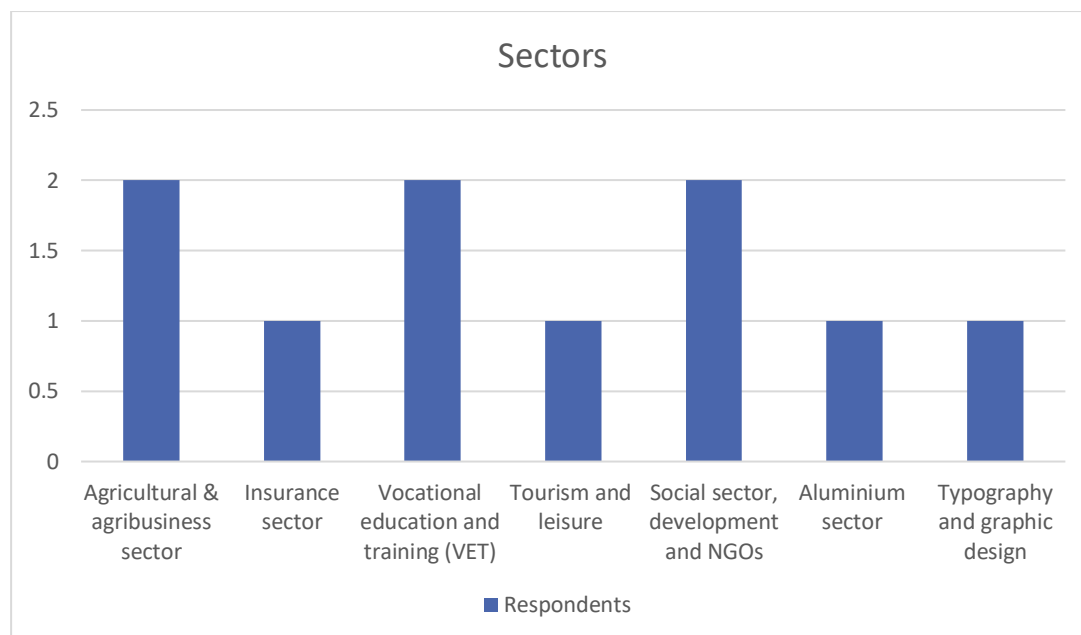Most of the respondents declare that the importance of digital literacy is depending on the specific sector, business activity and/or specific responsibilities and activities within the same firm. For instance, a rural enterprise would require employees equipped with digital literacy in relation with the area of marketing, sells, transformation and production. Digital literacy would be not necessarily required for employees working in planting, harvesting, etc... Most of the respondents declare that nowadays, all employee should be able to use a computer, Internet or some other form of technology at work, and this number will continue to grow as will the scope and sophistication of technology. This implies that workers, especially older workers who may not have been upgraded in technology and digital literacy, will need to engage in training activities to remain competitive in the work force.

Duties of employees 45+ years of age and their link to digital competence

The employees (45+) most commonly have coordination's tasks in relation to specific key units or departments. As in the previous paragraph, the importance of competences is depending on the specific sector, specific responsibilities and activities. Most of respondents declare that employees (45+) most commonly are required to have advanced digital skills in relation to administrative and financial work, current use of internet, e-mail, word processing, data entry, creation of spreadsheets and presentations, use of Word, Excel, Power Point, etc... On a general level, only few respondents declare to invest in training programs relating to digital skills for their employees. Training programs are offered to upgrade and equip employees only in specific key areas where digital skills are relevant.

Digital literacy and recruitment

Most of respondents declare that digital competence has seemed a barrier in recruitment of qualified employees in relation to adults 45+ and older workers, while young people have in general more consolidated digital competences. 90% of respondents rejected promising candidates due to lack of digital skills in vacancies and work places where digital competences are required.

Digital literacy gaps

According to the respondents, employees should increase their proficiency in specific programs for administration and management (such as Office), including the capacity to use of clouds, management tools and familiarity with social media.

Role of Social Media Platforms in the hiring process

The most commonly used Social Media platforms during the hiring process LinkedIn and Facebook. Most of respondents use the SM platforms to research specific / focused job profiles or promote job vacancies. Prospective employees that are active in Social Media platforms would be more reachable and visible.

Role of Social Media Platforms in advertising new openings

According to most of respondents, the most commonly used Social Media platforms in advertising are Facebook and LinkedIn. HR managers use the SM platforms to advertise jobs vacancies and openings, particularly on Facebook. Prospective employees that are able to use social media to their full potential, they'll be able to improve their job search.

Importance of Social Media Profile

Some of the respondents declares that LinkedIn is a useful professional networking site looking for focused candidates based on references. Facebook is used to get information on the private profile of the candidate according to the information available. Prospective employees that are able to use social media, particularly LinkedIn, to their full potential, they'll be competitive and quoted candidates.

Social Media and Internal Usage

According to the interviews, only 30% of targeted firms use SM for interviews. All firms use SM for internal purposes, especially in terms of internal communication, coordination and exchange of information. The most commonly used platforms used for internal purposes is Skype, including also Whatsapp and Facebook. The use of SM for both interviews and internal purposes varies depending on the company size, sector and business activity. More structured firms use SM for both interviews and internal purposes since about 5 years, while in small and medium firms the use is more recent. The use of SM seems to be very limited in the rural sector. Employees of all ages are expected to use SM in order be able to conduct interviews and ensure internal communication within the work place.

Concluding Remarks

The interviews were considered enough structured and completed, so that there were not additional remarks that were made during the interviews.

Synopsis

The development of digital skills and competences is fundamental at all levels and stages of learning. An essential conclusion is that there is a need for employees 45+ years of age to upgrade and get equipped with digital competences and skills in order to get access to the job market. This implies that older workers would need to engage in training activities to remain competitive and get qualified jobs.

Conclusions

The research shows that the percentage of Italians with above average digital competences are generally lower than the EU average. According to "e-Skills In Europe - Italy Country Report" (empirica, 2014), Italy faces a number of problems in the e-skills domain: an inadequate digital culture is the real barrier against a clear and consequent demand. A low digital culture is accompanied by a very low innovation culture. In this scenario, ICT skills and e-leadership skills are delegated to the labor market itself and the key players. Overall, the main findings from study and research questions confirm that digital competence are a barrier in recruitment of qualified employees in relation to adults 45+ and older workers in general. Therefore, low skilled and qualified adults over 45 years old should be supported to acquire and reinforce their digital competences in order to access to the job market and get qualified jobs.

In line with our research, we suggest the following policy recommendations for increasing digital competence of adults over 45 years old at both national and European level:

- Both adult and firms should invest more and more on training programs to upgrade and equip employees with key competences needed to remain competitive in the job market.
- Regulations in force and policies should facilitate the development and upgrade of digital competences of adults over 45 years to ensure their full participation into the society.
- Multi-stakeholder partnerships should be highly promoted in order to strengthen and develop digital competences among adults over 45 years old and other vulnerable target groups.
- Innovation and major investments in the adult education and VET system should be promoted and pursued.

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Annex 3: Portugal

Introduction

The concept of "digital skills" is constantly evolving in line with the development of technology. It refers to a variety of skills with a wide scope of application. However, digital skills may be defined as (1) the capacity to use digital technologies, (2) the capacity to use these technologies specifically for work, study and the various activities related to the daily life, (3) the ability to critically evaluate digital technologies and (4) the motivation to participate in digital culture (Fundação para a Ciência e a Tecnologia [FCT], n.d.a).

The use of Information and Communication Technologies by all social structures, together with their connection with the Internet, has modified the interactions between citizens, companies and public power (Rede TIC e Sociedade, n.d.).The participation of all in the information and knowledge society implies knowing how to deal with the digital (Rede TIC e Sociedade, n.d.).

In Portugal, the challenge that this reality implies has been the midpoint of many governmental initiatives: through the Resolution of the Council of Ministers no. 112/2012, of December 31, the Government approved the Portugal's Digital Agenda, promoting its alignment with the objectives defined to strengthen the competitiveness and internationalization of national companies, especially small and medium-sized enterprises, through innovation and qualified entrepreneurship. It was reaffirmed the relevance of the use of ICT by companies as a decisive factor to increase their productivity and competitiveness. To tackle the asymmetries, it is necessary to recognize that the population has the need to develop digital skills. It is also necessary to recognize, given the sociodemographic characteristics of this population, that these digital competences will not be developed within the formal educational path.

The European Commission predicts that in the coming years the digital single market could contribute €415 billion to the European economy, creating new jobs. It is expected that by 2020 at the European level, 900,000 jobs in the ICT area will remain unfilled, 15,000 of which in Portugal. It is estimated that Portugal is among the countries most likely to grow job creation in the digital area, reaching a growth rate of 21 to 30% (Costa, 2017).

Thus, in order to allow this vast segment of the Portuguese population the opportunity to develop the missing digital competences the MEDLIT#45 will identify the training needs of low-skilled/low-qualified unemployed people over 45 years of age. For this purpose, two kinds of researches were performed: a primary data collection through face to face and audio recorded interviews with recruiters and/or HR managers and a data collection in Eurostat for identification of the statistics concerning the present situation of the partner countries regarding digital literacy. The identification of the most widely used methods and tools by employers and recruiters, and of the way they are being used, will contribute to determining the most appropriate digital literacy competences that should be developed by low-skilled/low-qualified unemployed people over 45 to boost their employability and career building.

Chapter 1: Setting the Scene: Digital Literacy in Portugal

Digital Literacy in Portugal

TABLE 8: DIGITAL LITERACY IN PORTUGAL AND EU (28 COUNTRIES) IN 2016

Age Group	EU/Portugal	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	European Union (28)	25%	27%	29%	1%
	Portugal	22%	19%	28%	1%
16 to 24 years old	European Union (28)	16%	28%	52%	0%
	Portugal	9%	23%	67%	0%
25 to 34 years old	European Union (28)	21%	29%	44%	1%
	Portugal	20%	32%	45%	0%
35 to 44 years old	European Union (28)	27%	30%	34%	1%
	Portugal	25%	22%	41%	1%
45 to 54 years old	European Union (28)	29%	30%	24%	1%
	Portugal	28%	21%	21%	1%
55 to 64 years old	European Union (28)	30%	24%	15%	1%
	Portugal	26%	13%	7%	1%
65 to 74 years old	European Union (28)	24%	17%	7%	1%
	Portugal	16%	8%	3%	1%

Source: Eurostat, 2016

This analysis will take into account the available data of 2016, as the Portuguese data concerning 2017 is not available yet. Looking at the numbers it is possible to conclude that the highest percentage in both (Europe and Portugal cases) is for those who have above basic overall digital skills. According to Portugal's data and for individuals with low overall digital skills, the percentage increases with age, ranking from 9% between 16 and 24 years old to 28% between 45 to 54 years old. Afterwards, as the tendency is a decrease in 10%, following EU-28 tendency The age group with the highest percentage is the 45 to 54 years of age with 28%, which confirms the need to invest in the training of this group of individuals. Regarding the data of the Portuguese people with basic overall digital skills the highest rate (32%) is in the age group 25 to 34 years old, while in the European case the age group that present a rate of 30% in ex aequo are the ones from 35 to 44 years old and 45 to 54 years old. Regarding the percentage of individuals who have above basic overall digital skills, the Portuguese tendency is that it decreases with age, 67% in the age group from 16 to 24 years old and 3% in the age group from 65 to 74 years, which is also true in the European Union. The individuals in the age group 45 to 54 years old represent only 21% in this category, which evidences the lack of knowledge beyond basic. This puts them into a fragile position in the job market. Finally, as far as those who have no overall digital skills

are concerned, the European situation is similar to the Portuguese, i.e., about 1% of the population in all age groups do not have digital skills.

To sum up, we can conclude that in the Portuguese and European cases the use of ICT is lower among older people - the low digital literacy is still a considerable challenge in this age group.

TABLE 9: DIGITAL LITERACY IN PORTUGAL BY AGE GROUP FOR 2015 AND 2016

	Year	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills
All Individuals	2015	20%	20%	28%
	2016	22%	19%	28%
	2017	not available	not available	not available
16 to 24 years old	2015	9%	30%	61%
	2016	9%	23%	67%
	2017	not available	not available	not available
25 to 34 years old	2015	18%	27%	50%
	2016	20%	32%	45%
	2017	not available	not available	not available
35 to 44 years old	2015	25%	24%	38%
	2016	25%	22%	41%
	2017	not available	not available	not available
45 to 54 years old	2015	25%	20%	19%
	2016	28%	21%	21%
	2017	not available	not available	not available
55 to 64 years old	2015	22%	12%	7%
	2016	26%	13%	7%
	2017	not available	not available	not available
65 to 74 years old	2015	14%	8%	3%
	2016	16%	8%	3%
	2017	not available	not available	not available

Source: Eurostat, 2016

Concerning the digital literacy by age group in Portugal when comparing the European data for 2015 and 2016 in Eurostat (Portuguese data concerning 2017 is not available yet) there has been a small increase in almost all age groups for individuals who have low overall digital skills with the exception of the 16-24 age group and the 35 to 44 years old group who have maintained 9% and 25%, respectively. With regards to the individuals who have basic overall digital skills, the tendency was to decrease the percentage from 16 to 44 years. In contrast

there was an increase of 1 percentage point in individuals between 45 and 64 years of age and the percentage remained the same in the case of adults between 65 and 74 years old. Finally, the data shows that there was an increase in the number of individuals in the age groups from 16 to 24 years and from 35 to 54 years, but a decrease of 5 percentage points in the range of 25 to 34 years. Once again, the numbers remained the same for older adults (55-74 years).

These numbers shows that digital competences among the oldest age groups (45 to 74 years old) is lower than for individuals from 16 to 44 years old and this gap is bigger in numbers related to individuals with basic and above basic digital skills.

TABLE 10: DIGITAL LITERACY AND UNEMPLOYMENT (2016)

Age Groups	European Union (28)		Portugal	
	All Individuals	Unemployed	All Individuals	Unemployed
Individuals who have low overall digital skills	25%	31%	22%	25%
Individuals who have basic overall digital skills	27%	26%	19%	20%
Individuals who have above basic overall digital skills	29%	19%	28%	22%

Source: Eurostat, 2016

The data analysis on digital literacy and unemployment leads us to conclude that the greater the lack of skills, the higher the level of unemployment. The statistics show that Individuals who have above basic overall digital skills have lower unemployment rates compared those who have low overall digital skills. That is to say, there is a direct relationship between the level of digital skills and unemployment, even though the figures are more expressive in EU context rather than in national context.

There is an increasingly urgent need for all its citizens to have access to ICTs to develop digital skills to use them at work environment. For instance, in Portugal the Portuguese Coalition for Digital Jobs (PCDJ) is Portugal's answer to the challenge launched by the European Commission' Grand Coalition for Digital Job, a multi-stakeholder partnership set up to address the lack of digital skills in Europe and to tackle the expected deficit of 900 000 Information and Communication Technology (ICT) professionals by 2020. The Grand Coalition for Digital Jobs and the Portuguese Coalition for Digital Jobs both aim to combat this serious obstacle to recovery and economic growth. Analysing the Digital Economy and Society Index (DESI) 2017 and the data for Portugal, we have the following scenario: in 2017, 52% of the population does not have the basic digital skills necessary to effectively access the Internet, and 30% do not have digital skills, compared to an EU average of 44% and 19%, respectively. Worse, 22% of adults in the active labour force have no digital skills, which is twice the EU average (European Commission, 2017b). Given these low levels of literacy, considering in this concept the ability to perceive and interpret reading and writing, calculating and using digital tools in everyday life, it means that without these skills, citizens are exposed to a greater risk of unemployment, poverty and social exclusion.

According to Europe's Digital Progress Report (EDPR; European Commission, 2017a), Portugal ranks 15th out of the 28 EU Member States, thus slipping back from last year's 14th place in the ranking. However, the country's overall score increased slightly, as did scores for all DESI dimensions except for Digital Public Services (European Commission, 2017b). Concerning connectivity, Portugal further improved its overall connectivity ranking in 2016, moving into 10th place in the EU.

In what regards to human capital although it increased in 2016, the share of Portuguese citizens who use the internet at least weekly (68%) continues to be well below the EU average (79%). In the same vein, in 2016, 26% of the Portuguese adult population had never used the internet compared with 14 % for the EU as a whole. This situation is partly explained by the fact that 52% of the population does not have the basic digital skills required to function effectively online and 30% have no digital skills at all, compared with an EU average of, respectively, 44% and 19%. Furthermore, the share of adults in the active labour force with no digital skills in Portugal is 22%, twice as high as the EU average.

The risk of digital exclusion for certain population groups such as the elderly (particularly in rural areas) or those on low incomes, or with low education levels, is particularly high in Portugal: only 30% of people with at least one of these disadvantage factors had at least basic digital skills in 2015, that is below the EU average.

Portugal is also lagging behind in terms of the share of professionals with specialised ICT skills in total employment. Although, partly due to the country's economic structure, comparatively fewer companies reported hard-to-fill vacancies requiring such skills than in the EU as a whole (respectively, 32.5% and 41% of companies having recruited or tried to recruit personnel for jobs requiring ICT specialist skills). The country continues to have, however, a higher proportion of people aged 20-29 with STEM (Science, Technology and Mathematics) degrees than most EU Member States.

With regards to corporate use rates of both of social media and invoicing, it increased respectively by 42% and 46% from a year earlier. Moreover, Portuguese businesses continue to feature very high usage rates for information sharing and Radio Frequency Identification (RFID) technologies. These figures suggest that decisive steps are being taken to exploit the opportunities offered by digital technologies and confirm the genuine interest from public and private sector actors alike in strengthening Portugal's role as a digital hub. For example, relatively few enterprises in Portugal use cloud computing services (11 % compared with an EU average of 13 %). In the same vein, the share of SMEs selling online and the weight of eCommerce in SME turnover both flattened in 2016 (European Commission, 2017a).

Literature Review

The Foundation for Science and Technology, Portugal - FCT, in collaboration with the various stakeholders promoting digital inclusion and literacy, has developed the guiding document for the "**National Strategy for Digital Inclusion and Literacy 2015-2020"** (ENILD; Rede TIC e Sociedade, n.d.). ENILD highlights an exhaustive diagnosis of a Portugal that, on the one hand, is advanced in terms of the infrastructure to support a digital society and the provision of digital public services but, on the other, presents low levels of use of these same services and infrastructures. ENILD focuses on the development of digital skills in the population to combat asymmetries related to the Information Society, and for this reason, it has as

priorities the population that never used the Internet and the people most vulnerable to info exclusion.

The **Strategy and Action Plan for Digital Jobs** "outlines several measures to increase talent supply in ICT, and addresses the lack of these professionals in the current and future labour market. The initiative involves economic, education and employment areas and will include recommendations for the creation and/or articulation of national policy instruments of public and private initiatives, that may contribute to fill the 15 000 job gap in ICT predicted for Portugal in 2020, in an environment of high unemployment, particularly of the young and qualified"(FCT, n.d.a.).

The study report "**Mapeamento da Oferta de Educação e Formação em Tecnologias de Informação, Comunicação e Electrónica (TICE) em Portugal**"(Mapping of the Offer of Education and Training in Information, Communication and Electronics Technologies (TICE) in Portugal) (Valente & Correia, 2015) was written in order to inform the Strategy and Plan of Action for Digital Employability in qualification and requalification for employment in ICT, the need to characterize the offer of TICE education and training available in the country. This book therefore brings together the wealth of information, results in the scope of the study called Mapping the Educational Offer and TICE training in Portugal.

The **Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies** report "offers policy-makers in digital education evidence on how, at the national or regional level, policies can be designed and implemented to foster digital-age learning. The presented findings are the result of a mixed methodological design comprising four parts: desk-research on digital education policy, the identification of national and regional policies worldwide, six in-depth case studies, and an expert workshop. The discussion of the cases identified and studied in depth leads to the formulation of eight core-guiding principles, which can serve as a reference point for policy-makers for the design and implementation of digital education policies: 1. Follow a holistic approach targeting systemic change; 2. Establish both a long-term vision and short-term achievable goals; 3. Deploy technology as a means not an end; 4. Embrace experimentation, risk-taking and failure; 5. Consider the importance and the limits of impact assessment; 6. Involve all stakeholders in a structured dialogue; 7. Let schools and teachers have a say; 8. Build up teaching competence" (Conrads, Rasmussen, Winters, Geniet, & Langer, 2017).

In the study **The Future of Skills: Employment in 2030** was used "a novel and comprehensive method to map out how employment is likely to change, and the implications for skills. It shows both what we can expect, and where we should be uncertain. We also show likely dynamics in different parts of the labour market — from sectors like food and health to manufacturing. It also explains why some low-skilled jobs, in fields like construction and agriculture, are less likely to suffer poor labour market outcomes than has been assumed in the past. More generally, it shines a light on the skills that are likely to be in greater demand, including interpersonal skills, higher-order cognitive skills, and systems skills. Unlike other recent studies, the method also makes it possible to predict with some confidence what kinds of new jobs may come into existence"(Bakhshi, Downing, Osborne, & Schneider, 2017).

The goal of **e-Skills for Jobs in Europe Measuring Progress and Moving Ahead** (European Commission, 2014) report has been to monitor the supply and demand of e-skills across Europe, benchmarking national policy initiatives and multi-stakeholder partnerships in the

European Union. We have analysed the evolution of the supply and demand over the last ten years, to provide a basis for:

• understanding the impact of initiatives launched at EU and national level since 2007;

• proposing remedies where necessary; and

• identifying efficient methods of fostering multi-stakeholder partnerships so as to reduce e-skills shortages, gaps and mismatches.

DigComp 2.0: The Digital Competence Framework for Citizens. Update Phase 1: the Conceptual Reference Model (Vuorikari, Punie, Carretero, & Van den Brande, 2016). The European Digital Competence Framework for Citizens, also known as DigComp, offers a tool to improve citizens' digital competence. DigComp was first published in 2013 and has become a reference for many digital competence initiatives at both European and Member State levels. This document introduces DigComp 2.0. It constitutes phase 1 of the update of the framework which focuses on the conceptual reference model, new vocabulary and streamlined descriptors. The current document also gives examples of how DigComp is used at the European, national and regional levels.

The article **Transformação digital e competências digitais: estratégias de gestão e literacia (Digital transformation and digital skills: management and literacy strategies)** shows that Europe 2020 Strategy, as a framework for growth and employment, aims at creating the conditions for smart, sustainable European Union (EU) during the current decade, in line with the need to overcome the structural weaknesses of the economy, to improve its competitiveness and productivity and to ensure a social market economy sustainable development. The rapid process of digitization of society has been strategy making it essential to ensure that citizens have the digital skills that enable them to participate opportunities and mitigate the risk of exclusion. The debate on investment in human capital and development competence in so-called digital transformation is characterized by attention to the speed of change and innovation (4.0), convergence and the co-responsibility of public and private actors to create the talent needed to face the challenges of the digital world. With the aim of participating in this debate and demonstrating the importance of talent management and the cross-cutting nature of digital literacy, this communication is in line with the interdisciplinary research line of Innovation 4.0, discussing the need for organizations to broaden their learning networks through citizen participation. Three dynamics are analysed management in digital transformation: the effects on policy instruments public services; the valorisation of talent management in the fight against the skills gap the role of spaces for active citizenship (Ochôa & Pinto, 2017).

Skill shortages and gaps in European enterprises - Striking a balance between vocational education and training and the labour market (European Centre for the Development of Vocational Training [Cedefop], 2015). This report of CEDEFOP provides evidence that closer stakeholder collaboration between the worlds of education and of work is a recipe for success, potentially leading to greater employer satisfaction with the skills of new recruits. However, while the identified policy tools may go a long way towards mitigating the initial skill gaps that young workers inevitably experience during their school-to-work transition, they are only likely to be part of the solution. The inability of firms to attract the 'right' workers and fill their vacancies may arise for many reasons other than genuine shortages of skills: unattractive wages, poor and precarious working conditions, lack of career prospects,

geographic and other administrative barriers, such as lack of international recognition of qualifications.

A master thesis of 2017 about the "Influence of social media in the Recruitment & Selection processes" shows that the most used sources are the job offer dissemination that is done through own or specific HR websites, the network of contacts and social media, to the detriment of other methods such as the newspaper that today is less and less used by the increasing popularization of the Internet. This way, it can be noticed that social media are becoming more and more present in organizations, regardless of the activity sector. From the opinions of the respondents of the study (54 professionals responsible for Recruitment & Selection processes), the social media in the dissemination of job offers makes it possible to publicize the job vacancy allows the diversification of recruitment channels and the gathering of CVs. The social networks most used by respondents Linkedin and Facebook. The results obtained in the study reveal that social media are used in the recruitment with frequency and then in the selection. Yet to validate the selection they are rarely used, and lastly, in the post-hiring phase almost never. The survey tried to understand the advantages of the use of social media in the recruitment process and it make clear that it is quicker and easier to access information; the diverse recruitment channels is positive and these are the main influencers of the use of social media in recruitment. Additionally, the advantages of the use of social media in selection are related to the interest in complementing the information of the CVs, the quick and easy access to the information and the fact that it is be a viable economic mean. On the other hand, the identified disadvantages are related to the fact that the candidates are not social media users and the published evidence may not be valid. Most respondents agreed that information contained in social media can be predictive of the future performance of the candidates and that future respondents have an interest in resorting to social media in Recruitment and Selection processes, since they consider it an important contribution to this practice (Fragoso, 2017).

The consultant Michael Page (2017) analyzed at European level the dynamics of recruitment and recalls that 14.4 million people turn to social media to search for job opportunities, 3 out of 4 recruiters analyze the candidate's profiles in social platforms and 73% of the companies hired through the social media. There are more and more companies in Portugal that already use social media in recruitment of new employees, namely Microsoft, Sonae, the Yellow Pages or IKEA, which used these new aspects of online contracting in their stores.

The results of this study reveal that there is indeed a use of social media in R&S processes in organizations. Social networks as a strategic tool can be an important complement in the R&S processes, however, face-to-face contact should not be totally eliminated, since there are important aspects, such as non-verbal behaviours, that are not possible to access through the networks (Fragoso, 2017).

An article about Online recruitment in Portugal – "Recrutamento online: vantagens e desvantagens" (Online Recruitment: advantages and disadvantages), or e-recruiting as it is also called, points some of the key advantages of online recruitment processes: low cost of the process; recruitment processes become more rapid; possibility of reaching various types of candidates; presentation of Creative Resumes by the candidates; easier management of vacancies and applications and greater geographic reach. (Silva, 2018)

There are also disadvantages: high volume of responses; it is an impersonal process and the outdated companies recruiting web pages.

Ideally, a mix of conventional methods and online recruitment tools should be promoted.

Policy and Major Stakeholder Initiatives

In the national panorama, in the last years, initiatives have been promoted that present as priority area to improve literacy, skills and digital inclusion. For example, **Portugal Digital Agenda**, adopted in 2012 and updated in 2015 or the **National Strategy for Inclusion and Digital Literacy (ENILD) (2015-2020),** approved in 2014 and promoted by the Foundation for Science and Technology (FCT) and the initiative **Portugal INCoDe.2030.**

The **Digital Agenda for Portugal**, published in Diário da República (Official Journal) on 31st December (Resolution of the Council of Ministers no. 112/2012), aims to stimulate the digital economy and the information, communication and electronics technologies sector, through the use and development of tradable and competitive goods and services for international markets.

In line with the priorities set out in the Digital Agenda for Europe and the Europe 2020 Strategy, Portugal's National Agenda envisages strong involvement of civil society and the private sector, especially in the information and communication technologies (ICT).

In the scope of the Digital Agenda for Portugal some initiatives are being developed, like:

• Qualification for Innovation and the Digital Economy - 1) Promote the use and support of innovative initiatives involving the use of information and communication technologies in education and lifelong learning. 2) Develop appropriate qualifications and value for the training and greater participation in the digital world. 3) To increase the digital competences of the Portuguese population for a diversified and competent use of the contents and services available online. Responsible for implementation: FCT, ACEPI, Camões, IP, DGE, IAPMEI, IEFP and DGLAB Deadline: until 2020

• Digital Inclusion and Literacy - 1) Create a nationwide digital inclusion network that can optimize the use of installed resources, as well as increase digital literacy levels, especially of vulnerable groups. 2) To empower citizens, in particular children, young people and vulnerable groups, to use the Internet and access platforms in a positive, informed and secure manner. 3) Introduce concerns about usability and accessibility in the development of digital services as well as initiatives to improve the quality of digital services available on the network. 4) Provide platforms for access to digital content. 5) Promote scientific research in the field of broadband (annual awards of two scientific research fellowships in the fields of economics, engineering, law and security of electronic communications networks and services). Responsible for implementation: FCT, DGE, ANACOM, AMA, BNP and DGLAB Deadline: until 2020

• Digital content in Portuguese language and digitalization of files - 1) Stimulate the creation of digital content in Portuguese language, having the e-book as privileged and inclusive support, with the use of open platforms. 2) Encourage and promote the massive digitalization of the contents, as well as to use in this digitization open formats that are interoperable. Responsible for implementation: BNP, Camões, IP, FCT and DGLAB Deadline: until 2020

The **National Strategy for Digital Inclusion and Literacy - FCT**, in collaboration with the various stakeholders promoting digital inclusion and literacy, has developed the guiding

document for the "**National Strategy for Digital Inclusion and Literacy 2015-2020" (ENILD)**. ENILD focuses on the development of digital skills in the population to combat asymmetries related to the Information Society, and for this reason, it has as priorities the population that never used the Internet and the people most vulnerable to info exclusion. For the 2015 - 2020 horizon, ENILD has the following strategic objectives: Reduce the percentage of non-Internet users; Mobilize an operational infrastructure that allows face-to-face training: spaces, equipment and trainers; Encourage the development of pedagogical materials for (self) training; Increase the digital skills of the Portuguese population; Create a multi-stakeholder intervention network (the ICT and Society Network); Encourage the improvement of the interface between online services and citizens (accessibility and usability).

ENILD is in line with the main current governmental initiatives, among which we highlight the following:

The National Program for Territorial Planning Policy, approved by Law no. 58/2007 of September 4, which enshrines the strategic objective 5 for the expansion of advanced information and communication networks and infrastructures and the encouragement of their increasing use by citizens, companies and Public Administration.

The Digital Agenda for Portugal 2020, approved in a Council of Ministers decision of March 19, 2015, has the strategic objective of promoting the use of information technology so that the following goals can be achieved in 2020.

The National Plan for Gender Equality, Citizenship and Non-Discrimination 2014-2017, published in RCM no. 103/2013, of December 31, includes measures to promote basic skills, including digital literacy, in population groups contributing to their empowerment as well as their inclusion in society, as are the cases of women and the elderly population.

Portugal 2020 - the 2014-2020 Partnership Agreement diagnoses that across the national territory, and especially in the case of individual users, it is common ground that low literacy, and in particular the lowest digital literacy, is one of the main reasons, if not the main one, which still prevents universal access to the services available online, including many of the most basic services, in particular by the older population.

INCoDe.2030 is an integrated public policy action of the XXI Government, dedicated to strengthening digital skills, which aims to position Portugal and the Portuguese the top group of European countries in digital competences in a horizon that extends until 2030 (Portugal INCoDe.2030, 2017). The initiative identifies three challenges:

to generalize inclusion;

to stimulate employability;

to produce new knowledge through international cooperation.

The implementation of a series of measures are structured around five axis of action:

Axis 1. Inclusion: Ensuring equitable access to digital technologies to the entire population to obtain information, communication and interaction;

Axis 2. Education: ensuring the education of the younger population stimulation and reinforcement in the fields of digital literacy and skills in all education and lifelong learning cycles;

Axis 3. Qualification: to professionally train the active population by providing them with knowledge necessary for integration into a labour market that depends on strong digital skills;

Axis 4. Specialization: promote specialization in digital technologies and applications for employment qualification and the creation of greater added value in the economy; Axis 5. Research: ensuring the conditions for the production of new knowledge and active participation in international Research & Development networks and programs.

As for ENILD, INCoDe.2030 also assumes DigComp, in this case the 2.0, as a structuring and guiding document (Portugal INCoDe.20130, 2017) of various measures, such as, for example, the development of a self-diagnostic digital skills system for the citizen, or the adaptation of a reference framework to the specific needs of workers in public functions.

The Portugal INCoDe.2030 Initiative is structured as an integrated programme for Portugal, and will be promoted by bringing together and encouraging collaboration between different public and private organizations. An "Observatory for Digital Competences" has been set up by the Directorate-General for Statistics on Education and Science (DGEEC), which, in collaboration with National Institute for Statistics (INE), monitors and reports on the programme's development. The promotion and coordination of the actions of the programme includes the following levels: 1) The Permanent Forum for Digital Competences which aims to promote and articulate a broad range of social actors and ensure widespread mobilisation for the initiative, including a public annual conference in which the developments in each line of action will be presented and analysed. There will also be presentations on national and international success stories and good practices. 2)Technical Coordination, which will be the responsibility of the lines-of-action coordinators, whose role is to monitor the development of the activities, based on the information provided by the Technical Secretariat (referred to below) and to present a critical report at the annual conference of the Forum. The coordination during the launch phase of the initiative will be done. (FCT, n.d.b)

MUDA is a national movement promoted by several companies, universities and associations and by the Portuguese State, which are committed to encouraging Portuguese participation in the digital space, contributing to a more advanced, inclusive and participative country. It was presented in May 2017.

Based on the ambition of Portugal to become a more evolved society, with active, inclusive and participative citizenship, MUDA aims to contribute, on the one hand, to reduce the number of people who have never accessed the Internet and, on the other, by increasing number of users with more advanced skills.

The initiative is structured in 9 pillars, from access to e-commerce and digital communication, through literacy, etiquette, legislation and health, but also digital security.

On the MUDA website there will be a quizz that allows citizens to assess their digital literacy levels and is planning a roadshow across the country. (Movimento pela Utilização Digital Ativa [MUDA], n.d)

Synopsis

The concept of Digital Competencies is broadly embraced and includes the notion of digital literacy (i.e. the ability to access digital media and ICTs to understand and critically evaluate content and communicate effectively) as well as the production of new knowledge through research activities, development of subjects that include information processing, communication and interaction, and the development and production of digital content.

The life of most Portuguese people is already digital - more than 70% of the population is already online, but still far of its behind potential. In the case of the active population, learning, productivity and competitiveness are also increasing and dependent variables of digital, forcing a growing demand for digital skills to pursue different professions.

Data from the European Commission's Digital Economy and Society Index (DESI) for 2017 show that the percentage of Portuguese citizens using the Internet has increased compared to the previous year, but is still well below the EU average. This is an area where there is still room for improvement as no progress has been made during that period. This is a reality that is urgent to change. The numbers show that digital competences among the oldest age groups (45 to 74 years old) is lower than the age group 16 to 44 and this gap is bigger in numbers related to individuals with basic and above basic digital skills.

Although Portugal occupies the 15th position in 28 EU countries on digital competences (15th in the DESI 2017 Index, Digital Economy & Society Index), it needs to reinforce basic ICT skills, human capital and Internet usage levels, even with regards to specialists. It needs to be able to take advantage of the growing supply of digital jobs. Portugal is among the countries with the lowest number of employees in ICT, therefore the employment potential for this area is currently under-exploited.

The data analysis on digital literacy and unemployment leads us to conclude that the greater the lack of skills, the higher the level of unemployment. Digital skills are also intrinsically linked to employability. More active working population generates more new jobs, as well as innovative markets and products, and more competitive and robust economic activities.

On the other hand, companies are using social media as a support tool in Recruitment an Selection processes, which increases the need to provide unemployed adults with the digital skills to create and upgrade their own social media platforms and performance.

Digital employability is on the agenda all over Europe. Aware of the transformative potential for the country and its representativeness in society and the Portuguese economy, a group of companies from the most varied sectors and the Portuguese State joined forces with the objective of developing, in the next years, a set of initiatives that allow a greater number of Portuguese to benefit from full digital citizenship. These policies aim to foster a more participatory and committed society through the extensive and systematic appropriation of ICTs by the elderly, low educated adults and inactive people with low professional qualifications.

Chapter 2: The Perspectives of HR managers

Objectives of the study and research questions

Considering the urgency to eliminate the estimated ICT job vacancies in 2020, it will be crucial to increase the supply of ICT professionals, hence, contributing towards the development of digital economy by stimulating at the same time economic growth. Given the evolution prospects for employment requirements, and considering the recorded unemployment rates, the qualification processes must focus on the qualification and the re-qualification of unemployed people.

In the case of the active population, learning, productivity and competitiveness are also variables that are increasingly dependent on digital, forcing a growing requirement for digital skills for different professions. A country with more proficient citizens in the digital world is also a country with more people included, more participatory and more able to deal with the society of which they are part. Digital skills are intrinsically linked to employability - the digitalization of the labour market requires new skills and the needs of the ICT labour market have grown very significantly, despite the high unemployment rates, particularly youth unemployment (including young people with secondary or higher education) and long-term unemployment. To responses to these needs has not been sufficient and there is a perception that the problem tends to become more acute.

The key digital competences might be organised in 5 areas can be summarised below:

1) Information and data literacy: To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.

2) Communication and collaboration: To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.

3) Digital content creation: To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.

4) Safety: To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.

5) Problem solving: To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.

A master thesis of 2017 about "The Social Networks Used as Tools for the Recruitment of SMEs of Excellence in Lisbon" (Freitas, 2017) concluded that there are many social media platforms that allow recruitment, like LinkedIn, Facebook, Orkut and Star Tracker. In the region of Lisbon the SME´s use mostly for their recruitment process the Linkedin and secondly Facebook (Fragoso, 2017)

The interviews are no longer in many cases, the first contact between those who recruit and those who apply for a workplace, and also ceased to be exclusively on-site (Fidalgo & Carneiro, 2016). Potential employers may have access to social media platforms to allow them to draw conclusions or make inferences about the character or personality of the candidate who may not be as easy or economically viable as through traditional means. According to Fidalgo and Carneiro (2016), recruitment agencies and employers have in mind what the candidates share in social media, noting, accompanying and evaluating their profiles (interests, prejudices, ambitions, principles, etc.) (Fragoso, 2017)

A descriptive research carried out by Vieira (2010), "Impacto das novas tecnologias no recrutamento nas empresas especializadas de recrutamento e selecção" (The Impact of new technologies in recruitment in specialized recruitment and selection companies), revealed that Facebook (74.1%) and Linkedin (53.4%) are the social media most used by professionals. This study also concluded that companies use social media because it increases the number of applicants, the reduction of costs and the optimization of time, and they recognize that social media is an innovative system, with an easy and simple technology and a viable economic environment for Recruitment and Selection processes.

Methodology

For better understanding the Portuguese situation in what regards the digital literacy of adults with 45 and older were held 10 face to face, audio recorded, interviews to HR managers or professionals that develop this task in the companies, during January and the beginning of February 2018 to assess the digital needs that companies detect in their employees over 45 years of age and which digital skills they considered important that future employees acquire. It was assessed the importance of social media in the screening and selection processes. The Interview Guide was structured in 11 Sections:

Section 1: General Information about the interviewee.

Section 2: Role and experience of the interviewee.

Section 3: Firm's size and population distribution (multiple choice questions)

Sections 4 to 8 (multiple choice questions): to assess the importance of certain skills of over 45 workers in employee´s perspective in what regards to: Information Processing; Communication; Content Creation; Problem Solving and Safety.

Section 9: Social Media Literacy (multiple choice questions) – to evaluate the social media literacy of the employees who are less than 25 years old, between 25 and 45 years old, between 45 and 65 years old and older than 65 years old.

Section 10: Social Media (multiple choice questions) – to evaluate the use of social media by the company and its use during the screening and selection processes, namely: Facebook, Twitter and Linkedin.

Section 11: consists of 13 open-ended questions to assess how important digital literacy is to tasks performed by the current and prospective employees and if there were different expectations towards employees below 30 years of age and those above 45 years of age. The overall use of social media by the recruiters and in recruitment processes in particular, and the type of social media used. Finally, the investment in digital literacy training.

The interviews allowed to understand part of the Portuguese reality concerning the use of digital skills by recruiters and by employees. In the open ended questions, the interviewees could better explain the limitations of the use of social media platforms. The greatest difficulty found in the interviews was the time that the professionals had to spend, because the interview was considered too extensive.

Results

Demographic Information

The ages of the 10 interviewees ranged from 38 to 66 years old, with an average of 46 years old; Out of the total, 50% (5) were female, while the other 50% (5) were male.

Concerning the educational level of the respondents, as can be seen in the graph below, 80% of the interviewees had a bachelor degree and 20% the secondary education.
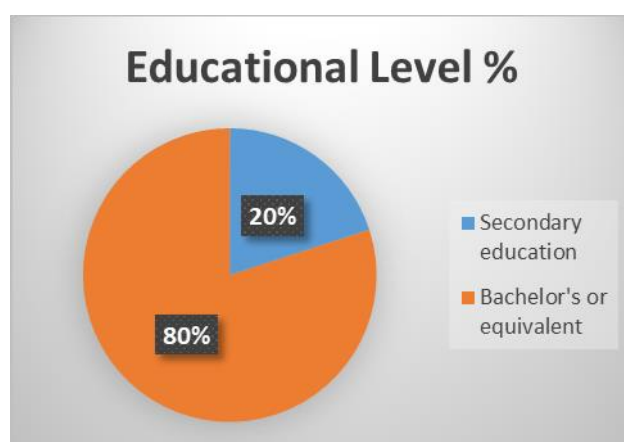

Figure 1 - *Educational level of respondents.*

Regarding the number of years working on the company, 5 of the interviewees have been working for less than 10 years in the company (from 1 year to 7 years) and the remaining 5 from 10 to 26 years, as illustrated in the graph below.
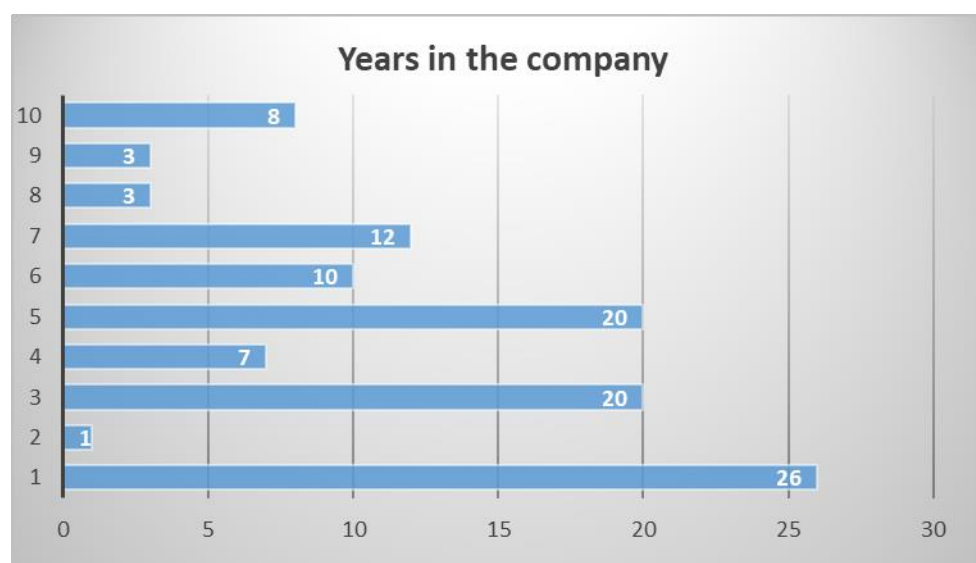

Figure 2 -   *Years of cumulated experience of respondents in the company.*

The experience of the interviewees as regards to human resources tasks ranges from 3 to 36 years. Only 2 of the respondents have less than 10 years of experience (3 and 7 years).
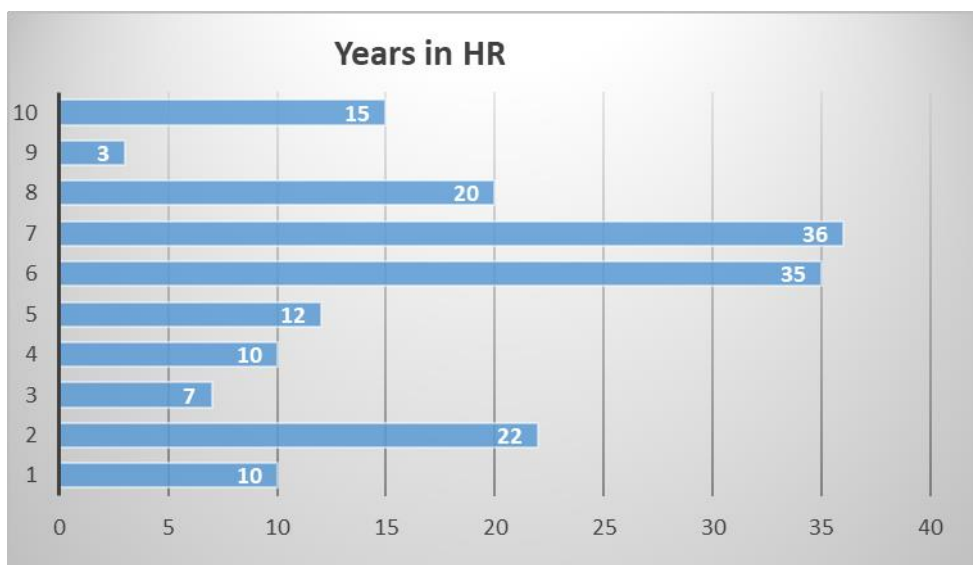

Figure 3 - Years of cumulated experience of respondents in Human Ressources.

Respecting the positions held by the interviewees, 40% were directors of the companies, 20% were managers, and the remaining 40% were divided into pedagogical directors (20%), president (10%) and assistant director (10%). None of the interviewees performs exclusively tasks of human resources, which traces the reality of a large part of the Portuguese small and medium-sized enterprises.

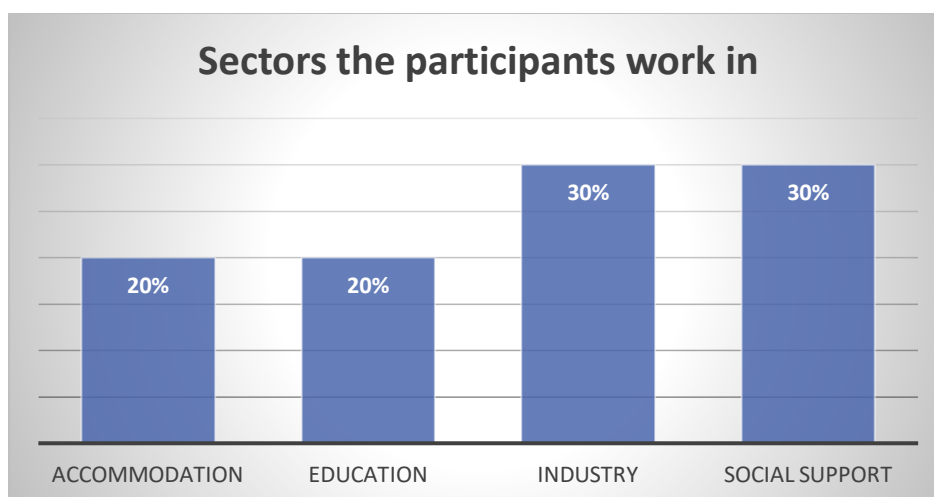

Figure 4 - Sectors the participants work in.

Open-ended Questions

Digital literacy

Digital literacy is very important in itself. Nowadays it is unthinkable not to make use of the technologies, so we have to keep updated and informed so that we can respond to the needs that are imposed by progress. The digital world is increasingly present in daily life and

must be used reasonable in professional and personal life. It is a determining factor in the evaluation of employees, although it depends on the position to be held. The data available online, according to the interviewed is not very reliable, because it can be altered and misleading. The expectations are different for people over 45, because they live in a less digital reality than the younger ones. Young people are expected to understand and work better with computers. Expectations for employees over the age of 45 are lower since it is commonly accepted that they have less knowledge on this matter. However, it is expected that more and more applicants or employees over the age of 45 will invest in training at the level of new technologies.

Duties of employees 45+ years of age and their link to digital competence

The tasks performed by employees over 45 years old are very diverse depending on the typology of the company. Most 45 employees were integrated in the following areas: administrative, management, commercial, financial, stock management, logistics and cleaning.

 The tasks performed by the employees were teaching and non-teaching tasks, student follow-up and space hygiene, head of section functions, functions in factory production, carpenters, locksmiths, electricians, care of the elderly and children, laundry, etc. This diversity of tasks shows that these employees are integrated in most company sectors and also that they have different digital skills needs.

 All the companies considered that training is important and that it is fundamental to promote training actions on technology related to new software or social networks. However most of the actions are only directed to employees who, in their daily tasks, use skills like managers, administrative, financial and commercial technicians. The remaining employees who do not have positions directly connected with intellectual production are not considered in these training actions.

Digital literacy and recruitment

On the topic of considering or not digital competence as a barrier to the recruitment of people over 45, five of the respondents declared that it was not a barrier, three said that it depended on the tasks that the candidate was to develop and the other two were of the opinion that it could represent a difficulty. Regarding the question whether the interviewee had already rejected a potential candidate, because of their weak digital skills: eight respondents answered no, and some have pointed out that it depended a lot of the position they were applying for, because were positions that clearly demanded digital skills. In only one case, has been stated that if the candidate had lack of knowledge, training would be provided to bridge the digital gaps. Only two respondents said that they already rejected candidates, because they had not the digital competences necessary to their professional position.

Digital literacy gaps

Concerning if there were any particular skills, or tasks, related to digital competence, in which prospective employees needed to improve, three of the interviewees responded negatively, the other respondents answered affirmatively and referred the administrative tasks, the use of spreadsheets and the use of social networks as well as tasks in the commercial sector. One of the interviewees pointed out that it was expected that the person responsible for computer maintenance improved professional skills.

Role of Social Media Platforms in the hiring process

Only two interviewees stated that they used social media during the hiring process, namely Facebook and LinkedIn. The rest of the interviewees said that the social platforms were not a tool that they used for hiring new employees. This reveals that the HR professionals interviewed are still using face to face strategies and although they consider social media important, they do not use this powerful tool in their daily practice.
Most of the respondents stated that they use social media platforms, mostly Facebook and Instagram, for exchange of information, for disclosure of activities performed by the entity and for marketing.
Despite these results, we believe that a greater care is required of job seekers on social networking sites, especially on Facebook or Instagram, as recruiters who use these platforms to get more information about candidates may get a misconception of the profile of the candidate or have access to information that has no relevance to the candidate's professional life, like political ideologies, religious beliefs, football club preferences that may negatively influence his or her decision.

Role of Social Media Platforms in advertising new openings

The most commonly used Social Media platform in advertising was the Facebook and one of the interviewee referred the Instagram. Two of the interviewees stated that they did not use any of the platforms for advertising, because they used the website of the company. The interviewees who used the social platforms stated that they did it frequently for disclosure of the institution's activities, for advertising articles or some important information that they considered necessary. In this case, the employees could use these platforms to get information about the activities of the company and in an interview it is very important that the candidate evidences knowledge of the scope of the entity.

Importance of Social Media Profile

In this question five of the interviewees stated that the applicant´s Facebook, Linkedin or Twitter profiles was not important. The other five interviewees said that it was important, from the very start, to verify the applicant's digital literacy skills. One of the respondents said that it was important, but not decisive for hiring. It was also stated that the applicant must know how to effectively manage his/her image in a virtual environment because these digital platforms work as the candidate's CV and the information could be helpful. Social media are a way to share and disseminate information, even though the candidate must consider the information he/she is going to publish. It may help to get to know the candidate, to evaluate him/her, identify his/her personal characteristics, etc. The candidate should choose accurately the information to publish in his/her social profile.

Social Media and Internal Usage

Only one of the interviewees used once the skype to interview someone because the candidate was in London and the profile was very interesting. Three of the companies used social media for internal purposes, namely for internal communication and for publicizing. The respondents used Skype, WhatsApp and Facebook. One of the interviewees referred that he has been using Skype for about 10 years, another said that he used WhatsApp for about 5 years and a third one responded that he used social media platforms for a couple of years. Most of them stated that it was not so important that the employees knew how to use these tools. The majority of the interviewees were not aware of the potential of social networks, perhaps due to lack of training in this area.

Concluding Remarks

The interviewees had experience and knowledge of their areas of expertise. They acknowledge the importance of training people older than 45 to obtain more digital literacy and remarked that in Portugal there is not enough training for the potential of social media.

Synopsis

The first conclusion to be drawn from this study is that there are no human resources managers or human resources departments in most of Portuguese small and medium-sized enterprises. Usually this task is carried out by the managers of the companies, like directors, managers, presidents, etc. This may explain the lack of specific training in this area and also the use of traditional methodologies in the recruitment and selection of candidates.

The study also revealed that it is expected that young people will be better prepared in terms of e-skills than adults over 45, since young people are more in contact with the digital world.

Although the digital competencies of the employees are considered important, the interviewees considered that the training should be carried out only for employees with administrative, commercial or with management tasks. In the case of the employees who do not perform intellectual tasks it is not considered important to have such competencies.

The results show that social media, despite being used by companies primarily for internal communication, namely Skype, Facebook and WhatsApp, there are still the only digital tool used for marketing and advertising. Social networks are clearly not a tool used for hiring purposes. The interviewees continue to favour the traditional means (telephone contact, face-to-face interviews, curriculum analysis, etc.). Those responsible for human resources, while recognizing the importance of the use of digital skills, are not yet aware of the potential of these competences, particularly of social networks. However, during the interviews it was noted that the participants considered that the future will go through the development and use of social platforms.

Conclusions

It is a fact that youngsters are considered to be more into the digital world and it is commonly accepted that employees over 45 have less digital skills. However, the Human Resources technicians consider that the employers expected that they can be attractive for the job market. Although the importance of training programmes related to digital skills is widely recognised, the ones offered by firms are directed to workers that use digital skills in a daily basis.

The opinions concerning the potential barrier of not having digital skills are divergent. While some HR managers consider that it is not a barrier, others point out that depending on the job characteristics and demands, the candidates that do not have the right digital skills are in a more fragile position and this represents a disadvantage. The HR professionals consider the areas and skills that are considered to need improvement are: administrative, spreadsheet use, social networks use and commercial.

The available literature confirms that there is a percentage of Human Resources professionals that use social media as a complementary tool for better understanding the candidate´s profile. However, the interviewed presented a different perspective, showing that they are still very attached to the traditional methodologies and that they are not use this powerful tool in their daily practise. The most commonly used platform is Facebook and it is mainly used for disclosure of activities, articles and information about institutions.

The applicant´s Facebook, Linkedin and Twitter profiles are important to some extend and may not be determining for hiring. However, it is accepted that the candidates should take into account that the HR professionals might want to consult the information available at their profiles, so an accurate management of the profiles is advisable.

According to Portugal's data the percentage of individuals with low overall digital skills increases with age, which confirms the need to invest in the training of this group of individuals. The individuals in the age group 45 to 54 years old lack knowledge beyond basic, thus data analysis shows that in the Portuguese and European cases the use of ICT is lower among older people. This puts them into a fragile position in the job market. Additionally, the statistics on digital literacy and unemployment leads us to conclude that the greater the lack of skills, the higher the level of unemployment, that is to say, there is a direct relationship between the level of digital skills and unemployment.

The risk of digital exclusion for certain population groups such as the elderly (particularly in rural areas) or those on low incomes, or with low education levels, is particularly high in Portugal. The country, on the one hand, is advanced in terms of the infrastructure to support a digital society and the provision of digital public services but, on the other, presents low levels of use of these same services and infrastructures.

To face this situation decisive steps are being taken to exploit the opportunities offered by digital technologies and confirm the genuine interest from public and private sector actors alike in strengthening Portugal's role as a digital hub. In the national panorama, in the last years, initiatives have been promoted that present as priority area to improve literacy, skills and digital inclusion.

Regarding the use of social media by HR professionals for screening and hiring purposes, the most used sources are for job offer dissemination that is done through own or specific HR websites, the network of contacts and social media. Social media is mostly used in the

dissemination of job offers, to publicize the job vacancy and allows the diversification of recruitment channels and the gathering of CVs. The social networks most used by respondents were Linkedin and Facebook. Social platforms are used in the recruitment with frequency and then in the selection. Yet, to validate the selection they are rarely used, and lastly, in the post-hiring phase almost never. The main benefits of using social media in Recruitment and Selection processes are: reducing costs, increasing the number of applicants and reducing time.

Social media platforms are considered an important contribution as a source of information about future employees. Usually, what is sought are professional and academic qualifications, candidate training, recommendations, writing style, hobbies and activities. In Portugal some companies already use social networks in recruitment as a strategic tool that can be an important complement in the R&S processes, however, face-to-face contact would be hardly eliminated.

Companies are using social media as a support tool in Recruitment and Selection processes, which increases the need to provide unemployed adults with the digital skills to create and upgrade their own social media platforms and performance. Digital employability is on the agenda all over Europe. Aware of the transformative potential for the country and its representativeness in society and the Portuguese economy, a group of companies from the most varied sectors and the Portuguese State joined forces with the objective of developing, in the next years, a set of initiatives that allow a greater number of Portuguese to benefit from full digital citizenship. These policies aim to foster a more participatory and committed society through the extensive and systematic appropriation of ICTs by the elderly, low educated adults and inactive people with low professional qualifications.

So it is essential that all people have sufficient levels of digital literacy to enable them to boost their potential, to play their part in society and to fulfill their social and civic responsibilities. These skills are also essential for accessing the labour market, as well as for pursuing education and training. Increasingly, job vacancies require higher levels and a wider range of skills.

A large percentage of adults lack the necessary skills to continue learning and are less likely to take part in learning activities or to participate fully in an economy and society with a strong digital component. These people are at higher risk of unemployment and have a higher incidence of poverty and social exclusion. These shortcomings make it difficult for them to return to the labour market.

It is therefore necessary that at national and European level, policy makers and decisors implement policies that:

• promote the systematic investigation of the different aspects and dimensions of media literacy and the monitoring and measurement of the evolution of media literacy levels and evaluation tools to identify skills gaps and the design of specific training actions to fill those shortages.

• promote the inclusion of a media literacy discipline in core competencies for lifelong learning training courses.

• promote and ensure participation in lifelong learning actions of unskilled adults. Access to lifelong learning opportunities remains unequal between socio-economic groups and some groups of the working population are less likely to access them.

• promote access to flexible courses that enable low-skilled adults to improve their digital literacy skills and learn at their own pace.

• promote the enhancement of digital literacy leading to a recognized EQF qualification for people with no EQF level 4 qualifications in response to new skills requirements and the need for digital skills.

• make it possible for people who are already working to improve their skills, avoiding the risk of obsolescence of skills and loss of employment, while those who are further away from the labour market are the ones who most need help in this matter.

• Allow education and training actions to take place in appropriate learning contexts, schools, training centres or in the workplaces where properly qualified teachers and trainers apply specific adult teaching methodologies and exploit the potential of digital learning.

• Implement outreach measures that include raising awareness of the benefits of raising skills levels by providing information on existing guidance services, support measures, available opportunities and responsible bodies, and encouraging less motivated workers to take advantage of these opportunities.

• Implement measures such as direct support to learners (eg in the form of educational leave, financial incentives or tax breaks) or indirect support to employers to encourage the empowerment of their workers.

These measures could reduce the lack of digital competences of the adults, however all the stakeholders involved in this process must be aware of the real needs in this matter. Namely the companies responsible that should provide or allow their employees to access the necessary digital training actions. The national policy makers should provide major information about digital literacy, its importance, the consequences of the lack of digital competences to the economy and social development. The existence of financial supports to encourage the training actions for employees and company owners if not carefully managed could end in an ever-increasing need for support.

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Annex 3: Romania

Introduction

Romania, being a state member of the European Union, experiences an increasing of ICT in people's general life but not on the job market, at least not in the same rhythm of growth. One of the factors that influences forming of digital skills for individuals is level of internet access, which in Romania knew an ascending trend, from 30% in 2008 to 76% in 2017 (Eurostat, 2017). According to Digital Scoreboard (European Commission, 2015), a lack of digital skills can have a profound effect on people's general life chances and employability. Around 40% of the European Union (EU) population have an insufficient level of digital skills — of which 22% have none at all. These are often older citizens, less educated young people, lower income families and migrants. In this context, Romania registers the lowest percentage of individuals who have basic or above basic overall digital skills (29% of total interviewees), from EU's 28 countries (Eurostat, 2017). Besides this, 32% of the EU workforce have insufficient digital skills, with 13% assessed as having none at all (idem). It should also be noted that across the EU, 42% of citizens with no computer skills are inactive in the labour market. In Romania (94%) of most disadvantaged people have low or no digital skills[8] (Digital Agenda Scoreboard 2014 – Digital Inclusion and Skills). We mention that Romania has also a negative situation regarding digital skills in enterprises. For example, the percentage of enterprises who provided training to develop/upgrade ICT skills of their personnel in 2007[9] is 5% of total, comparing to EU 28 average of 19% (Eurostat database, 2014 last update).

The methodology used in this report combines consultation of bibliographic sources with empirical research, based on a structured interview survey. We want to reveal the weaknesses and strengths in digital competencies area for Romania and in the same time we want to discover many strategies to exploit the conclusions and turn them into concrete action plans.

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[8] Disadvantaged people are defined as individuals belonging to at least one of the following three groups: aged 55-74, low educated or unemployed, retired or inactive.

[9] The last updated year in Eurostat database

Chapter 1: Setting the Scene: Digital Literacy in Romania

Digital Literacy in Romania

In this section we provide an informative overview of the level of digital literacy in our country, based on Eurostat most recent data.

TABLE 0: DIGITAL LITERACY IN ROMANIA AND EU (28 COUNTRIES) IN 2015-2017

Individuals who have basic or above basic overall digital skills by sex			
% of individuals aged 16-74			
All individuals			
geo\time	**2015**	**2016**	**2017**
EU (28 countries)	55	56	57
Romania	26	28	29
Males, 16 to 74 years old			
geo\time	**2015**	**2016**	**2017**
EU (28 countries)	58	58	60
Romania	28	29	30
Females, 16 to 74 years old			
geo\time	**2015**	**2016**	**2017**
EU (28 countries)	53	54	55
Romania	25	26	28

Source: Eurostat, 2017

First of all, one could note that the percentage of Romanians with basic or above basic overall digital skills is lower than the EU average. More specifically, it is the lowest rate from EU countries, at the same level as Bulgaria. The only positive aspect that is noticeable is the ascendant trend for Romanians, which means small improvements have been made gradually, year by year in the interval 2015-2017.

TABLE 1: DIGITAL LITERACY IN ROMANIA AND EU (28 COUNTRIES) IN 2017, BY GROUP AGE

Age Group	EU/Romania	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	European Union (28) - 2017	26%	26%	31%	1%
	Romania - 2017	35%	19%	10%	$0^{(n)}$
16 to 24 years old	European Union (28) - 2017	15%	82%	57%	$0^{(n)}$
	Romania - 2017	39%	53%	21%	0
25 to 34 years old	European Union (28) - 2017	21%	75%	46%	$0^{(n)}$
	Romania - 2017	42%	43%	17%	0
35 to 44 years old	European Union (28) - 2017	27%	65%	36%	1%
	Romania - 2017	42%	34%	13%	$0^{(n)}$
45 to 54 years old	European Union (28) - 2017	30%	55%	27%	1%
	Romania - 2017	38%	25%	7%	$0^{(n)}$
55 to 64 years old	European Union (28) - 2017	31%	41%	16%	1%
	Romania - 2017	27%	13%	3%	0%
65 to 74 years old	European Union (28) - 2017	26%	25%	7%	1%
	Romania - 2017	14%	4%	$0^{(n)}$	$0^{(n)}$

Source: Eurostat, 2017

In what concerns the level in EU compared to Romania, for all individuals, no matter the age group, we may notice the following:

In EU countries (28), the percentage of individuals with low overall digital skills is equal with the percentage for individuals with basic overall digital skills, while in our country the percentage of individuals who have low overall digital skills is almost twice higher than that of individuals who have basic overall digital skills;

The percentage of Romanians with above basic digital skills is almost 3 times lower than the same indicator expressing the EU(28) average;

These two differences are quite significant and that phenomena may imposes national, public and private programs/initiatives to improve digital skills from institutions and stakeholders in job market area, in order as to increase the percentage of individuals with abilities above basic.

Meanwhile, the age seems to be a predictor for the level of digital skills. In the table no.1 we can see that the percentage of individuals with above basic digital skills decreases with age for both Romania and the EU. As we said before, one could note that the percentage of Romanians with above average digital skills is 3 times lower than the EU average. In the

same time, is noticeable that the discrepancy between Romanians and EU(28) average is becoming abrupt, starting with the group age of 45 to 54 years old, both for basic skills and above basic skills. This situation places this age group in a state of vulnerability, on a global labor market.

TABLE 2: DIGITAL LITERACY IN ROMANIA BY AGE GROUP FOR 2015 - 2017

ROMANIA					
Age Groups	**Year**	**Individuals who have low overall digital skills**	**Individuals who have basic overall digital skills**	**Individuals who have above basic overall digital skills**	**Individuals who have no overall digital skills**
All Individuals	2015	29%	17%	9%	:[10]
	2016	32%	17%	9%	:
	2017	35%	19%	10%	0[(n)]
Individuals, 16 to 24 years old	2015	32%	54%	21%	:
	2016	34%	54%	18%	:
	2017	39%	53%	21%	0
Individuals, 25 to 34 years old	2015	39%	38%	14%	:
	2016	40%	42%	15%	:
	2017	42%	43%	17%	0
Individuals, 35 to 44 years old	2015	38%	28%	9%	:
	2016	40%	32%	10%	:
	2017	42%	34%	13%	0[(n)]
Individuals, 45 to 54 years old	2015	31%	20%	6%	:
	2016	35%	22%	5%	:
	2017	38%	25%	7%	0[(n)]
Individuals, 55 to 64 years old	2015	20%	10%	3%	:
	2016	24%	11%	3%	:
	2017	27%	13%	3%	0
Individuals, 65 to 74 years old	2015	10%	3%	1%	:
	2016	12%	3%	0[(n)]	:
	2017	14%	4%	0[(n)]	0[(n)]

Source: Eurostat, 2017

Regarding the situation of digital competences by age group, analyzed only for the population of our country, synthesized in Table 2, we note the following:

The percentage of individuals with low overall digital skills has a slight increase between 2015 and 2017 for each age group defined in the Table 2;

In what concerns the basic skills evolution for 2015-2017 interval, the only age group in Romania which stagnates is the 16-24 years old category, all other age groups register small positive growth, including the categories that are focus of this report (45-54 and 55-64 years

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[10] : data not available

old). But, the stagnation for the young group is not necessarily a worrying aspect, because 16-24 years old Romanians have better basic skills, comparing to all other age groups;

For the category of above basic skills - for 3 years period there are no significant changes among any age group and this stagnation correlated with the fact that for 2017 there is a gap between Romanians and EU (28) average (observed in Table 1) for each of the 6 age groups to the detriment of Romanians, we may state that this category is still the least representative of the whole population surveyed.

By crossing two indicators: Individuals who have basic or above basic overall digital skills and Unemployment, for both Romanian population and EU(28) average member states population, the descriptive statistics are as it follows in the table below:

TABLE 3: DIGITAL LITERACY AND UNEMPLOYMENT (2015-2017)

All individuals- Age Groups	Year	European Union (28)		Romania	
		Active labour force (employed and unemployed)	Unemployed	Active labour force (employed and unemployed)	Unemployed
Individuals who have low overall digital skills	2015	24	28	35	37
	2016	25	31	37	41
	2017	26	33	39	49
Individuals who have basic overall digital skills	2015	31	28	20	17
	2016	30	26	22	19
	2017	29	24	22	20
Individuals who have above basic overall digital skills	2015	32	19	10	8
	2016	33	19	10	6
	2017	36	20	12	5

Source: Eurostat, 2017

The data above are highlighting how high digital literacy is associated with lower unemployment in EU in general and in our country. For each of the 3 years we studied, the percentage of individuals with low overall digital skills is higher within the unemployed comparing to total active labour force. Also, on the other side the percentage of people with above basic digital skills, both for Romania and other EU states, is lower for the unemployed category compared to active labour force (which includes employed and unemployed). In the same time we notice that for Romania the difference of percentages of unemployed individuals with above basic skills and active labour force with above basic overall skills is less noticeable than in the case of EU(28) average. That means that in Romania, both categories unemployed and active labour have in a smaller proportion above basic digital skill (comparing to EU-28 average). We draw two relevant conclusions from this situation above:

- The digital literacy and employment are in a positive linear correlation, which means that for a higher digital literacy the employment chances are increasing, both for Romania and EU (28)
- Romania has a significant smaller proportion of people with above basic digital skills compared to EU(28), both for unemployed and active labor force
- There is an estimate 10% difference between Romanians and EU (28) average, to the detriment of our country, in what concerns both unemployed/active labor force with low digital skills.
- Thus, given the importance of digital competences on the globalized labor market, it is necessary to intensify the efforts to train the autochthonous population, on the other hand, to assimilate the lessons learned from other EU Member States.

Literature Review

Currently there are more than 2.5 billion social media users worldwide and studies show that there will be 3 billion by 2020 (Bellini, 2016). This growth will be mainly composed of adults Greenwood (2015, p.4) and with this so-called maturation of the social media, we may imagine their implications beyond marketing and social studies, in areas like human resources management or B2B innovation (Jussila, 2015). Recruiting via Social Media is a actual topic, especially in the West Europe where new tools available to recruiters digital age lead to the formation of a new paradigm in providing workforce (Maxim, 2012). But some authors establish certain limits for these tools, aspects that are accurately presented in a national research paper we cite below:

- Holtsnider and Jaffe (2010) make the case that recruiting through social media becomes a key tool, even though many companies do not have clear policies for their use. Their study shows that over 60% of companies claim that plans to use social media platforms. Their efficiency is higher in promoting open positions in organizations, but the information available in social media about the candidates cannot be included in the decision-making process. (2010, p.76).
- Berkowitz also makes her point about social media tools. She suggests that social media should not be used to make final employment decisions, but it can be used as an extension of the resume, a conversation starter that gives the interviewer a deeper understanding of the candidate. (Berkowitz, 2016, p.2, apud Saros and Sav, 2016, p.2).

Also, as a consequent of the new General Data Protection Regulation (which it will apply starting at 25 of May 2018), we believe that enterprises should use online and social media tools with caution, meaning with responsibility and as a result of internal privacy and confidentiality policies.

Romania adopted its National Strategy for the Romanian Digital Agenda 2020 in February 2015. Overall, in DESI 2017, Romania belongs to the low performing cluster of countries and the only dimension of DESI indicator that is positive for our country is Connectivity. More specifically the score of Romania for 2017 for connectivity dimension is 0,54 which is better than the score of the cluster (0,53) that it integrates also our country. Still, in what concerns the Human capital dimension, Romania has a lower score than the integrator cluster (0,31 vs 0,40) with a small progress compared to the previous year (0,28 for RO, 0,38 the cluster' score. From the cited report we find out following qualitative information:

- In terms of digital skills, Romania's performance is below the EU average but some progress has been made with more people getting online and digital skill levels slowly improving, compared to 2016.

- A little more than half of Romanians are regular internet users (56%) compared with 79% in the EU.

- 28% of Romanians possess above basic levels of digital skills versus 56% across the EU[11]

- Romania benefits from a good recruitment pool of science, technology, math and engineering (STEM) graduates with 1.6% of Romanians aged 20-29 years old holding a STEM degree although this level is falling according to the latest figures (compared to previous year).

- The share of ICT specialists in the economy is increasing (last updated year-2015) as IT jobs offer attractive salaries (EDPR, 2017) and the IT industry is growing gradually in our country.

In what concerns the use of internet, Romanian Internet users engage in online activities much less than the EU average, when it comes to e Commerce and e Banking; However, still they are intensive users of social networks - with 74% individuals using social networks, compared to EU average of 63% (Digital Economy and Society Index, 2017). Still, we don't know what are the type of networks that these users are accessing, if they aim only social contacts or professional purpose, such as learning or job/professional networks.

Meanwhile, we encounter a negative situation among enterprises, with only 8% of them using Social Media for business purposes (Digital Economy and Society Index, 2017), compared to EU28 where 20% of the enterprises uses social media (Europe's Digital Progress Report, 2017). That might suggest at first glance, that the Romanian enterprises don't use in their majority social media channels in the recruitment, screening and selection practices in human resources area. In correlation with this information, from Eurostat database we find out that in Romania in 2017 only 45% of all type of enterprises have a website, comparing to 77% of EU enterprise. Taking into consideration this low degree of business digitization, the hypothesis of poor internet or social media practices in HR processes is emerging.

A total different perspective we encounter in private reports, such as the study called *Social media and the Romanian business environment*, conducted by EY Romania[12]. This study is based on a questionnaire applied between 3 –20 November 2015 and it analyzes the responses of the 270 respondents from the local business environment. The report used for global comparative data is the "2015 Social Media Marketing Industry Report –How

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[11] These percentages are slightly different than those one presented in Table 1, which data is collected from Eurostat database but the difference is still noticeable, in detriment of our country

[12] EY is one of the world's leading professional services firms with approximately cu 212.000 employees in 700 offices across 150 countries, and revenues of approximately $28,7 billion in the fiscal year that ended on June 30, 2014.

Marketers Are Using Social Media to Grow Their Businesses". The synthetic relevant conclusions of this report are (Social media and the Romanian business environment, 2015):

- 74% of the companies from Romania use social networks for promotion, sales and recruitment and 56% of the respondents are using social networks for recruitment purposes;
- Financial and banking institutions signal that they use social networks for employer branding (56%);
- 20% of the respondent companies claim having started using social networks recently, in the last 2 years (previously to interview year);
- The most accessed platform in Romania in 2015 remained Facebook with 92% of responses (93% globally), followed by LinkedIn with 75% (71% globally) and YouTube with 37% (55% globally);
- In Romania, significant increases in the use show: LinkedIn (+14% compared to 2014), YouTube (+8% compared to 2014), and Twitter (+8% to 2014).

This positive situation regarding the social media in recruitment processes perceived by private perspective might differ from the Eurostat data due to: the size of enterprises included in the sample, the sector that they represent and the accuracy of sampling. But we are tempted to believe that the proportion of those enterprises using social media for HR is somewhere in the middle, in other words, not 8%, but not even 56%. In support of this statement we want to present briefly a scientific article that presents organizations behavior regarding recruitment software tools based on social media in Romania [5]. Briefly, this quantitative research includes 100 companies from Romania and it analyses:

1. The frequency of using social media recruitment tools by companies; 2. Identify favorite social media instruments used by companies; 3. Identify the type of information companies are looking for; 4. Level of satisfaction offered by social media recruitment tools.

The two authors cited above (Saroş and SAV, 2016) are using a 8 items questionnaire based on "funnel" technique. Their most relevant findings are as it follows:

- 61% of those 100 companies studied use social media recruitment instruments only if they need to check some information from candidate's CV,

- 15% use every time they select a candidate,

- 13% use only if the director requires that and 11% rarely use these instruments.

In completion of these relevant data, the authors find a link between the age of HR specialists who took part at this study and their digital behaviour, more exactly:

- The vast majority (46.14%) of the respondents that use social media recruitment tools only if the director requires that are more than 45 years old.

- Also, 54.55% of respondents that rarely use social media recruitment tools are more than 45 years old.

It is noticed that the vast majority had chosen Evernote as favorite social media recruitment tool (57%), followed by Jobvite with 33% and Talent XRay (16%) (Saroş and Sav, 2016). In terms of satisfaction, the respondents declared themselves satisfied about social media

recruitment tools (the average scale was 4 for a Likert scale of 1 to 5). But the most surprising finding of this study is the type of information that companies are looking for when are searching an employee: information about candidate's appearance counts the most (47% of respondents).The conclusions of this studies are: that vast majority just use the recruitment tools to verify information about candidate and Romanian companies should use social media recruitment tools more often.

Policy and Major Stakeholder Initiatives

The Digital Skills and Jobs Coalition is one of the 10 actions from the complex New Skills Agenda for Europe. This Coalition acts beyond ICT sector to e.g. health care, farming, education, accounting, engineering and retail. Romania is one of the 17 member states that have joined the mentioned coalition, suggesting the interest of private and public Romanian organizations on digitization, both for all citizens and for the active workforce.

First, we want to resume main goals by 2020 of the Digital Skills and Jobs Coalition, at European level:

• Train 1 million unemployed young people for digital jobs

• Support the upskilling and retraining of the workforce and in particular support small and medium enterprises (SMEs)

• Modernize education and training

• Reorient and make use of available funds to support digital skills

• Awareness raising.

From the most recent study of the Digital Skills and Jobs Coalition, focused on digital single market, we find out that in EU *the demand for digital skills is clearly related to the job role of the worker, and the evidence gathered through the European Digital Skills Survey indicates that in some job categories more than 90% of jobs require specific types of digital skills(EC, 2016, p.7)*. According to 2016 data from *Europe's Digital Progress Report 2017*, Finland, the UK and Sweden had the highest scorers under both the basic skills and usage and advanced skills and development sub-dimensions. Romania, Bulgaria, Greece and Cyprus rank lowest overall on the Human Capital dimension of DESI (Europe's Digital Progress Report, 2017). In what concerns internet use Romania made significant progress in recent years; e.g. between 2010 and 2016 regular internet use increased by 22pp. Also, Romania was one of the Member States where the share of non-internet users fell the most between 2010 and 2016 (-27 pp). The cited report states large disparities across Member States, in what concerns digital skills: in Bulgaria and Romania, nearly three quarters of the adult population can be considered as lacking basic digital skills[13]. *Although most jobs currently require a basic level of digital skills**, 11% of the EUs labor force in 2016 still had none (2 pp. improvement compared to 2015). In countries like Portugal, Italy, Bulgaria and Romania, this figure exceeds one-fifth of the labor force (more than 30% in Romania and Bulgaria)[14]. In the same time, in 2016, 37% of Romanian labour force had low digital skills, 22% of labour force had basic digital skills and 10% of them had above basic digital skills (as it is noticeable in Table 3). In 2017 data shows small improvements for Romanians, with 39%

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[13] Idem, page 8

[14] Idem, page 9

of the active labour force with low skills, 22% with basic skills and 12% of active individuals with above basic skills (Table 3, chapter 1.1). On a deeper level of analysis in 2016, 28% of European internet users had no software-related skills, while 50% of Romanian internet users are missing software/content creation skills.

In this context, we may observe the disparity of Romanians with other individuals in EU and we may state exactly with the quoted report that massive efforts continue to be required to up-skill and re-skill the European labour force as well as the population at large so they can fully benefit from the digital transformation that is currently underway[15]. We may not discuss of inclusive labour markets, innovation or growth in a society where almost 30% of the active population has no digital skills and only 12% of them have above basic skills.

The Romanian Government has approved, by Decision in the beginning of 2015, the National Strategy for the Digital Agenda for Romania - 2020. One of the 7 pillars of the Digital Agenda is Pillar VI - Increasing the level of digital literacy, skills and inclusion - creating a bridge to the digital gap for all consumers so that they can benefit equally and fully from the benefits of ICT services. In terms of digital literacy, Romania sets some concrete objectives in the action plan included in the mentioned Strategy but we have not found in this plan a preoccupation applied to increase active labor force' literacy in general, but rather an increase in e Government indicators and Interoperability or Indicators for ICT application in Education field, such as:

- % of people using the Internet regularly. Target: 75% by 2020
- % of people in the underprivileged category using the Internet. Target: 50% by 2020.
- % of students trained in ICT use. Target: 75% by 2020
- % of educational institutions using OER, Web 2.0 in education. Target: 75% by 2020.

Also, we did not find in the National Strategy a distinct direction or initiatives set out in the action plan to increase the digital competence of older people. Only if we consider them as part of some disadvantaged categories mentioned above (*underprivileged category*).

Europe's Digital Progress Report (EDPR)-2017 for Romania states that in what concerns the Human Capital (internet use, basic and advanced digital skills), at this point digital skills still seem to be mostly promoted through private sector initiatives, rather than by public policy (EDPR, 2017a). In Romania The Skills 4 IT Coalition, a platform working within The Grand Coalition for Digital Jobs, an initiative of the European Commission from 2013, was developed to solve the digital skills deficit and the employment of thousands of vacant job vacancies in the ITC sector. The Digital Skills and Jobs Coalition brings together Member States, companies, social partners, non-profit organizations and education providers and its aim is to act to tackle the lack of digital skills in Europe. The Digital Skills and Jobs Coalition Governing Board (with 12 members) provides strategic leadership to the Coalition. The Coalition also shares digital skills initiatives, which can be replicated and scaled up across Europe. In December 2017, 20 finalists were selected and five outstanding projects were awarded the European Digital Skills Awards 2017.

The members of this coalition in Romania are especially private NGOs or stakeholders, such as: ECDL Romania, ARIES Transilvania, ANBPR (NATIONAL ASSOCIATION OF PUBLIC LIBRARIES AND LIBRARIES IN ROMANIA), APDETIC (Association of the Producers and

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[15] ibidem

Distributors of Information and Communication Technology Equipment). This information confirms the fact that Multi-stakeholder partnerships are more visible than the public initiatives.

The European Digital Skills Award presents initiatives that are original and can be scaled-up or replicated in other countries and sectors in EU. For the 2017 edition a total of 243 projects applied in, one of the following categories:

1 - Digital skills for all

2 - Digital skills for the labour force

3 - Digital skills for ICT professionals

4 - Digital skills in education

5 - Digital Skills for women and girls.

One of the 20 finalists projects within Category 1: Digital skills for all, was the project **Just learn IT! in Romania.**

The northern branch of Medgidia municipal library and the non-governmental organization BiblioVoluntarii run several programmes to increase the digital literacy of people with disadvantaged backgrounds in the region. The digital skills initiative include: projects that offers jobseekers the opportunity to integrate and reintegrate into the labour market by acquiring new skills and abilities; Juniors learning basic computer skills; Youth, adults and seniors learning to access the internet, use of modern devices and make electronic transactions; female oncology patients whole learn, among other things, how to use computers, tablets and smartphone and navigate the internet.

Another finalist project, for the category Category 4 of the contest: Digital skills in education, it was **Opening Opportunities in Romania.**

Opening Opportunities is a mentor-lead programme, in which IT professionals mentor teams of high school students who discover computer science, product development and team work in poor regions in Romania. The project includes training for mentors as well as students and showcasing technology in public spaces such as libraries. At the end of the mentoring period, seven teams are selected by a jury and the finalists pitch their computer science projects in Bucharest. The project is run by *Asociatia Techsoup* with the support of Microsoft YouthSpark and in partnership with Microsoft Romania and the National Association of Librarians and Public Libraries.

In the context of the Digital Agenda for Europe and the European Year for Active Ageing and Solidarity between Generations 2012, ECDL ROMANIA initiated in April 2012 the Digital Literacy for Seniors programme. The general objective of this private programme- called *Digital Literacy for Seniors* programme is to ensure that marginalized groups such as senior people are empowered to participate in the Information Society. Through the Digital Literacy for Seniors project, groups of seniors in each district of Bucharest are enrolled with no costs in the ECDL Equal Skills training and certification programme. Digital Literacy for

Seniors started in April 2012 and successfully continued in 2013 with new groups of elderly people that could benefit from the ICT opportunities.

We also want to mention a public digital literacy program supported by the Romanian Public Libraries. Since its launch in 2009, Biblionet Romania program has provided e-Skills training for more than 1300 participants, especially difficult to access citizens such as the elderly, retirees, adults, students and the unemployed. More than 1.8 million Romanians are currently using public libraries, and 1 million people have expressed their interest in participating in free ICT courses.

Synopsis

In the context of a single digital market desideratum, in some job categories more than 90% of jobs require specific types of digital skills. Romania is one of the 17-member states that have joined the Digital Skills and Jobs Coalition, suggesting the interest of private and public Romanian organizations on digitization. Also, Romanian government has adopted in 2015 , the National Strategy for the Digital Agenda for Romania – 2020 but we didn't find within a distinctive action plan or specific objectives for increasing active workforce literacy. Even if the topic of digital literacy seems to be a national priority, in our country the individuals' digital skills encounter one of the lowest rate in EU: 27% of the active labor force with no skills, 39% with low skills, 22% with basic skills (almost half than EU28 rate) and 12% of active individuals with above basic skills, in 2017. Overall, in DESI 2017, Romania belongs to the low performing cluster of countries and the only dimension of DESI indicator that is positive for our country is Connectivity. This suggests that stronger efforts should be made, to *up-skill and re-skill* Romanians' digital skills. Multi-stakeholder partnerships are more visible than the public initiatives in Romania in what concerns applying national objectives corresponding to the Digital Agenda for Europe. Within this series of private initiatives it is worth mentioning: *Digital Literacy for Seniors* program launched by ECDL Romania or the projects *Just learn IT! in Romania* (by the northern branch of Medgidia municipal library and and BiblioVoluntarii) *and Opening Opportunities in Romania* (run by Asociatia Techsoup with the support of Microsoft YouthSpark and in partnership with Microsoft Romania and the NALPL)- both finalists of the European Digital Skills Award 2017 edition. However, despite the originality or local impact of the cited projects, we note that local or private initiatives are dedicated to a narrow target group and do not emerge in a set of integrated measures. Also, the dispersion of initiatives makes it difficult even to measure the impact at national level of these projects. In what concerns the public initiatives, we mention Biblionet Romania program that has provided e-Skills training for more than 1300 participants since 2009. Without denying the results of this program, we can ignore that many other public institutions - which have attributions in the field of employment, should have been more active or supportive regarding the digital literacy of the citizens.

Currently there are more than 2.5 billion social media users worldwide and recruiting via Social Media has become a topic of the day. Romanians are intensive users of social networks (with 74% individuals using social networks, compared to EU average of 63%), still we don't have evidence if they aim only social contacts or professional purpose, such as learning or job/professional networks. Meanwhile, we encounter a negative situation among enterprises, with only 8% of them using Social Media for business purposes, compared to EU28 where 20% of the enterprises uses social media. That might suggest at first glance, that the Romanian enterprises don't use in their majority social media channels

in the recruitment, screening and selection practices in human resources area. This situation is contradicted by some empirical research that highlights that 15% of HR specialists use social media instruments every time they select a candidate.

Chapter 2: The Perspectives of HR managers

Objectives of the study and research questions

The purpose of the interview is to develop the digital and media skills of low-skilled / low-qualified unemployed adults 45+ years of age so that they are motivated and able to build to strengthen their access to employment.
The objective of the interview conducted aimed at:

a) Understand how recruiters and HR managers use social media to evaluate prospective employees during the hiring process.
b) Understand what digital skills are expected by HR managers for employees who are 45 years old or older.

From the interviews conducted we can conclude that the digital competences importance vary from one sector of economy to another, but if it is to compare the importance in each sector with the past years, we can conclude that digital competences are starting to become a key point for each job requirement, in some of them more rapidly than in the others.

With the exception of construction field, each HR manager stated that their field starts to be more and more automatized and as such to require the use of digital skills, at least in the format of receiving, reading and providing basic information in a digital format. Even job positions as shop vendors or shop assistants require nowadays an increasingly set of digital skills, skills such as sending / receiving and e-mail, write and read a report or instructions in digital format etc. starting not even to be seen as digital competences, but an assumption that each candidate most know by default this things.

Regarding the requirements in digital skills proficiency, beside the differences beaming between sectors, that are a normal fact and can be explained by each sector specificity, we have identified a gap between what companies in Bucharest are expecting compared with the rest of the country (requirements being with at least 45% more increased then the rest of the country) and also between small and medium size companies compared to branches of multinational companies here in Romania, were the focus on digital skills is the starting point for most job positions company (even for unqualified job positions) in regards to a local that is more inclined to accept the reality of the local labor market. On the other hand multinational companies have a structured system of on the spot job qualification, with a series of trainings provided for each employee and even tailored courses along the way in order to help the employee improve or develop certain skills required.

The above mentioned differences can be seen also in regards to the means used by companies in making their available job positions known. In Bucharest and larger and more economically developed cities (such as Timisoara, Cluj, Brasov) companies are promoting all their job positions using online platforms, most used being www.ejobs.ro ; www.bestjobs.eu. In addition to that they are also researching and recruiting using LinkedIn, as the main platform when it comes to identify and verify suited candidates. As for the other platforms, Facebook and Twitter, the opinions were divided, some of the HR managers considering them important in differentiate candidates and make their personal profile, some taking no account of those platforms, considering them as the candidate personal life in which the company should not interfere. The rest of the respondents (around 65%), with companies located outside of Bucharest, are stating that they use a mix

of on-line and off-line measures (such as printed version of newspapers, word of the mouth, local job fairs), having even companies (in production and construction sector) in which they are using more than 95% offline promotion strategies.

Methodology

The research is an empirical one which involved the application of a complex interview guide, structured on a survey with 11 distinct sections. The survey was based on the "funnel" technique, which includes progressive questions, from simple to complex, for accommodating the interviewee. We used both open-ended questions and closed questions with multiple variants of answer. The questionnaire was applied to a group of 10 human resources specialists, representatives of some enterprises in Romania. The interviews were held in the interval of December 2017/January 2018, approaching face-to-face meeting, due to the complexity and the length of the questionnaire. As a result of these interviews, we collected a series of qualitative and qualitative data. Quantitative data has been interpreted and processed using the Excel Program, using multiple tables and charts.

One of the limitation of the methods used: the small size of the interviewed group did not allow us to process the data through analytical statistics methods or programs, such as SPSS, because there could not have been established accurate correlations, i.e causality or codependency between the factors or indicators pursued.

The strengths of the method used: due to the complexity of the survey, we have obtained a large quantity of relevant data that have allowed us to accurately outline the behavior of Romanian employers in terms of digital recruitment instruments or the perception of employers of the importance of digital skills in a prospective/current employee, following multi-dimensions of the literacy (Information Processing, Communication, Content Creation, Problem Solving, Safety, Social Media Literacy). We mention that we have pursued standard key competencies as they are established by the Digital Competence Framework 2.0. For the closed questions we have used a scale of measurement from 1 to 7, corresponding to 7 levels of proficiency.

Results

Demographic Information

In our selection for the HR managers we have tried to sample as best as possible in order to reflect the Romanian reality regarding the situation on the labor market. The average age of the respondents is 40 years old, having HR manager aged from 29 years old and up to 62 years old. Regarding the gender distribution we have noticed that there are definitely more women occupying this position, for our sample we have 7 women and 3 men. Doing a research on this aspect we have found out that this position, in Romania at least, is mainly occupied by a female, more women working in the human resources departments than men. For conducting this interview we have contacted an average on 30 companies from which we selected at the end this 10, and we have dealt mainly with female HR managers.

Regarding the level of education we have found out that all of them have higher education level, either bachelor degree or master degree. In our case we had an even split between the 2 forms of education.

Division of HR managers based on education level

Master's or equivalent, 50% Bachelor's or equivalent, 50%
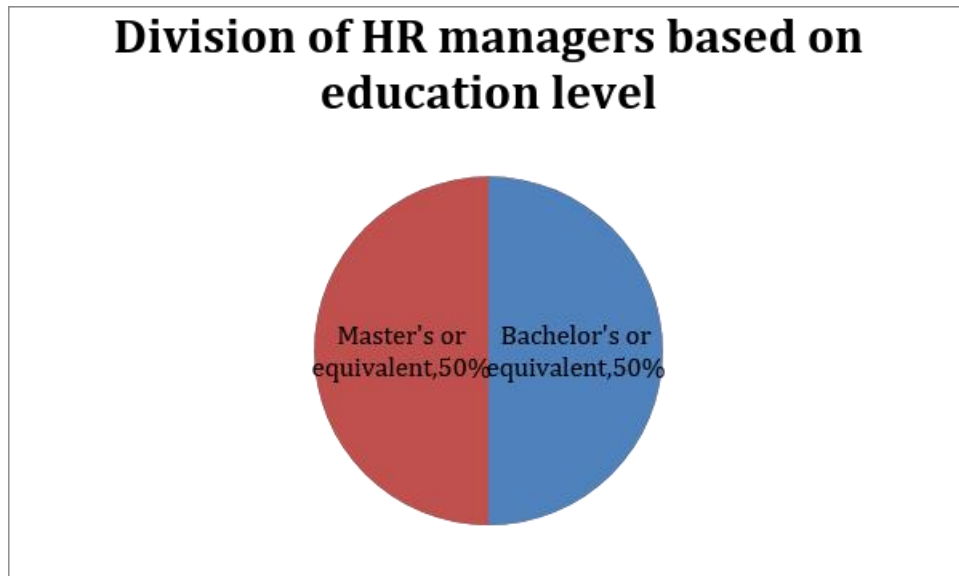
As for the education level we have had respondents with a 2 year long experience and up to 28 year experience. The ranges are presented below:

Years of experience in the field for the HR managers

(Horizontal bar chart showing Years of experience by Respondant. Respondant 1: 28, 2: 9, 3: 13, 4: 15, 5: 5, 6: 3, 7: 2, 8: 25, 9: 10, 10: 10. X-axis: Years 0 to 30.)

In order to have a wider view of the situation regarding media literacy requirements on the labor market for those aged 45+ we have tried to have a mix between most important sectors of our economy in which jobs are available, excluding the IT sectors with companies in which a high level of media literacy is involved and actual specific IT studies are required. From the good production sector, to construction, to retail and up to IT companies we have tried to link the majority of job offers to media literacy requested by HR managers.

Companies involved in the interview
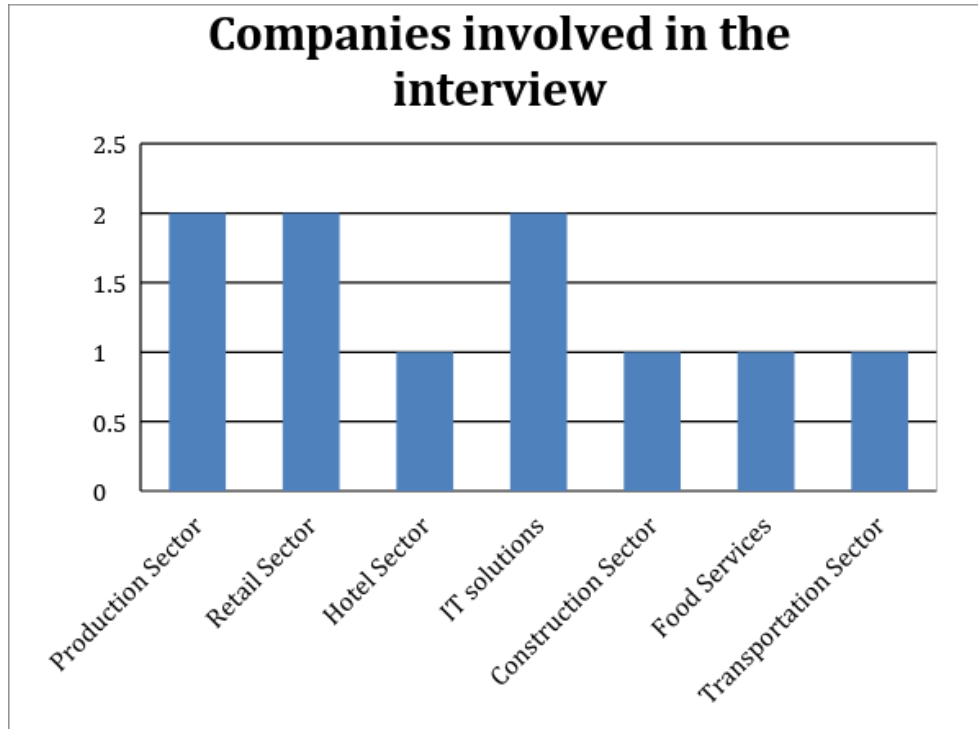
Open-ended Questions

Digital literacy

The general overwide highlighted by the interviews undertaken was that the digital literacy is starting to find its way in a rapidly rate in all economy sectors, due mainly to the automatization and digitalization era in which we are living. Discrepancies are to be found base on the characteristics of each sector and the geographic position of the company, discrepancies addressed above in the 2.3.1 section. Digital literacy is important for employer's point of view for two main reasons:
- Easiness and effectiveness (both as cost efficiency and as number of target group reached) of the on-line measures of job positions available promotion, push more and more jobs opportunities to be promoted only on-line, for this reason employers expect from the candidates to know how to search and apply for their positions and also have a professional profile in platforms such as LinkedIn.
- Need of fast adaptation to the global market requirements and adopting digitalization as a cost reduction effective way.

All respondents stated that from their expertize digitalization is affecting older workers, that even though are having a better education and professionalism when it comes to a work place, they were not exposed much to the digital world as the younger generation that have it included in their everyday life, making them very vulnerable on the labour market. We

have found that age was not a criteria for any of the companies when it comes to a job position, but the more digital skills a job required, the age dropped below 45, with positions even being below 30. For top level / management positions this statistic doesn't apply, here for most companies being exactly the opposite, due to the fact that such a job is requiring most of all experience in the field, that can not be topped by any of other factor.

Duties of employees 45+ years of age and their link to digital competence

The interviews revealed that most of the job positions occupied by the employees above 45+ are jobs that are not requiring a wide range of skills, mainly jobs that are not involving a higher education degree, even jobs for unqualified personal, or jobs with a repetitive tasks, except few cases with adults that are well qualified for their position and can steal work in the same domain. When it comes to workers above 45+ it is highly difficult for them to integrate in the labor market if their current job is not available anymore, even small adjustments need it are an obstacles for them, due mainly to the digital skills barrier (examples: need of taking an online course, of searching a job position on-line and applying for it, need of using a different software etc).

Due to legislation gaps qualification at the workplace it is proven to be difficult for small to medium companies, that prefer to try to find already qualified candidates or even pay more a candidate then train one. Larger companies, mostly branches of multinational companies, have their own training programs in place, mainly generated by the larger number of employees need it. Starting from an average of a 2 weeks training at employment, in order to give the new employee the time to familiarize with the company, from the task related training to their internal report system used, to annual trainings in order for the employee to keep being updated with the changes required by his position, to individual tailored trainings based on the recommendation of the human resources department after the periodical evaluation of that employee.

Digital literacy and recruitment

Depending on the sector of the company lack of basic digital competences were seen as an obstacle in the recruitment process, problem that most HR managers pointed out will become more and more stringent for those above 45+.

For production sector digital competences are not yet seen as a requirement for any position, most HR managers stating that they have to comply with the labor market reality – above 40 are the persons still wanting to work in this field, that sometimes is not very fell paid and it is seen difficult to work in for the younger generations, above 40 being also the ones qualified for this positions, since in Romania for many years now vocational and technological schools were closed.

The majority of the persons interviewed see digital skills as a problem for above 45 people to access jobs, including in their companies, but on the other hand they also state that most persons above that age do not even apply to a job if in the job description is mentioned something related to digital competences. Mainly for this reasons we had only two respondents that mentioned they had to reject a candidate due to lack of digital skills, but

they mentioned at least for their case it is not related to age, both having also younger candidates that did not meet their requirements in digital skills area.

Digital literacy gaps

The is definitely a gap between generations when it comes to digital literacy, but with proper help most HR managers concluded that persons above 45 years old are more willing to learn, improve and be more responsible in general then the younger generation when it comes to the workplace. The recommended skills to be developed or improved agreed by the majority are Microsoft Office Suite.

Role of Social Media Platforms in the hiring process

The most used hiring platform is by far www.ejobs.ro, followed by www.hipo.ro, both being websites specialized in job seeking / promotion place, and social media platform LinkedIn. Regarding the social media platform Facebook the opinions were divided, around 60% of the respondents considering it is not very useful or relevant from their point of view, the rest of 40% considering it a useful tool in recruiting personal. This division was based once again on the sector of the company, for services sectors (such as IT, hotel and food services etc) being important, as for the rest not at all. The platforms Twitter and Instagram, other two in rank as popularity in Romania, were not important or monitored by any of the respondents.

For companies with above 100 employees most of them rely on internal evaluations and reports when it comes to the hiring process, from which they tailored strategies that suit their companies, all having a mix of online and offline promotion.

From the feedback taken regarding social media platforms are increasing rapidly in importance when it comes to hire personal, being cost efficient for companies to make a proper research and recruit process. For this reason most of them pointed out on the importance of the online information that a person is presenting / disclosing about herself, and advising especially young generation to put more taught in their on-line imagine by correlating that imagine with the profile of the job they want to have now or in the future.

Role of Social Media Platforms in advertising new openings

As mentioned at section 2.3.2.5, most used social media platforms when it comes to job advertising is LinkedIn, followed by Facebook. When it comes to general imagine advertising for a company Facebook is the most used one.

Once again for companies working in the service sector or in a sector that has a direct connection with the final consumer social media is used at a current base. At the opposite spectrum we have the production sector for which social media promotion is practically non-existing.

Most companies see social media as a tool to create and promote their image to a large number of audience, tool that is proven to be less expensive than former channels combined, and that can provide relevant reports / statistics in a blink of an eye. This platforms even help small companies with not a large marketing budget to be able to have

a visible online image of their company, with different tips and trick even provided by the platform itself. Regional or national visibility for small companies was not easy until the introduction of social media, international one not even being an option until recently.

As each company puts taught and effort in what they want to project online as their image, values and so on, the employees should do the same, in the opinion of most HR managers (9/10). Since there is a lot of competition now on the labor market having a coherence between your professional profile online, your CV and your personal life online is the key aspect that is differentiating candidates even before having their first interview. HR managers go even further and recommend an applicant, if interested in a company, to try to align his online profile with the values and views of the company before applying to one, because they as recruiters will verify it for sure.

Importance of Social Media Profile

Importance of social media profiles when it comes to the hiring process it is linked with the company sector, but more and more companies are now changing perspective and start having an online presence and understand how to prospect candidates via online platforms.

7 out of 10 respondents considered personal social media profiles that are not relevant when it comes to prospecting and assessing a candidate, even though admitting that they verify them sometimes, but past experience underlined that there are no direct connection between what a candidate is able from the professional point of view and what he is presenting on-line as his personal life. This conclusion was made after several years of trying to apply general recruitments strategies imported directly from more developed countries, not taking into consideration the lack of Romanian population when it comes to this subject. Even at the present time this is the situation most of them consider that in the very near future the situation will be different, and an increase of social media platform influence will be seen in the recruitment process. Another aspect underline by one of the HR managers from a larger company was that they would have wanted to use social media in the research background of a candidate, but the reality of the market is that there are extremely few candidates, having positions sometimes unoccupied for several months. Mentioning this aspect to the other 2 remaining HR managers to be interviewed they also agree on the lack of personal that Romania is facing at this point, majority of hard working people (doesn't matter the age) start to search a job outside of the country, for different reasons like better health system, better education system, but mainly for a higher income.

Most HR managers rely mainly on LinkedIn network, but all of them admit that almost all candidates above 45+ using this platform are well educated and skills rounded persons. They encourage as many candidates as possible to start creating their profiles, even if they do not fit the above mentioned criteria, since both for companies as for themselves will be a great opportunity, being able from the companies point of view to have a wide pool of candidates and for all job types, and from the candidate point of view having access to a wider range of opportunities.

Social Media and Internal Usage

According to the answers given by the HR managers, only 4 of them stated that the companies used Social Media for interviews. Out of the other 6 HR managers, 2 stated that

until this point it wasn't necessary to use Skype since the situation allowed having face to face interviews, but they consider them as being useful and even mandatory for persons that are occupying leading position. Furthermore, 1 out of the 6 HR managers that don't use Social Media platforms for interviews stated that the company prefers to have direct contact with the potential employees during the selection process. The most commonly mentioned platforms were LinkedIn and Skype before and during the interviews.

Concerning the use of Social Platforms for internal purposes, 2 out of 10 HR managers don't use any Social Platforms for internal purposes. The most commonly used platforms according to the HR managers were Facebook and Whatsapp in communication and only 1 manager mentioned Instagram. Although most of the HR managers did not answer the question regarding for how long the companies are using Social Platforms for internal purposes, the 3 respondents mentioned periods like 2, to 4 and 9 years.

Regarding the expectations of the employers on the employees skills in using Social Media the answers of the managers reveal that 7 of the companies consider that such competences are required. 1 out of the 7 mentioned that using Social Media is mandatory, while another respondent considers that it is necessary only for the office workers.

Concluding Remarks

Only two HR managers draw conclusions: one of them by stating the importance of developing the digital skills for persons above 45 years old, as being more responsible at the workplace, more connected with the workplace and eager to adapt and invest time in order to keep the same job, as compared with the younger generations were the average at a working place sometimes drops even at 6 month. The second one underlined the stringent aspect of not having qualified personnel in general, not only when it comes to digital skills, and the difficulty in occupying position, doesn't matter the strategies used.

Both HR managers concluded in welcoming our project with enthusiasm and consider it an important step for the persons aged 45+ to transition to the new requirements of the labor market.

Synopsis

There is a real need of basic digital competences when it comes to above 45 years old employees that can be seen from the interviews conducted, but also a need of qualified personnel. Sadly Romania is the country with the biggest population decrease in Europe, entering in the 27th year of decrease according to National Statistic Institute (NSI), Romania being a country of emigration. If the reasons of the population emigration are not at our reach to be changed, we can continue in our project goal of tackling the gaps in the digital skills of above 45 years old persons, having at this point useful guidelines from the HR managers in which to proceed. From development of computer friendly mind set to those above 45+, to develop Microsoft Office Suite as a key aspect in any company internal and external communication, and up to advice on how companies are recruiting and what they are asking from their candidates, our interviews come as a key point in providing the ground of the next stage - development of the online resource platform for building the digital competences of low-skilled / low-qualified unemployed persons over 45.

Conclusions

In conclusion, after the research developed, the Social Media platforms are considered very useful and are intensively used by companies but unfortunately mostly by young employees. Employees above 45 are generally occupying positions that are not requiring digital skills. Digital skills are important for employability of a person, according to what the companies' HR representatives mentioned. Most jobs require some kind of computer related knowledge, but generally people above 45 are not applying for jobs in which description is mentioned any kind of digital skills required. As policy recommendations is expected that The Labor Force Employment Agencies will develop an digital and IT national program of training for people above 45 to be developed continuously by representatives of the agencies in order to increase the digital competencies of unemployed 45 + people. Another solution as policy recommendation will be an Governmental Financial Strategy that can be accessed by companies in order to invest in digital courses for their own employees. As a solution for employees above 45 but without internal digital formation perspectives inside the companies, the recommendation is to be developed an online basic level course with basic elements such as 'Office package' or 'Basic internet usage' for eg that people willing to learn by themselves can access it for free. The recommendations can be developed and promoted at National Level and European as well. National coalitions for digital skills and jobs should be established in all Member States and need to be more explicitly supported at a high political level (Ministerial) to become sustainable and have impact, for example by implementing national digital skills strategies.

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Annex 5: Spain

Introduction

Digital technologies are key drivers of innovation, growth and job creation, and therefore digital competence is increasingly linked to participation in the labor market. Digital competence is not only about being familiar with digital technologies, but also about how new technologies and online media are used. "The demand for digital technology professionals has grown by 4% annually in the last ten years. Yet digital skills are lacking in Europe at all levels. Despite continued strong employment growth, the number of unfilled vacancies for ICT professionals is expected to almost double to 756000 by 2020" (New Skills Agenda for Europe, 2016: 7). In the same way, almost half the EU population lacks basic digital skills; with about 20% of people having none at all. The rapid digital transformation of the economy means that almost all jobs now require some level of digital skills, as well as the participation in society at whole does. The collaborative economy is changing business models, opening up opportunities and new routes into work, demanding different skill sets, and bringing challenges such as accessing upskilling opportunities. On the other hand, the internet is changing employers' recruitment and selection methods, and the process of job search by individuals. Employers and recruiters are not only posting vacancies on the internet, but they are increasingly using the internet to screen and select applicants. Despite the significant increase in the use of ICT & social media by low-skilled/low-qualified adults, they demonstrate a low level of awareness and understanding of the broader implications that their online activity can have on their social & professional life. It is thus important that low-skilled/low-qualified adults (especially over 45) to develop their media and digital skills so that they are able to effectively use social media in a way that can generate increased opportunities for them in the social and professional arena.

Spain is one of the most important ICT markets by volume in Europe: €105,868 Million. There are more than 33,000 ICT companies, including digital content, operating in this country. The sector employs more than 471,000 workers (Informe ONTSI, 2017). The personnel employed in the ICT sector and the content amount to 471,860 people in 2016, 4% more than in 2015. Employment continues with the growth path that began in 2013 and the negative trend experienced a few years ago is now overcome. The majority of the employed personnel (78%) comes from the ICT sector, specifically 367,906 people.

The methodology used on this study consisted in a combination of data. The first step was based in collect background information of the current state of affairs on the topic. At the same time, interviews with the recruiters and/or HR managers took place. After the interviews, a follow up desk research was made, based on the results of the interviews.

Digitalization that can be defined as the development of new and more efficient business models or the improvement of human capital will have a positive impact on productivity that could compensate the tendency of the economy to contract. This positive impact of digitalization could lead to an increase between 1.3 and 1.8% of per year GDP.

The potential results of the study in Spain maybe used by state authorities and business leaders in the definition of inclusion strategies for adults over 45 in the labour market that

emerge from the burgeoning ICT sector. In addition, acknowledging that the population has low digital skills, different initiatives could be launched to remedy and, in parallel, reduce the unemployment rate caused by the lack of digital skills.

Chapter 1: Setting the Scene: Digital Literacy in Spain

Digital Literacy in Spain

TABLE 1: DIGITAL LITERACY IN SPAIN AND EU (28 COUNTRIES) IN 2018

Age Group	EU/Spain	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	European Union (28)	26%	26%	31%	1%
	Spain	28%	23%	32%	2%
16 to 24 years old	European Union (28)	15%	25%	57%	0%
	Spain	11%	24%	63%	1%
25 to 34 years old	European Union (28)	21%	29%	46%	0%
	Spain	23%	27%	46%	0%
35 to 44 years old	European Union (28)	27%	29%	36%	1%
	Spain	31%	26%	37%	2%
45 to 54 years old	European Union (28)	30%	29%	27%	1%
	Spain	33%	26%	28%	2%
55 to 64 years old	European Union (28)	31%	25%	16%	1%
	Spain	36%	20%	14%	4%
65 to 74 years old	European Union (28)	26%	18%	7%	1%
	Spain	24%	12%	5%	3%

Source: Eurostat, 2018

In the table above, we can see that the percentage of individuals with low digital skills increases with age for both Spain and the EU. As we can see in the table, the percentage of people aged 16 to 24 who have low level of digital skills is lower than the European average, although the percentage of individuals from the same age group who do not have digital skills is higher than the European percentage. Following with the same age group, the percentage of individuals that have a basic level is lower than the European level. However, the percentage of people who possess digital skills above the basics is higher in Spain than the European average. Likewise, we can see that the percentage of individuals aged 25 to 34 with low digital skills is higher in Spain than in Europe. Although, it is interesting to note that the percentage of people belonging to this age group who have basic digital skills is only lower than the European average by one percentage point. In addition, the percentages

of individuals from 25 to 34 years old who have above basic digital skills and no digital skills are equal to the European average. As for the group of 35 to 44 years old, the percentage that has low levels of digital skills is higher than the European average and the percentage that has basic levels of digital skills is lower than the EU. On the other hand, the percentage of individuals from 35 to 44 years old who have above basic digital skills are one point higher than the European average. However, the European average is one point below the Spanish percentage with respect to individuals from 35 to 44 years with no digital skills. The percentages of people between 45 and 54 and 54 to 64 who have low digital skills are higher than the European average although the percentages of these age groups that have basic digital skills in Spain are lower than the EU. The percentages of people between 45 and 55 who have digital skills are higher than the European average. However, the percentage of individuals of that age group who do not have digital skills is higher in Spain than in the EU. Finally, the percentages of people with basic, low, basic skills, above basic or non-digital skills of 54 to 74 years are lower in Spain than in the EU.

TABLE 2: DIGITAL LITERACY IN SPAIN BY AGE GROUP FOR 2015, 2016 AND 2017

SPAIN					
Age Groups	Year	Individuals who have low overall digital skills	Individuals who have basic overall digital skills	Individuals who have above basic overall digital skills	Individuals who have no overall digital skills
All Individuals	2015	23%	24%	30%	2%
	2016	25%	23%	31%	2%
	2017	28%	23%	32%	2%
Individuals, 16 to 24 years old	2015	10%	26%	62%	1%
	2016	10%	26%	62%	0%
	2017	11%	24%	63%	1%
Individuals, 25 to 34 years old	2015	21%	25%	47%	1%
	2016	23%	24%	47%	2%
	2017	23%	27%	46%	0%
Individuals, 35 to 44 years old	2015	26%	29%	35%	1%
	2016	29%	27%	36%	1%
	2017	31%	26%	37%	2%
Individuals, 45 to 54 years old	2015	29%	27%	23%	4%
	2016	32%	26%	25%	2%
	2017	33%	26%	28%	2%
Individuals, 55 to 64 years old	2015	27%	21%	11%	2%
	2016	30%	19%	13%	3%
	2017	32%	20%	14%	4%
Individuals, 65 to 74 years old	2015	16%	10%	4%	2%
	2016	19%	9%	4%	2%
	2017	24%	12%	5%	3%

Source: Eurostat, 2018

Table 2 shows the changes in digital literacy in Spain in three time periods. We can see there are not significant changes among young age groups (16-24 and 25 to 34) but there are important changes for older age groups (35-64 and 65-74 year olds). With regard to younger age groups (16 to 24 and 25 to 34), the percentages of individuals with low digital skills have increased from 2015 to 2017. However, the percentages of individuals from 16 to 24 with basic digital skills although in 2015 and 2016 remain stable, decrease in 2017. In addition, the percentages of individuals from 25 to 34 with basic digital skills have increased in 2017. On the other hand, individuals from 16 to 24 with high digital skills have increased percentage from 2015 to 2017, but those from 25 to 34 have decreased. A detail to highlight is that the percentage of individuals from 25 to 34 years without digital skills has decreased to reach 0%. Another important fact that emerges from the table is that the percentages of individuals aged 35 to 74 who have low digital skills have increased from 2015 to 2017. Regarding the percentages of individuals with basic digital skills, the percentages of individuals from 35 to 64 have decreased from 2015 to 2017. However, the percentage of individuals from 65 to 74 with basic digital skills has increased in 2017. In addition, we can see that the percentages of individuals with high digital skills, the percentages of individuals from 35 to 74 have increased in 2017. In contrast, the percentage of individuals from 35 to 74 without digital skills has also increased in 2017 in relation to 2015.

TABLE 3: DIGITAL LITERACY AND UNEMPLOYMENT (2017)

Groups	European Union (28)		Spain	
	All Individuals	Unemployed	All Individuals	Unemployed
Individuals who have low overall digital skills	26%	34%	28%	39%
Individuals who have basic overall digital skills	26%	24%	23%	22%
Individuals who have above basic overall digital skills	26%	24%	23%	22%

Source: Eurostat, 2017

In Table 3, it can be seen that the percentage of unemployed adult individuals with low digital skills is greater than the percentage of employed individuals, both in the European Union and in Spain. Which leads us to suppose that adults with low digital skills have more difficulties in getting a job. On the contrary, the levels of unemployment are lower in adults with basic and advanced digital skills. This is noted both in the Spanish and in the European average. In this sense, the table shows the high level of penetration of ICT in the employment sector, since the percentages of unemployed are lower among individuals who have advanced and basic digital skills in the European Union and in Spain.

The most relevant statistical findings that we can observe in the three tables are the following: first, the percentage of individuals with low digital skills of 16 to 24 years is lower in Spain than the European average. In addition, the percentage of this same group that has high digital skills is higher than the EU average. However, the percentage of all individuals with basic skills is lower in Spain than in the EU. It should be noticed that the highest percentages of individuals with low digital skills both in Spain and in the European Union are from 45 to 64 years. Second, we can see that in Spain the percentage of individuals with limited or low digital skills has been increasing from 2015 to 2017. In addition, the percentage of all individuals without digital skills has been maintained in the three selected

periods. Third, it can be noticed that the level of unemployment of adults is higher when it comes to adults with low digital skills. This is the same for the European Union as for Spain, which has higher percentages of unemployment than the European average.

Literature Review

The European Commission has been introducing different initiatives to stimulate the opportunities that emerged from the global information economy. Based on the Europe 2020 Strategy, a qualitative change can be observed in the relevance given to the ICT sector and to digital transformation. The flagship initiative of the Digital Agenda of the Europe 2020 Growth Strategy, which inspires the public-private partnership Grand Coalition for Digital Employment, specific campaigns such as e-skills for digital jobs, or the constitution, in February 2014, of the Policy Forum Strategic in the field of digital entrepreneurship, are expressions of the interest of the Council and the Commission in this area (Alvarez-Flores, Nuñez-Gómez and Rodríguez Crespo, 2017). The Digital Agenda reflects the lack of digital literacy and digital skills and is committed into taking advantage of the full potential of ICT, accounting for the close relationship between ICT and employment in terms of the professional, users and businesspersons. In addition, international organizations and educational authorities and institutions have to promote information technology literacy in formal and non-formal education as a basic competence. Pirzada and Khan (cited by Alvarez-Flores, Nuñez-Gómez and Rodríguez Crespo, 2017) argue that currently the digital skills combined with higher education are linked to high-level work and the improvement of employability and therefore, efforts should be directed to the training focused on digital skills. In this sense, the New Skills Agenda for Europe, approved in June 2016, aims to obtain the best of human capital with the aim of promoting employability, competitiveness and growth in Europe. The agenda considers that it is essential to equip people with the right skills for current and future jobs and considers, among the measures to be adopted, the reinforcement of digital skills as well as linguistic and mathematical competences.

Particularly in Spain, the growth of the ICT sector and the opportunities it provides have gained the attention of the government, that is implementing actions and strategies that aim at enhancing the effects of the use of technologies both for the economy and the population. As it has been drafted by the Digital Agenda for Spain and the branch of the Grand Coalition in Spain, emerged in 2013, which seeks to improve digital skills, establishing a series of priorities in terms of training, certification, learning and innovative teaching, mobility and promotion to attract young people to the productive sector (Alvarez-Flores, Nuñez-Gómez and Rodríguez Crespo, 2017).

The public sector is advanced in terms of quality and variety of online services offered, but with potential for improvement in the promotion of the use of ICT. Spanish institutions are at the forefront in Europe in quality and offer of online services, according to the Online Services Index (OSI). Spain is in second place, with a score of 0.94 out of 1, only behind France and at the same level as the United States. In the e-Government readiness index (EGDI), which measures the ability of a government to offer its services via ICT, Spain is at the same level as digital leaders such as Norway with a score of 0.81. However, Spain is only ahead of Italy, in terms of the effectiveness of public administration in promoting the use of ICT in some areas. With a score of 3.8 out of 7, it is behind countries like Sweden or Norway that surpass 5 points. Even though the government has been successful in digitalization of

its services and processes, there is room for improvement in the promotion and expansion of the digital world between consumers and companies. Institutions have been successful in promoting investment in infrastructure, however there is potential to focus efforts in areas that are not as advanced, such as in the development of digital talent (McKinsey and COTEC, 2017).

At the same time, companies are making progress in terms of digitization, but they are still far from the more advanced European countries. Online transactions between companies are still much lower in Spain, with a score of 5.1 out of 7 compared to countries as the United Kingdom and Norway with values close to 6 points. In addition, Spanish companies have a low level of technology adoption (4.9 points) compared to European digital leaders and the United States (6.1 points), which indicates that there is room for significant improvement. Spending on online advertising per capita is 4 times higher in countries such as Norway or the United Kingdom than in Spain, where the percentage of online advertising is of 30% (McKinsey and COTEC, 2017).

In this context of accelerated innovation, there are companies that are leading the transformation. In recent years there has been a significant development of successful startups, some of which have expanded internationally such as Privalia, Wallapop and Cabify, and others such as Ticketbis or Socialpoint have been acquired by large multinational enterprises. In a situation in which the focus are on-line activities, connectivity, peer-to-peer business models and apps, some of these companies have achieved significant growth and have become a reference worldwide, as in the case of Kantox to the management of foreign exchange and international payments and Carto dedicated to geospatial analysis. In this sense, many significant results have already been reached in the digitization process. More and more tasks and activities are digitized helping the country to be located above the European average in part of the digital metrics; 67% of Spanish people use Internet frequently, 44% of Spanish companies use social networks and 98% of millennials have used the Internet in the last three months. Spain has also managed to lead the European rankings of investment in communications infrastructure - ranking fourth in the European Union. According to the Index of Economy and Digital Society - DESI, Spain is in position 14, above the European average, with a positive evolution in recent years. However, in 3 of the 5 dimensions that comprise the DESI, Spain is still below the European average (below the average: Connectivity, Human Capital, Internet use, above the average: Integration of the economy digital and digital public services). Spain stands out especially in the Digital Public Services metric, where it ranks 6th, well above the European average (McKinsey and COTEC, 2017).

Spain ranks 14th out of the 28 EU Member States in the Digital Economy and Society Index (DESI) of 2017. In general, Spain has obtained better results in all measured dimensions, except for the human capital, an area in which it obtained a worse result than that registered last year despite having experienced a steady growth in the number of graduates in STEM. Particularly noteworthy are the results obtained by Spain in the field of digital public services, although the dimension in which it has progressed the most is the integration of digital technology. Generally speaking, despite the fact that, the public and private sectors in Spain are rapidly progressing towards the integration of digital technologies, it seems that some of the indicators reflect a low level of demand from users, with a lower level of growth in digital skills that hinders development in the dimension corresponding to human capital (DESI, 2017).

In terms of human capital, Spain ranks 16th in the EU countries and is below the Union average. Although there are more and more Spanish families that have access to the internet connection, the level of basic and advanced digital skills are still lower than the EU average. Only 53% of citizens aged between 16 and 74 have basic digital skills (56% in the EU), and ICT specialists represent a lower percentage of the active population (2.4%, compared to 3%, 5% in the EU). Spain records satisfactory results in terms of the number of graduates in STEM (science, technology, engineering and mathematics), with a proportion of 21 graduates per 1,000 individuals (EDPR España, 2017). According to Salcedo, Alfama Guillén and Cruells López (2013) there is an inverse relationship between age and Internet use, which means that the older the number of users is lower. The relationship is more evident. If you compare the age range of 55-64 with 65-74, the number of users in this last group is almost half; In the case of those over 75, the percentage of users is very low, only 4%, compared to 22% of the previous minimum age and 64%, which is the percentage of Internet users over 18 years of age. Certain studies (Montero and Nájera, 2012) categorize three generational groups of older population, already existing, beyond use, identify a negative correlation between the age ranges of the population and the availability at home of digital ICTs, tablets and computers with Internet connection). In addition, the use of social networks by older people, although it is well below the average, reaches 14% of population over 56 years. In the next age group, those over 64 years old, presents a similar percentage and among Internet users over 75 it reaches 25%. It is also highlighted that the use of social networks has increased in recent years (Montero Navarro and Nájera Sánchez, 2012). These data are similar to the E-Spain 2012 report of the Orange Foundation, which points out that interest in social networks is not very widespread among those over 65 (15.3%) but it is increasing. Regarding the type of information consumed, the largest user of the Internet privileges the search for current information on travel, maps and procedures of the administration (del Arco, Carabias, Javier et al., 2011). The negative direction between higher age-less use can be established mainly in uses of the network associated with changes in the life cycle between the age ranges of the elderly population, such as seeking employment, management or complaints. Perhaps the exception that there are uses of the network not associated with the life cycle is the electronic mail or the so-called IP telephony, that is, the uses most associated with communication.

Policy and Major Stakeholder Initiatives

In Spain, several projects have being carried out to improve the technology literacy of the population, aware of the crucial role of education through technology, as well as the acquisition of the basic skills to become active and participative citizens, generating possibilities for social inclusion and employability (Ortega Sánchez, 2009).

At 2005, the Spanish state adopted new legislation to address the development of the information society and the convergence of Europe with autonomous communities and autonomous cities. In accordance with the provisions of this law, the government of Spain created a National Plan, called "Plan Avanza", as part of the central themes of the Spanish National Reform Program designed to achieve the objectives of the Lisbon Strategy. The general objective of the plan was to achieve an adequate use of ICTs, in order to contribute successfully to economic growth, increasing competitiveness and productivity, promoting social equality and improving the well-being and quality of life of citizens. To achieve the

proposed objectives, the plan developed a structure formed by five action axes: Training, Content and Digital Services, Development of the ICT sector, Infrastructure and Trust and Security. Specifically, the training was in charge of implementing actions related to electronic skills and digital literacy. It was divided into two parts: the first - citizen training, with the aim of citizen inclusion; and the second, the training of SMEs, with the aim of promoting the use of ICT in SMEs (EDPR España, 2017).

On July 16th 2010, the Council of Ministers approved the 2011-2015 Strategy for Plan Avanza 2. This second stage gives continuity to Plan Avanza's course of action. It includes projects already in progress and updates initial objectives to adapt them to the new challenges of the network society. Now that most of the objectives set have been achieved and being aware of the need to move towards a Knowledge Society, a new phase starts consisting of 5 action areas: Infrastructures, Trust and Security, Technological Training, Digital Content and Services, and ICT Sector Development. One of the main objectives of Plan Avanza 2 is to contribute to an economic model change in the country through ICT, as spreading ICT use allows for an increase in competitiveness and productivity, and favours equal opportunities by boosting the economy and consolidating a sustainable model of economic growth.

Citizen training is an important part of the Plan Avanza strategy which aims at informing citizens about the advantages of internet usage and ICT. There are eight programmes scheduled which intend to include people into the information society. Each of these programmes aims at a different target group and all of them include commissioning studies, dissemination activities, training, social networking and provision of computer equipment where necessary. SME training makes up another important part of the Plan Avanza strategy, with the objective to train SMEs in ICT and help them achieve implementation of e-business solutions, including electronic invoicing, to improve competitiveness and productivity, with the final goal of moving SMEs towards the knowledge economy. A total of 1,874 million euro is dedicated to these actions. Since September 2009, the Ministry of Education together with the Autonomous Communities through the Steering Committee of ICT is coordinating the Escuela 2.0 project, a nationwide ICT plan for schools. This project aimed at launching the twenty-first century digital classrooms and equipping the classrooms with technology infrastructure and connectivity in order to generalise the access to hardware and digital content in schools and pedagogically integrate ICT into school life. Over two years (2009-2011) nearly 650,000 students in the third cycle of primary education and the first cycle of ESO were provided with a laptop as a learning tool; 30,000 digital classrooms have been put into operation; 160,000 teachers have participated in trainings related to ICT and has provided with a significant impetus to the production and use of digital educational content. The Ministry has also expanded the range of courses in the ICT Network Instruments and its methodological aspects, experimentation and innovation.

Telecommunications and Information Society sector developments in Spain are monitored and analysed by the National Observatory for Telecommunications and the Information Society (ONTSI), a body part of to the public corporate entity Red.es. ONTSI, currently the leading public observatory of the information society in Spain, gathers and synthesizes various indicators, prepares studies as well as provides informative and updated services related to the Information Society. In addition, ONTSI also enables dialogue between the ICT sector and the different public administration bodies for the definition of policies and their subsequent evaluation. Three main focus areas of ONTSI studies include: Digital Economy, Digital society and Digital Public services.

Besides, ONTSI is also in charge of monitoring and evaluating the Information Society Promotion Programmes implemented by red.es (e.g. Plan Avanza).

Following the government's strategy on development of the digital economy and society in Spain during the period 2013-2015, the Council of Ministers adopted on February 2013 the Digital Agenda for Spain. This strategy is set as the umbrella programme of all government actions jointly lead by the Telecommunications and Information Society and the Ministry of Industry, Energy and Tourism and the Ministry of Finance and Public Administration. The agenda sets guidelines on the targets to be with regard to ICT and e-Government in order to achieve the Digital Agenda Europe 2015-2020 objectives. The main objectives of the Digital Agenda for Spain are: Encourage the deployment of networks and services to ensure digital connectivity; develop the digital economy for growth, competitiveness and internationalization of Spanish companies; improve e-government and digital public services; building confidence in the digital; Boost RTD and innovation in the industries of the future; promote inclusion and digital literacy and ICT training new professionals. Meanwhile, in order to achieve the above mentioned objectives, seven specific plans have been published during the first half of 2013: ultrafast telecommunications and networks; ICT in SMEs and e-commerce; promotion of the digital economy and digital content; international Plan for technology companies; trust in the digital; development and innovation in the ICT sector; digital inclusion and employability. While, two more plans on eGovernment General State Administration and Digital Utility will be made publicly available during the second half of 2013.

Given that the Spanish Educational System has transferred its powers in educational competences to the Autonomous Communities, the policies and initiatives can be implemented in heterogeneous ways depending on their application scope and the strategies of the different regional.

The following is a list of multi-stakeholder partnerships of major relevance to the e-skills issue:

- **Literacy Plan and digital training for Barcelona 2010-2015**: The main objective of the 5-year programme, overseen by the Barcelona City Council, is to assess the state of the current situation in digital training, evaluate the actions already performed, and define a joint strategy on digital literacy. A training programme for a period of 5 years is to be executed. Special attention is drawn to means for closing existing
- gaps in IT related skills. Targets include: 12,500 Professionals to be trained in technology to improve their technological skills; 12,000 young people to be given the chance of improving their professional orientation, adding technological competition to their orientation process; 22,000 unemployed people to receive technology training; 1,200 individuals aged 55 years and older to be given the chance to participate in ICT programmes; 30,000 additional citizens to receive training in basic technology. The total budget of the programme is € 6.4 million.
- **Red CEMIT**: Under this initiative (2011-13), 98 ICT centres across Galicia are set up for getting the general population acquainted with new ICTs. A main component of the initiative is training (from ICT practitioners to citizens and employees in the public sector) provided both online and in presence. Free use of "open classrooms" is offered to all stakeholders. Hands-on support is offered by ICT experts. Dissemination and awareness raising activities are conducted as well. The training offer consists of basic training in ICT, ICT for enterprises and entrepreneurs, ICT for the unemployed, e-administration, social networks, operations through the Internet, leisure on the Internet, ICT equipment, image and audio, open software solutions and specific courses upon demand. The total budget of the programme, which represents a multi-stakeholder partnership between enterprises, public

administration, civic society associations of women and the elderly etc., is about €
660 million for the whole period (2 years). Achievements so far include 10,000
persons trained in 2011, 38,000 hours of free training offered in 2012, and 30,000
users at the time of writing.

- **"Soy mayor y me gusta navegar"**: Cibervoluntarios, an NGO with more than 1,500
voluntaries, has the mission to bring ICT closer to more than 10,000 persons per
year who would otherwise risk staying excluded from the information society. The
objective is to teach elderly citizens about how ICTs can be useful in their daily life.
This implies going one step beyond providing basic e-skills and showing them that
ICTs are fun and can be used on a daily basis for meeting their needs and interests:
leisure, doctor, mobile phones, music, videos, potentiality of network, etc. The
initiative has started in 2011 and is ongoing.

- **CENATIC- Training with and within free software**: CENATIC is the National
Reference Center for free software based ICTs. Its main goal is to assess and
disseminate useful applications of free software in the public sector. Besides this, it
works as disseminator of complementary services to users of free software. It
makes the link between the free software code developed by the Spanish public
sector and provides it to the private sector and enterprises, in order to boost the
industry of ICTs in Spain. Several services are provided, one of them being the
training in the use of ICTs applications and e-skills. The objective is to show the
advantages of free software and disseminate the benefits of working in an ICT open
community: sharing knowledge and resources, fostering public-private
partnerships, raising awareness around ITCs, making a more competitive
community and business sector thanks to the use of ICTs. Stakeholders involved
include: the Spanish Ministry for Industry, Energy and Tourism; the Regional
Governments of Extremadura, Andalucía, Asturias, Aragón, Catalunya, Balearic
Islands, Galicia and the Basque Country; and Telefónica.

- **Plan Avanza 2 National Plan (Action area "ICT Training: enterprises")**: One of the
main objectives of Plan Avanza 2, the major Spanish information society strategy
for the period 2011-15, is to contribute to a paradigm shift in the economics of the
country through ICT, based on the observation that spreading the use of ICT can be
a means to improve competitiveness and productivity, favour equal opportunities,
boost the economy and establish a sustainable model of economic growth. The first
stage of Plan Avanza, initiated in 2005, aimed at catching up with EU mainstream,
especially regarding IT network coverage and connectivity. Plan Avanza 2 seeks
placing Spain on a leading position in terms of development and use of advanced
ICT products and services. Plan Avanza 2 focuses on 10 objectives: 1) Promoting
innovative ICT processes in the Public Administration, 2) Spreading ICT in healthcare
and for the welfare, 3) Modernizing the education and training model through the
use of ICT, 4) Spreading telecommunication networks and increasing their capacity,
5) Spreading trustworthy ICT among citizens and enterprises, 6) Increasing the
advanced use of ICT solutions among citizens, 7) Spreading the use of ICT business
solutions in enterprises, 8) Developing technological skills in the ICT sector, 9)
Strengthening the digital content sector and intellectual property rights in the
current technological context and within the Spanish and European legal
framework, 10) Developing green ICT.

Synopsis

In summary, the Spanish government has joined forces to comply with the
recommendations of the European Union regarding the development of the information

society and the challenges associated with the advent of the ICT sector. For this reason, it has adapted its legislation to achieve the proposed objectives and the plans and strategies have been carried out both nationally and at the level of the autonomous governments with the ultimate goal of integrating the entire population in the information society. Following the strategy of the EU for the development of the digital society, the Digital Agenda for Spain was adopted, which established the lines of all government actions in Telecommunications and the Information Society. The agenda establishes the lines of action to achieve the objectives that must be achieved in relation to ICT and electronic administration according to the directives of the Digital Agenda of Europe 2015-2020. The main objectives of the Digital Agenda for Spain include: Encouraging the deployment of networks and services to ensure digital connectivity; develop the digital economy for the growth, competitiveness and internationalization of Spanish companies; improve electronic administration and digital public services; building confidence in the digital; Promote RTD and innovation in the industries of the future; promote inclusion and digital literacy and the training of new ICT professionals.

Chapter 2: The Perspectives of HR managers

Objectives of the study and research questions.

Project Objectives

Overall:

To promote the social and economic inclusion of low-skilled/ low-qualified adults 45+ excluded from the labour market through advanced media literacy competence and digital skills focusing on the use and utilization of social media for professional purposes.

Specifically:

• To develop the digital competence of (low-skilled or low-qualified) unemployed adults 45+ to build a robust professional identity online thus promoting their access to employment opportunities.

• To familiarise and equip middle-aged unemployed with practical guidance and skills on how to benefit from online media sources and tools in their effort to access employment.

• To introduce to employment / career counselors and / or relevant organisations and companies working with middle-aged unemployed (e.g. Employment Services, head-hunting companies) a new approach on how to interact with middle-aged unemployed through social media.

• To develop a mainstream skills building methodology for low-skilled or low-qualified middle-aged unemployed specifically for the use of social media and promote it to organizations active in providing training services to middle-aged unemployed

The main research questions we aimed to address are:

- o How important is Digital Competence in the workplace for people 45+ years old?
- o What skills and competences related to Digital Competence are expected out of prospective employees who are 45+ years old?
- o What are the most common social media platforms used in advertising, screening and selection process?
- o How important is an applicant's Facebook, LinkedIn, Twitter etc. during the hiring process?]

Methodology

To achieve the proposed objectives, we conducted a study under a mixed methodology that is, using a qualitative and quantitative methodology. The technique for data collection was interviews that allowed us to obtain mostly qualitative information, as well as some quantitative data. To carry out the interviews, we prepare a calendar of interviews. This is a set of prepared questions designed to be formulated exactly as written. The interview schedules have a standardized format, which means that the same questions are asked to each interviewee in the same order. Therefore, the technique consisted of a structured interview, also known as formal interviews. In this type of interview, the questions are formulated in an established and standardized order and the interviewer will not deviate from the interview schedule or inquire beyond the answers received (so that they are not

flexible). They are based on structured questions and closed. However, in one of the sections of the questionnaire, we have left a limited number of open questions, with the aim of expanding the qualitative data. The interviews were conducted during the months of January and February of the year 2018.

The strengths of the methodology and the chosen technique are that this type of interviews are easy to replicate since a fixed set of closed questions is used, which are easy to quantify, which means that it is easy to prove reliability. In addition, structured interviews are quite quick to carry out, which means that many interviews can take place in a short period of time. This means that a large sample can be obtained that is representative and has the capacity to generalize for a large population. However, this type of methodological decisions have limitations; In this sense, structured interviews are not flexible. This means that new impromptu questions can not be asked (that is, during the interview) since an interview schedule must be followed. Moreover, the answers to the structured interviews lack details since only closed questions are formulated that generate quantitative data. This means that an investigation will not know why a person behaves in a certain way. For these reasons, we dedicate a section of the interview to make a series of open questions, and thus complement the research with qualitative data.
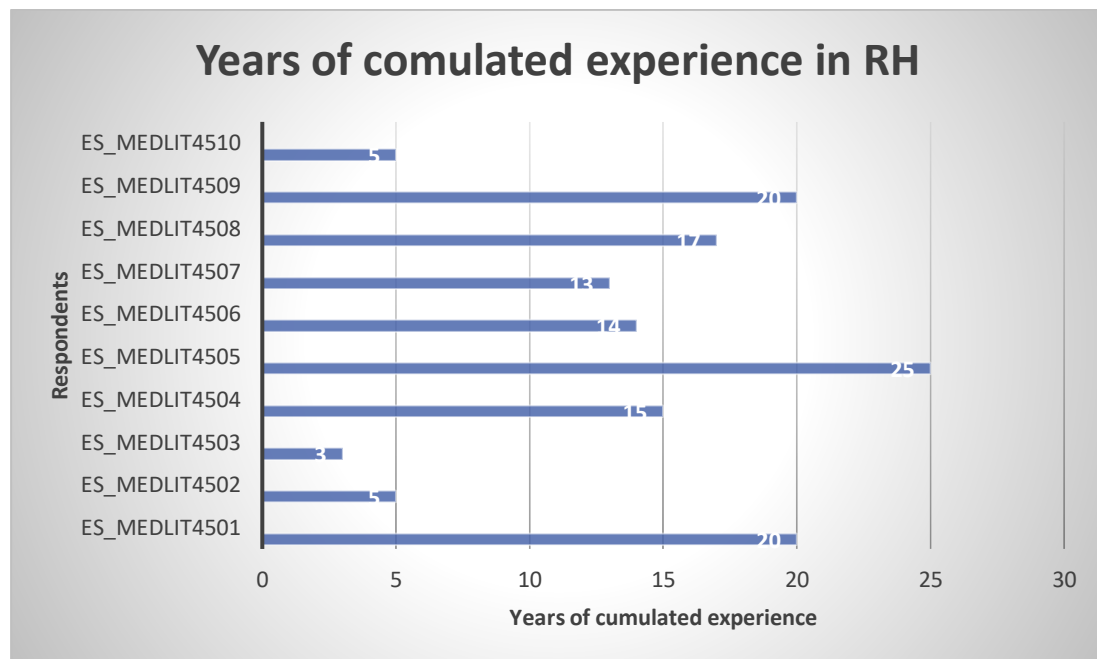
Results

Demographic Information

The participants of the sample have an average of 41 years and in percentage terms, 20% are men and 80% are women.
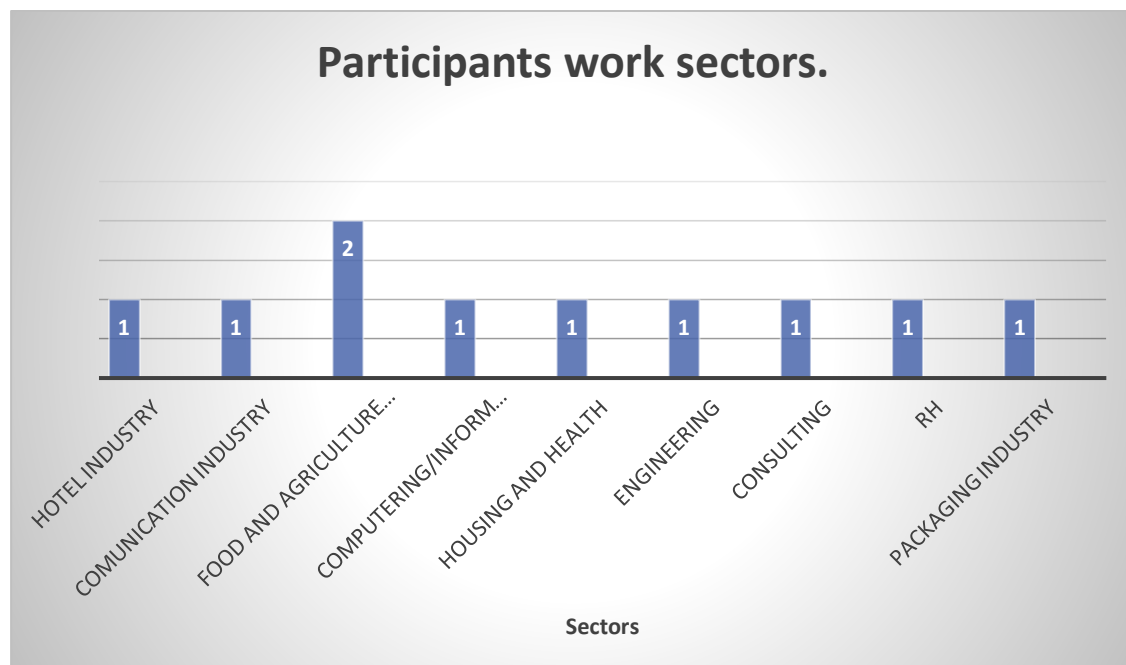
Graphic 1: Educational level of the respondents
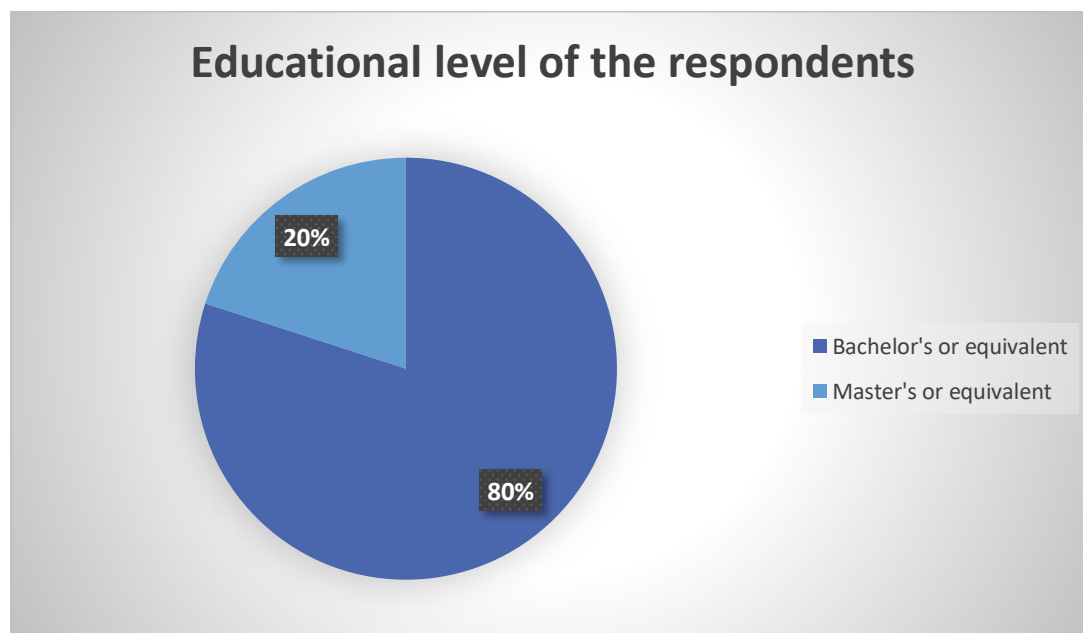
Graphic 2: Years of cumulated experience in RH of respondents.

Graphic 3: Participants work sectors.

Open-ended Questions

Digital literacy

About the importance of digital literacy, the majority of respondents answered that it is very important that employees have digital skills, especially for the specificity of the company. The rest of the interviewees, in the same proportion, answered that it is important but that it is not necessary, that there is also another type of work in the company that does not need this type of skills and that is not important since the jobs of The company does not need this type of skills. With respect to expectations, most respondents say that the answers regarding the knowledge of digital skills are the same for employees of 30 years as for those over 45 years. The rest of the interviewees argued that the expectations are greater for those under 30 years, since these belong to a generation that grew in this type of technology, a difference of those over 45 years who came in contact with these in other ways.

According to the answers analyzed, digital literacy is important for employees, since it affects older workers in terms of the tasks they have to fulfill within the company. However, the majority of respondents answered that they have higher expectations of digital knowledge for those under 30 years of age.

Duties of employees 45+ years of age and their link to digital competence

The interviewees answered that the tasks performed by employees over 45 years are commercial or management tasks, accounting or administrative tasks, machine operators, product development, packaging, computer and Internet tasks at a user level, address or tax and labor advice, technical assistance, management, waiters and reception tasks. Some of the tasks mentioned relate to digital capabilities since they require the use of computers. Some of them require familiarity with the internet and specific software of the company, making reservations and dealing with customers online.
Most of the interviewees argue that they have carried out training programs related to digital capabilities, in large part of daily use programs, such as Excel or word processor. The rest responded that they do not carry out training because the company does not need advanced levels of digital skills due to the type of activity they carry out.

Digital literacy and recruitment

For the most part, respondents answered that it is not compatible with digital skills, it is not a barrier to hiring employees. However, 30% of the interviewees argued that it is a barrier due to the type of activity that takes place in the company, since they require a trained personnel in digital skills for the tasks. According to the answers of all the interviewees, only 20% of them have rejected candidates for lack of digital skills, the rest do not remember having done it. Two interviewees did not answer the question.

Digital literacy gaps

HR managers have not reported on particular skills gaps related to digital competence, but have listed some competencies that they believe current and future employees should consider. Among them the use of shared document applications, the use of government platforms and specific thematic area of the company, ability to adapt to software changes and opening to constant learning.

Role of Social Media Platforms in the hiring process

While 40% of respondents argue that they do not use social networks for employee recruitment, 60% argue that they do. The most used are the websites of companies and LinkedIn, because it is considered as a social network of professionals. Secondly, Facebook and Twitter are also used, although in a lower percentage. Both Facebook and Twitter are used to a greater extent for advertising and for positioning on topics of interest to the company. Taking into account this information, the futures have to take into account to contact LinkedIn and the social networks of LinkedIn as well as the websites of the companies that they are interested in applying for the vacant positions, which are the most used for this procedure. Also, if the candidates are interested in being aware of the services and activities that companies offer, they should consider using both Facebook and Twitter.

Role of Social Media Platforms in advertising new openings

The social media platforms most used by the interviewees for advertising are Facebook and Twitter. Secondly, some interviewees argued that they also use YouTube and Instagram. On the other hand, a large part of the interviewees argued that they use WhatsApp for internal communication, in order to transmit information about meetings or events.

Two of the interviewees stated that they do not use social networks for advertising purposes. This should be taken into account by future candidates to be informed of the public positions of the companies and the offers of employment and services they offer.

Importance of Social Media Profile

According to the responses of the interviewees, applicant's Facebook, LinkedIn and Twitter profile are not important during the hiring process for human resources managers. Some of these interviewees stated that they would pay attention to the profile in LinkedIn because it is a professional social network but in general, all interviewees agreed that they pay more attention to personal interviews, to the aptitudes and to the competences that the candidates show personally; as well as in the previous experience.

Social Media and Internal Usage

Of the representatives of the companies, none reported using social networks to interview the candidates. Most use WhatsApp for internal communication of the company and a few use YouTube for the same purpose. Those who use WhatsApp, they do it for about 2 years, and argue that they use it for informational and organizational purposes. They expect employees and candidates to be able to use social networks and especially WhatsApp at a medium level, since they do not consider it a great challenge either.

Synopsis

In summary, the analysis of respondents' answers show that most companies do not consider a barrier to hiring that candidates do not have a high level of digital skills but that

they are interested in being open to learning and demonstrating skills of predisposition. The majority of interviewees do not use social networks to interview candidates, although some of them use them for advertising purposes. In addition, most social media users often use WhatsApp to communicate internally and expect employees to be able to use it. Regarding the selection process, none of the interviewees argued that they use social networks neither for the selection process nor for the interview process, which shows that they value more the presence and work experience of the candidates than their profiles in social networks.

Conclusions

In conclusion, we have been able to make a state of the art about digital literacy in Spain, paying special attention to adults over 45 years of age. In general terms, we could see that numerous projects are being carried out (in Europe and in particular in Spain) to technologically literate the population, aware of the importance of education through technology, as well as the acquisition of the basic skills to become active and participatory citizens, generating possibilities for social inclusion and employability.

The Spanish government has joined forces to comply with the recommendations of the European Union regarding the development of the information society and the challenges associated with the advent of the ICT sector. For this reason, it has adapted its legislation to achieve the proposed objectives and the plans and strategies have been carried out both nationally and at the level of the autonomous governments with the ultimate goal of integrating the entire population in the information society. Following the strategy of the EU for the development of the digital society, the Digital Agenda for Spain was adopted, which established the lines of all government actions in Telecommunications and the Information Society. The agenda establishes the lines of action to achieve the objectives that must be achieved in relation to ICT and electronic administration according to the directives of the Digital Agenda of Europe 2015-2020. The main objectives of the Digital Agenda for Spain include: Encouraging the deployment of networks and services to ensure digital connectivity; develop the digital economy for the growth, competitiveness and internationalization of Spanish companies; improve electronic administration and digital public services; building confidence in the digital; Promote RTD and innovation in the industries of the future; promote inclusion and digital literacy and the training of new ICT professionals.

Also we could be able to see that Spain ranks 14th out of the 28 EU Member States in the Digital Economy and Society Index (DESI) of 2017. Particularly noteworthy are the results obtained by Spain in the field of digital public services, although the dimension in which it has progressed the most is the integration of digital technology. Despite the fact that, in general, the public and private sectors in Spain are progressing rapidly towards the integration of digital technologies, it seems that some of the indicators reflect a low level of demand from users, with a lower level of growth in digital skills that hinders development in the dimension corresponding to human capital. In terms of human capital, Spain ranks 16th in the EU countries and is below the Union average. Although there are more and more Spanish families that have access to the internet, the levels of basic and advanced digital skills are still lower than the EU average. Only 53% of citizens aged between 16 and 74 have basic digital skills (56% in the EU), and ICT specialists represent a lower percentage of the

active population (2.4%, compared to 3%), 5% in the EU. In this sense, we could see that the percentages of people between 45 and 54 and 54 to 64 who have low digital skills are higher than the European average although the percentages of these age groups that have basic digital skills in Spain are lower than the EU. The percentages of people between 45 and 55 who have digital skills are higher than the European average. However, the percentage of individuals of that age group who do not have digital skills is higher in Spain than in the EU. Finally, the percentages of people with basic, low, basic skills, above basic or non-digital skills of 54 to 74 years are lower in Spain than in the EU.

Regarding the interviews, we have observed that, about the importance of digital literacy, the majority of respondents answered that it is very important that employees have digital skills, especially for the specificity of the company. The rest of the interviewees, in the same proportion, answered that it is important but that it is not necessary, that there is also another type of work in the company that does not need this type of skills and that is not important since the jobs of the company does not need this type of skills. With respect to expectations, most respondents say that the answers regarding the knowledge of digital skills are the same for employees of 30 years as for those over 45 years. The rest of the interviewees argued that the expectations are greater for those under 30 years, since these belong to a generation that grew in this type of technology, a difference of those over 45 years who came in contact with these in other ways. The hiring processes are still fairly traditional in that still most of the interviewees use personal interview methods and value the skills of conflict resolution and adaptation to changes. The vast majority of respondents do not use social networks for the selection process and interviews with candidates and only some of them said they use social networks to advertise their companies. Another fact that is not minor, is that the interviewees do not consider that the lack of digital skills is an inconvenience for hiring although some of them realize that the company's own activity requires basic levels of management of these technologies.

Based on the main results and conclusions, the following policy recommendations could be stressed:

- Policy makers should be aware that low to medium incomes are most at risk when it comes to job losses caused by digitalisation. Therefore, shifts in demand for labour stimulated by digitalisation should be monitored closely and measures to support and guide these workers during transitions should be offered. This will require further improvement of job guidance and training programmes in order to respond to the new needs of the labour market.
- To avoid the digital divide and increased inequality, reforms in initial vocational education and lifelong learning should be closely monitored and implemented.
- The new forms of work, like teleworking, freelance work and crowdsourcing confront companies and governments with new questions about social protection, and health and safety issues. The legal framework of these different types of work should be examined to determine whether it needs to be updated in specific areas in order to maintain workers' protection and to adequately cover new forms of work as well.

- Policymakers should also bring their social protection mechanisms into line with the new flexible employment relationships and ensure social protection to all types of workers.
- Spain should tailor adult digital skills learning policies so that adults can engage in meaningful learning opportunities throughout their life course, irrespective of their employment status or life circumstances.
- The State should work towards stable support structures for adult learning and the continuous evolution of a comprehensive adult digital skills learning system, able to provide continuity of provision and to respond adequately to emerging needs.
- The State should develop systems and tools to anticipate adults' skills needs, both for employment and other policy objectives (e.g. health).
- The State should monitor the effectiveness of adult learning policies at all levels and choose appropriate outcome indicators to document them

Developing and implementing effective policies that promote adult learning can improve lives, societies and economies. To improve adult skills levels, and in particular to raise adults' basic skills (literacy, numeracy and digital skills), high quality programmes are essential. These should include better outreach to excluded adults, and more effective use of ICT. Strategies to implement ICT in adult learning should ensure a good balance between four elements: a clear vision for promoting adult digital skills and harnessing digital potential; ensuring the availability of high quality learning resources; comprehensive programmes to support adult educators in updating their skills and using ICT effectively; and innovative approaches to ensure adequate investment in infrastructure and hardware. The coherence of the many different strands of policy and provision for adult learning needs to be improved and policies need to be informed by evidence and proper monitoring.

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