

# **BOOMER Skills and Competencies Audit**

Work Package No. 3

Final Report



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## EXECUTIVE SUMMARY

This report examines the digital literacy of older adults in the European Union (EU), with a focus on identifying barriers to digital literacy and promoting digital literacy among older adults. The EU is experiencing a demographic shift towards an older population structure due to low birth rates and higher life expectancy, and while the elderly population saw a significant increase in internet usage due to the COVID-19 pandemic, they still have a decreasing rate of internet usage compared to younger age groups. However, the pandemic has not been ideal for digital adoption among the elderly, resulting in increased feelings of digital isolation for those who lack basic digital competencies. Despite these difficulties, ongoing initiatives aimed at improving digital literacy skills among the elderly population in the EU are crucial to addressing the digital divide in this group.

The EU's structured dialogue with Member States, national coordinators, and recent initiatives aim to bring digital technologies to education and help people, including the elderly, improve their digital skills. Efforts are being made to promote digital literacy among the elderly population, including providing access to technology, training opportunities, and support to build digital confidence and trust. The BOOMER project is an example of an initiative that aims to improve digital literacy skills among older adults, and this report establishes the framework for future research and project outcomes.

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The report not only offers an overview of the current state of digital literacy among the elderly population in the EU and highlights the key findings of the study but also encompasses country reports on Italy, Spain, Germany, and Croatia. These country reports provide a comprehensive understanding of the state of digital literacy among seniors in each country and can be valuable resources for policymakers, educators, and other stakeholders who seek to develop targeted initiatives to promote digital literacy among older adults in their respective nations.

Germany has a comprehensive policy framework in place to promote digital literacy among older adults, while Italy has a decentralized approach to digital inclusion, emphasizing the integration of digital skills development into lifelong learning. Spain has a relatively strong policy framework for promoting digital literacy among older adults, with initiatives targeting this population and a focus on non-formal education and community-based approaches. However, Croatia's policy framework is relatively weak, highlighting the need for comprehensive surveys and research to assess the level of digital skills and competencies among older adults and the importance of expanded international collaborations.



In addition to the country reports, the in-depth interviews conducted with adult education providers in Spain, Italy, and Germany offer valuable insights into the particular obstacles and prospects involved in imparting digital skills training to older learners. In Germany, there is a growing interest among older adults to learn digital skills, and various organizations and initiatives have been developed to support them. In Italy, the government has launched initiatives to enhance digital skills and eliminate disparities in access to technology and services, while in Spain, lack of prior knowledge and resources, occasional training courses, and fear of using technology alone contribute to disillusionment and frustration among older individuals.

The Croatian survey of pensioners indicates that seniors are frequent users of the internet and feel comfortable using internet content independently, which is a positive indication of their willingness to adapt to the ever-changing digital landscape. Moreover, with the majority of respondents reporting supportive close and distant relatives and friends, there is a strong sense of community and intergenerational support in embracing technology. These findings suggest that many seniors are not only open to using digital media but are actively incorporating it into their daily lives.

The report offers a thorough evaluation of digital literacy among seniors in the EU, incorporating country reports and in-depth interviews on digital literacy-related challenges and initiatives in each country. To make sure digital environments are age-friendly and secure and to empower elderly individuals with digital technologies, it is essential to promote digital literacy among them. The country reports and interviews emphasize the need to engage multiple stakeholders, address specific barriers to digital inclusion, and tailor educational content to suit older adults' needs. On the EU level, it is critical to continue providing resources and training opportunities for digital skill development, considering senior citizens' needs with a human-centered approach. The insights presented can guide policymakers, educators, and other stakeholders in creating targeted initiatives to promote digital literacy among seniors in their respective countries, bridging the digital divide, and allowing everyone to participate in today's digital world.

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## 1. INTRODUCTION

In today's digital age, digital skills are becoming increasingly important for people of all ages, including the elderly. With the rapid advancement of technology, the ability to use digital tools and devices has become an essential part of daily life. Given the importance of digital skills education for seniors, it is essential that we invest in programs and resources that support their learning and engagement. This includes providing access to technology, offering tailored and engaging curricula, and fostering partnerships between educators, community organizations, and businesses.

The BOOMER project aims to contribute to these efforts by providing a comprehensive overview of the current state of digital literacy among older adults in the EU, analyzing the challenges and barriers they face, and exploring the initiatives and programs aimed at improving their digital skills. The project will also examine the impact of the pandemic on digital adoption among the elderly population and the role that the BOOMER project can play in supporting digital inclusion across the EU.

For the elderly, learning digital skills can have numerous benefits. First and foremost, digital skills help the elderly stay connected with friends and family members who may live far away. With digital devices such as smartphones, tablets, and laptops, seniors can communicate with loved ones through video calls, messaging apps, and social media platforms. This can help combat feelings of loneliness and isolation, which are common among the elderly. In addition to staying connected with others, digital skills also enable the access to important information and resources. For example, they can use the internet to research health information, access government services, and shop online. This proves particularly helpful for seniors with mobility issues or those who live in rural areas. Digital skills help the elderly stay mentally sharp and engaged. Learning new skills and technologies can provide a sense of purpose and accomplishment, which can help boost self-esteem and overall well-being.

Despite the many benefits of digital skills for the elderly, many seniors face barriers to accessing and using digital devices. These may include physical limitations, lack of access to technology or internet service, and lack of familiarity with digital tools. To address these barriers, there are a variety of programs and resources available to help seniors learn digital skills. These may include classes at local community centers or senior centers, online tutorials and resources, and one-on-one coaching or support. By investing in digital skills education for the elderly, we can help ensure that seniors have the tools they need to stay connected, informed, and engaged in today's digital world.

To better understand the state of digital skills education for the elderly around the world, this report provides in-depth country reports on digital skills education programs for seniors. These country reports offer a comprehensive overview of the current state of digital skills education for seniors in various countries, including the types of programs available, the barriers seniors face in accessing digital skills education, and the impact of these programs on seniors' lives. Through country reports, policymakers, educators, and advocates can gain valuable insights into the successes and challenges of digital skills education programs for the elderly in different parts of the world. By learning from the experiences of others, we can better identify best practices and strategies for promoting digital skills education for seniors in our own communities.

In addition to the country reports, this report also includes in-depth interviews with education providers who work with elderly learners to gain insights into their experiences and best practices. Through these interviews, we can better understand the challenges and opportunities in providing digital skills education for seniors and identify effective strategies for improving access and engagement.

Furthermore, this report includes a survey of the elderly to gain their perspectives on digital skills education programs and to better understand their needs and preferences. This survey provides a valuable source of information for educators and policymakers to better tailor digital skills education programs to meet the needs and interests of seniors. The combination of country reports, in-depth interviews, and a survey provides a comprehensive and nuanced understanding of digital skills education for the elderly. By exploring this topic from multiple perspectives, this report offers valuable insights and recommendations for improving access to digital skills education for seniors around the world.

Overall, the importance of digital skills education for the elderly cannot be overstated. As technology continues to play an increasingly central role in our lives, it is essential that seniors have the tools they need to stay connected, informed, and engaged. By investing in digital skills education programs for seniors, we can help ensure that older adults can continue to live fulfilling and connected lives in today's digital age.

The findings of this report, which will be presented and explored in the following sections and summarized in the conclusion, will further the BOOMER project's mission of promoting digital literacy among the elderly and bridging the digital divide in the EU. These insights will guide the continued implementation of the project.

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## 2. EU SNAPSHOT

The BOOMER project aims to address the digital isolation experienced by the elderly population in the EU and its member countries. With an ageing population and an increasing reliance on technology, it is essential to ensure that older adults have the necessary digital skills to participate in the digital economy and maintain their independence. Despite the increasing number of older adults using the internet, a digital divide still exists within this demographic across the EU.

To promote digital literacy among the elderly, various initiatives have been launched at the EU level, including policy initiatives, training programs, and solutions to bridge the digital divide and promote digital inclusion, such as the European Digital Decade strategic vision and the European Digital Skills and Jobs Platform. The COVID-19 pandemic has further emphasized the importance of these efforts, as it has accelerated the shift towards digital technologies and highlighted the need for older adults to have digital skills to participate in this new normal.

This section provides a comprehensive overview of digital skills among older adults in the EU, including statistics, challenges, and barriers they face, as well as initiatives and opportunities aimed at improving their digital skills. The information presented in this section offers an EU snapshot of the current state of digital literacy among the elderly population.

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Firstly, statistics related to the digital skills of the elderly population across the EU will be explored, highlighting the current state of digital literacy among this demographic. Next, the challenges and barriers faced by older adults in acquiring digital literacy skills will be discussed. Afterwards, the section will delve into the initiatives and opportunities aimed at improving the digital skills of older adults in the EU, including policy initiatives, training programs, and solutions aimed at bridging the digital divide and promoting digital inclusion among this demographic. Finally, the section will conclude by summarizing the key takeaways of the report and their implications for the BOOMER project's mission of promoting digital literacy skills among the elderly population in the EU.

### 2.1. Statistical Overview

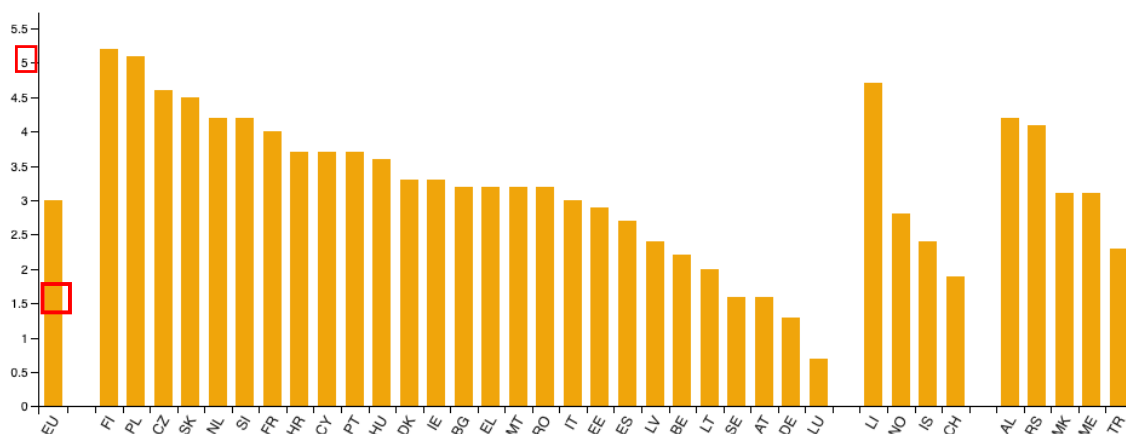
Introducing the annual Eurostat article "Population Structure and Ageing" which provides a quantitative and qualitative overview of the digital literacy among elderly population in the EU. According to the latest update, in 2021, more than one-fifth (20.8%) of the EU population was aged 65 and over, as reported by the European Statistical Office. Figure 1 shows an increase in the share of the





population aged 65 years or over between 2011 and 2021, with percentage values presented. This trend highlights the growing importance of addressing digital literacy among the elderly population, as this demographic continues to represent a significant proportion of the EU population.

*Figure 1. Increase in the share of the population aged 65 years or over between 2011 and 2021 (in percentage values)*



*Source: Eurostat, Population structure and ageing (2022)*

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Data was extracted in February 2022, with data from 2011 to 2021 included, and Figure 1 illustrates the increase in the percentage of older people (aged 65 or over) in the EU by 3 percentual points compared to a decade earlier. The latest survey also showed a further increase of 0.2 percentual points from 2020 to 2021. This article focuses on the impact of demographic ageing in the EU, which is becoming a major issue in the coming years. Due to consistently low birth rates and higher life expectancy, the age pyramid of the EU is shifting towards a population structure that is much older, which is already evident in several EU Member States. This demographic change is expected to continue, resulting in a significant rise in the proportion of older people in the total population, leading to an increased demand for services that support their inclusion and staying active, including digital literacy skills' initiatives in a digitizing world.

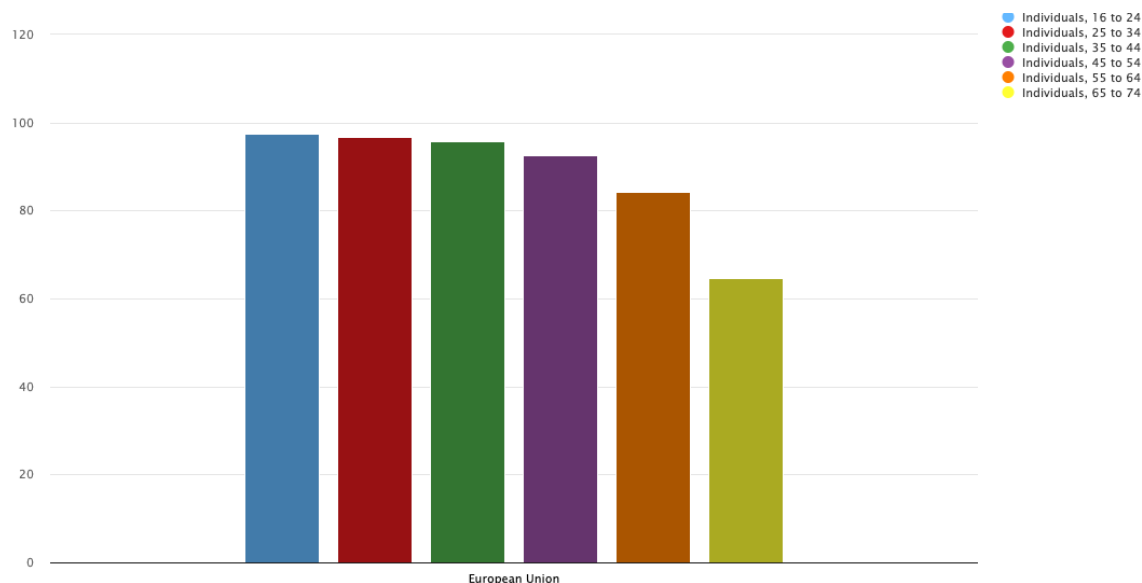
The significance of improving digital literacy skills and interventions for the elderly population can be underscored by examining the trends of two crucial indicators (internet usage and digital skills) in the EU across age groups. To this end, a Data Visualization Tool provided by the European Commission was utilized to analyze these indicators. Figure 2 illustrates the percentage of individuals who use the internet regularly (at least once a week) by age group in 2022.



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*Figure 2. Individuals who are regular internet users (at least once a week), by age group (2022) (in percentage values)*

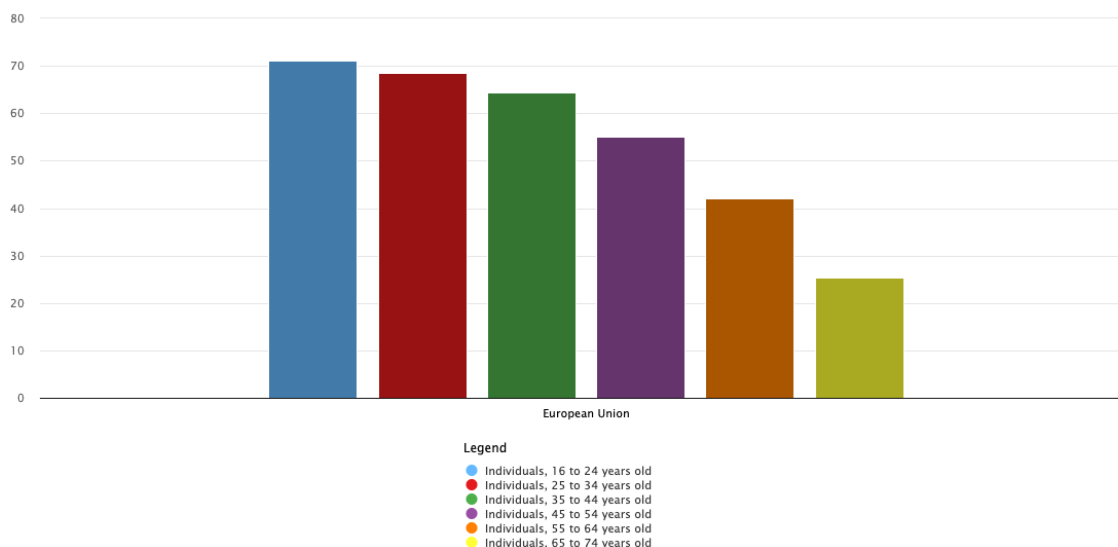


*Source: European Commission, Digital Scoreboard (2023a)*

The regular internet usage among the elderly population in Europe has been found to exponentially decrease with age, as demonstrated by the percentage values shown in Figure 2 for the age groups of 45 to 54, 55 to 64, and 65 to 74 in 2022. However, the COVID-19 pandemic has brought about a significant increase in the percentage of elderly individuals who regularly use the internet, as evidenced by a comparison with 2019 data in the same age groups. Despite the challenges of the pandemic, many older people have expressed a desire to use technology to stay connected, access information and services, and maintain their independence. To better understand the correlation between digital literacy and access to the digital world, it is important to examine the percentage of individuals with at least basic overall digital skills in the EU, as shown in Figure 3, which was collected and delivered by Eurostat and the European Commission. The comparison of this data with the findings from Figure 2 highlights the importance of promoting and developing digital literacy skills to bridge the digital divide and ensure equal access to technology for all.

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*Figure 3. Individuals with at least basic overall digital skills, by age group (2021)  
(in percentage values)*



*Source: European Commission, Digital Scoreboard (2023c)*

The percentage of individuals with minimum digital skills acquisition shows an exponential decrease by age group, as demonstrated in Figure 3. This decreasing trend starts from the age of 45, and the percentages for individuals aged 45 to 54, 55 to 64, and 65 to 74 are 55.07%, 42.04%, and 25.45%, respectively, according to the 2021 survey data.

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Comparing the 2021 post-pandemic to the 2019 pre-pandemic data, there has been a noticeable improvement in digital skills among the elderly population. The last three age groups, including individuals aged 45 to 54, 55 to 64, and 65 to 74, have seen a modest but significant increase in the percentage of those who have acquired at least basic digital skills. After the pandemic, these age groups saw an increase of approximately 0.24%, 4.21%, and 6.15% of individuals acquiring basic digital skills, according to the data elaboration by the European Commission (2023d). This emphasizes the importance of developing and promoting digital literacy skills to bridge the digital divide and ensure equal access to technology for all.

The increase in digital literacy among the elderly, as well as the surge in internet usage (as shown in Figure 2), emphasizes the vital role of digital skills in today's world, particularly during crises like the pandemic. Moreover, it demonstrates the elderly population's willingness and ability to acquire digital skills, which have become increasingly necessary. Despite this, many older adults struggle with basic digital tasks such as online shopping, online banking, and online

communication, which impedes their full participation in the digital economy. They face unique challenges in acquiring digital literacy skills, including limited access to technology and training opportunities, as well as lower levels of digital confidence and trust in technology.

The COVID-19 pandemic has emphasized the need for the elderly population to possess digital skills, as technology has become an essential means to access goods and services. However, the impact of the pandemic on digital adoption among the elderly has not been ideal. For those who still lack these basic digital competencies, it has resulted in heightened feelings of digital isolation. To sum up, the findings presented emphasize the importance of ongoing initiatives aimed at enhancing digital literacy skills among the elderly population in the EU and addressing the digital divide in this group. The next section will discuss some of the challenges and initiatives that can help achieve this goal.

## **2.2. Overcoming Barriers and Challenges, Exploring Opportunities, and Leveraging Initiatives and Resources**

The increasing importance of digital technologies in daily life has brought both challenges and opportunities for individuals, organizations, and governments. One major challenge is the digital skills gap, where certain segments of the population, including the elderly, may lack the necessary skills to fully participate in a digital society. This can lead to social exclusion, limited economic opportunities, and difficulties accessing essential services. However, addressing this challenge presents significant opportunities for both individuals and society. By promoting digital literacy and skills development, we can empower individuals to be more independent, active, and engaged in their communities. Additionally, increased digital skills can lead to new economic opportunities, such as remote work and entrepreneurship. For governments and organizations, investing in digital skills can lead to greater efficiency, innovation, and competitiveness in a rapidly changing digital landscape. The vast and increasingly essential opportunities presented by digital technologies and skills development, despite the challenges, will be discussed in more detail in the following paragraph.

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### *2.2.1. Barriers and Challenges*

This report's analysis and highlights reveal that the elderly population in the EU face significant obstacles and difficulties in achieving digital literacy, both before and during the COVID-19 pandemic. These challenges include:

- Limited access to technology: The lack of access to computers, smartphones, or the internet makes it challenging for many older adults to acquire digital skills.
- Scarce training opportunities: Many older adults may not have the chance to attend training sessions or may feel intimidated by digital devices, leading to a lack of digital literacy.
- Low digital confidence: Older adults often have low digital confidence, making them less likely to experiment with new digital services and seek support when they face problems.
- Lower trust in technology: The elderly population tends to have lower trust in technology, which can impact their willingness to engage with digital services and act as a barrier to digital literacy.
- Digital divide: There is a digital divide among the elderly population, with those who are more socioeconomically advantaged having greater access to technology and digital skills.

Regarding the COVID-19 pandemic, there have been several impacts on the digital literacy of the elderly population, including:

- A greater reliance on technology, since older adults have needed to use digital tools to obtain essential goods and services.
- An acceleration in digital adoption, as the pandemic has made it necessary for many elderly individuals to learn how to use technology to cope with social isolation and access necessary resources.
- Uneven impacts, with those who were already disadvantaged in terms of access to technology and digital skills experiencing even greater challenges during the pandemic.

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The macro-challenge extends beyond the need to empower ageing individuals by providing them access to digital technologies and enhancing their digital literacy, as highlighted in UNECE's Policy Brief No. 26. The rapid expansion of digital technology presents a challenging environment in the 21st century, where it can aid in acquiring new abilities, enhance social connections, promote self-reliant and independent lifestyles, and better manage health and social care services for ageing populations. However, not all individuals enjoy equal benefits, as the COVID-19 crisis has exposed unequal access to digital technology among and within populations. The elderly population is more vulnerable to digital exclusion and face difficulties accessing online goods and services, as well as in-person training programs. This exclusion limits opportunities for active and healthy ageing, including social and economic involvement. According to the same UNECE document, "ensuring age-friendly design and relevance of digital services, as well



as ethical and safe digital environments that embrace the diversity of ageing populations and are free from ageism, is crucial" (UNECE, Policy Brief on Ageing No. 26: Ageing in the Digital Era, 2021).

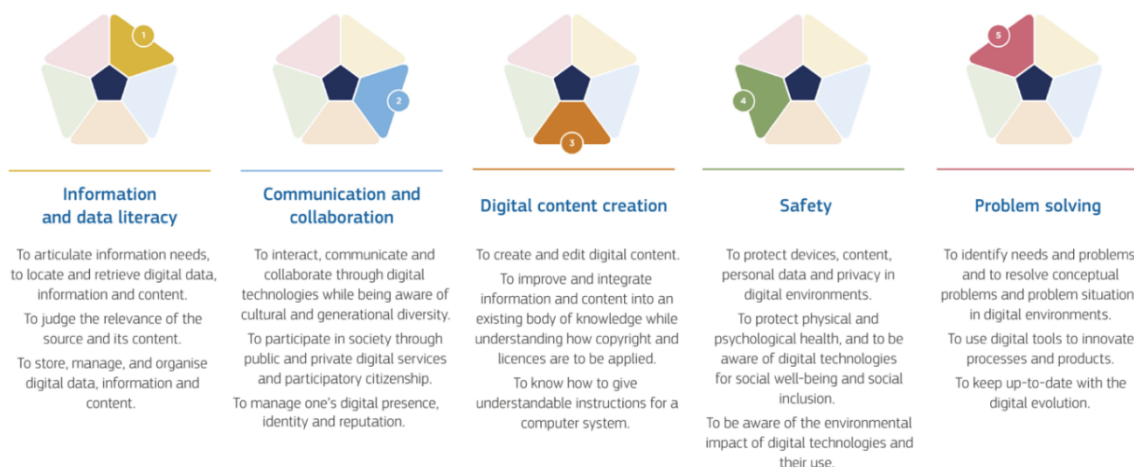
Continuing the same topic, a new publication titled "The Digital Era? Also my Era!" was launched on June 16th, 2022 at the UNECE Ministerial Conference on Ageing in Rome. The publication, endorsed by the Council of Europe, aims to promote digital literacy among senior citizens and highlights the importance of media and information literacy in ensuring seniors' right to participate in the digital era. The publication provides the following key takeaways:

- The ageing of populations is a major challenge of the 21st century, and digital transformation plays a crucial role in addressing it.
- Digitalization should be human-centered and consider the needs and concerns of individuals of all ages.
- Policies should prioritize human rights, democracy, and the rule of law in the digital transition.
- Older people have the right to acquire media and information literacy skills, and media platforms and civil society have a responsibility to enable them to do so.
- Older people should be empowered to become media and information literate and to participate in the digital society as informed and critical citizens.

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Returning to the main objective of the BOOMER project, which is to enhance digital literacy skills, the project focuses on the competency areas that pose challenges for the elderly population and measures the skills gap. European data and tools, shown in Figure 3, assess digital skills based on the competence areas outlined in the DigComp frameworks. In all areas, the elderly population underperforms compared to the youngest age groups at the EU level. Figure 4 identifies the following five areas that require immediate and appropriate actions to improve digital literacy skills among the elderly and increase related performance in key indicators according to the analysis of DigComp 2.2.

Figure 4. DigComp 2.2 areas



Source: European Commission, *DigComp 2.2: The Digital Competence Framework for Citizens (2022)*

Despite the difficulties and obstacles faced, the COVID-19 pandemic has also brought about some positive effects, including a greater recognition of the importance of digital literacy for older adults. The need to adapt to new ways of completing daily tasks has driven an increased demand for digital skills among this demographic. For example, many older adults have had to improve their digital proficiency to manage procedures and activities that have become fully digitized, such as health management, telework, and e-commerce.

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In conclusion, ongoing efforts are required to promote digital literacy among the elderly population, including providing access to technology, training opportunities, and support to build digital confidence and trust.

### 2.2.2. Opportunities, Resources, and Initiatives

Making digital literacy training a top priority in policy is crucial to bridge the digital skills gap and enable older individuals to utilize digital technologies, fostering independence, social connections, activity, and inclusion in the digital society. At the European Union level, there are numerous opportunities, programs, and resources accessible to support digital literacy and skills improvement, particularly for older adults, by overcoming obstacles and challenges. It's important to note that the initiatives mentioned below, while still ongoing, have already yielded positive initial outcomes in enhancing digital competence. This is demonstrated by the 2022 quantitative highlights data presented in this report.



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The Connecting Europe Facility Programme established the European Digital Skills and Jobs Platform to bridge the digital skills gap in Europe. This platform acts as a central point for digital skills initiatives in the EU and is home to the Digital Skills and Jobs Community. It offers a range of resources, such as information, best practices, tools, and training opportunities for digital skills development, catering to various levels, from novice to expert.

To improve digital skills through education, the European Commission has initiated a structured dialogue with EU Member States as part of the Digital Decade, a strategic vision for the digital economy by 2030. To ensure participation from all relevant organizations and initiatives, including the National Digital Skills and Jobs Coalitions, which aim to provide digital skills to all segments of society, each EU country has appointed a national coordinator.

To prepare Europe for the digital era, the Digital Decade is a significant strategic priority for the European Commission that complements other EU initiatives like the Digital Education Action Plan, the Digital Europe Programme, and the Recovery and Resilience Facility. The goal is to improve the digital skills of citizens, with a target that "80% of European citizens should possess at least a basic level of digital skills" by 2030, according to the Digital Skills & Jobs Platform (2021).

In this context, initiatives and resources focused on enhancing digital literacy skills in Europe are crucial for the elderly population to improve their digital skills, enabling active and healthy ageing, social and economic participation. The EU's structured dialogue with Member States and the appointment of national coordinators, in addition to recent initiatives, aim to bring digital technologies to education and help people, including the elderly, improve their digital skills.

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### **2.3. Main Findings on the EU Level**

The EU is experiencing a significant demographic shift towards an older population structure due to low birth rates and higher life expectancy. As of 2021, 20.8% of the population is aged 65 and over. While the elderly population in the EU saw a significant increase in internet usage due to the COVID-19 pandemic, they still have a decreasing rate of internet usage compared to younger age groups. As age increases, there is an exponential decrease in the percentage of individuals with minimum digital skills, although there has been a modest increase in digital skills acquisition due to the pandemic.

The elderly population in the EU faces several barriers to digital literacy, including lack of access to technology, limited training opportunities, low digital confidence, low trust in technology, and digital divide. However, the rise in digital literacy





among the elderly population highlights the importance and necessity of digital skills in today's world. It is essential to empower older individuals with digital technologies and enhance digital literacy to ensure age-friendly and safe digital environments.

To promote digital literacy among the elderly population, continued efforts are needed to provide access to technology, training opportunities, and support to build digital confidence and trust. Digital literacy training is a policy priority to reduce the digital skills gap and empower older individuals. The BOOMER project aims to enhance digital literacy skills among the elderly population, with a focus on improving performance in all areas as per DigComp 2.2 framework, including Information and data literacy, Communication and collaboration, Digital content creation, Safety, and Problem solving.

The European Digital Skills and Jobs Platform serves as a hub for digital skills initiatives in the EU, providing information, resources, and training opportunities for digital skills development. The European Commission has also initiated a structured dialogue with EU Member States as part of the Digital Decade strategy to improve digital skills through education. These initiatives and resources are crucial for older individuals to improve their digital skills for active and healthy aging, including social and economic participation. "The Digital Era? Also my Era!" publication emphasizes the need for a human-centered approach to digitalization that considers the needs of all individuals, particularly senior citizens.

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### 3. COUNTRY REPORTS

The following section provides an overview of reports on the digital skills and literacy of older people in four European countries: Germany, Italy, Spain, and Croatia. These reports examine the current state of digital literacy among older adults, identify the challenges they face in accessing and using digital technologies, and offer recommendations for improving their digital skills and inclusion. The section aims to provide insights into the efforts made by these countries to bridge the digital divide among older adults and promote digital literacy among them. The key takeaways from each report will be discussed, highlighting the similarities and differences among the countries.

#### 3.1. Germany

The German population is aging, and older people are becoming increasingly interested in digital technologies that can help them live more independently. For example, many older people would like age-appropriate assistance systems in their homes to help them detect falls and trigger emergency calls. However, many older people lack the digital skills needed to take full advantage of these technologies. This section will explore the demographics and digitalization landscape in Germany in more detail.

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##### *3.1.1. Demographics of Germany*

The elderly population in Germany is increasing and has surpassed the number of children and young people. According to the statistics, the age group between 18 and 65 will constitute most of the German population in 2020, accounting for 61.5% of the total population (Blätgen & Milbert, 2020). However, there are notable regional variations in the age distribution. For instance, the percentage of children and young people is lower than the national average in rural areas of eastern Germany and several western German cities, whereas the outskirts of cities with numerous families have higher figures. Conversely, the rural regions in northern and eastern Germany have a higher proportion of individuals aged 65 and above. As of 2020, the 60-80 age group represented 18.3 million people, while the 80-100 age group had 6.1 million individuals (Statistisches Bundesamt Destatis, 2022a).

According to the 15th coordinated population projection, the percentage of individuals aged 67 and above is predicted to increase across all scenarios. By 2040, there is a significant surge projected to occur, with the proportion ranging from 23% to 26%. In the event of a young age structure, the percentage of



individuals aged 67 and above is expected to remain stable. In all other scenarios, the proportion will continue to rise, albeit at a slower pace than before the shift of the highly populated cohorts into this age group. By 2070, the percentage of individuals aged 67 and above will range from 22% to 30%. As of 2021, the percentage of the elderly aged 80 and above is 7%, and this figure is anticipated to increase to up to 12% by 2050, particularly as the children of the baby boomer generation and the significant influx of immigrants in recent years reach this age group. This percentage may rise even further to up to 14% by 2070 (Statistisches Bundesamt Destatis, 2022b).

In eight out of the nine main variants of the 15th coordinated population projection, the average age of the population in Germany is expected to rise, with projections suggesting it could reach 50 years by 2070. The only scenario where the current average age of 45 years could be maintained is in a development with a young age structure. The number of people aged 67 and over in Germany's "old" territorial states is also expected to increase at a similar rate in all projection variants, reaching between 15.9 million and 16.6 million people by 2039, and then remaining relatively stable until the mid-2050s before gradually increasing again. In the "new" territorial states, the working-age population of 20 to 66 years is predicted to shrink continuously from 7.4 million in 2021, with projections suggesting it could decline by 14 to 29% by the end of the 2050s, stabilizing or declining slowly thereafter, and reaching between 5.0 million and 6.6 million by 2070 (Statistisches Bundesamt Destatis, 2022b). Based on these available figures, increasing efforts in digitalization is of paramount importance.

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To provide additional information, it should be noted that the term "Area countries" refers to federal states that encompass more than one or two cities, in contrast to the city states of Berlin, Bremen, and Hamburg. This means that the municipal level in these states includes a larger number of cities, municipalities, and municipal associations. The "old" Area countries of Germany are comprised of Baden-Württemberg, Bavaria, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, and Schleswig-Holstein. On the other hand, the "new" Area countries of Germany consist of Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, and Thuringia (Buth, 2023).

Statisticians in the Federal Republic of Germany refer to those born between 1955-1969 and 1956-1965 as the baby boomer generation (Sehl, 2021). This generation is often criticized for having conservative and outdated views, and a lack of willingness to learn and adapt, leading to intergenerational conflicts.



However, the baby boomer generation is known for valuing work and being highly committed to it. In the next 20 years, around 20 million workers will retire while only 14 million new workers will enter the labor market. The baby boomer generation makes up a significant portion of this retiring group, with over 10 million retiring. By the mid-2030s, many of the baby boomers will enter the 80-plus age group (Statistisches Bundesamt Destatis, 2022c). Given these statistics, digitalization is of great importance and that it must be optimized through education and training.

### *3.1.2. Digitalization Level, Digital Skills, and Ongoing Initiatives*

The Federal Ministry for Family Affairs, Senior Citizens, Women and Youth stated in the Eighth Report on Aging published in 2020 that older people cannot be considered as a homogeneous group. There is no single profile of an older person due to variations in life histories, gender, education level, income, type of employment, and social background. Therefore, caution must be taken when referring to older people as a group in the context of digitalization and necessary qualifications. However, according to the Ageing Report, digital technologies have the potential to significantly enhance the quality of life for older people. Digitalization offers new possibilities for shaping life in old age and achieving social participation (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2020).

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The significance of digitalization for older people is apparent when examining the various areas in which digitalization is increasingly relevant:

- Housing: Digital technologies are developed to promote independent living within one's own residence, allowing individuals to stay at home even when they require assistance. Technical assistance systems and smart home technologies that can connect to the internet and each other are employed for this purpose.
- Mobility: Digital technologies may restore lost mobility or regulate the mobility of older individuals, such as preventing falls.
- Social integration: The proliferation of digital communication technologies and the use of the internet have created new opportunities for older individuals to connect with others or maintain existing relationships.
- Health: Digitalization provides a broad range of possibilities in health care for older individuals, including e-health services like electronic patient files, digital information systems, or virtual doctor visits that may simplify access to medical care.

- Care: It is suggested that digital technologies may relieve and support caregivers while also enhancing networking and information sharing within care networks.

It is a common misconception that older people are generally hesitant and struggle to use digital technologies and the Internet. However, many older individuals are proficient and comfortable with these tools. The availability of local resources and support systems, as well as the social environment, play a crucial role in enabling older individuals to be digitally literate, provided they possess the willingness and desire to develop their own digital competencies. In the past two decades, numerous initiatives and programs have been established to enhance the digital skills of older people, with a particular emphasis on easily accessible local offerings that cater to their specific needs and are often run by older volunteers. These resources meet the demand for informal, self-directed, and life-oriented learning opportunities among older people (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2020).

The Initiative D21 conducted a study titled "Digital Skills Gap" in 2020/2021, which focused on understanding digital literacy. The study highlighted differences in age, education, and occupational ability as key factors that affect digital competency. Individuals aged up to 59 years are generally confident in their knowledge and use of digital services for everyday needs, but only 25% of those aged over 70 possess the same level of proficiency (Dathe, 2021).

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The study found that 87% of internet users in Germany can conduct searches on the internet and find specific information, including 74% of those aged 70 years and older. However, there is a visible decline in the ability to use different sources for research, particularly in less digitally savvy groups (70+ years: 43%). Evaluating sources to distinguish between serious and dubious news is also a challenge for some, with 61% feeling confident in their ability to do so, but this drops to 47% for those aged 70 years and older. Educational level also plays a significant role in this area, with 75% of individuals with a high level of education feeling confident, compared to only 39% of those with a low level of education (Dathe, 2021).

Hannes Schwaderer, President of Initiative D21, emphasizes that digital skills are not evenly distributed across society. Younger and better-educated people tend to be more competent in the digital world, while older and less-educated individuals require support to avoid being left behind. Therefore, accessible, and localized digital services that offer initial assistance to those who need it most should be provided free of charge. Schwaderer notes that digital participation is now a crucial part of social participation (Dathe, 2021).



The study highlights the urgent need to enhance digital skills across society, particularly among diverse groups. One way to achieve this is to prioritize digital skills in all areas of formal and informal education. Target-group-specific offerings for digital skills acquisition should cover areas such as communication techniques and social media, information and research skills, programming, IT and data security, media design basics, copyright, personal rights, and data protection law. Educational offerings must be designed with the target group in mind to ensure that learners are effectively supported, and the learning process is sustainable. Although the DigComp framework addresses digital competencies for citizens in general, Schwaderer notes that the requirements and application scenarios for these competencies are diverse, and thus a one-size-fits-all approach is not appropriate (Initiative D21 e. V., 2021).

The importance of education in the digital world for older people is addressed in a handout by the Bundesarbeitsgemeinschaft der Senioren-Organisationen e.V. (BAGSO) in 2019, which includes concrete tips. While Internet use among older people has become increasingly widespread over the last 20 years, it is not as widespread as in younger age groups, with a penetration rate of only 56.6% in 2016. In 2017, 45% of people aged 65 and over in Germany were still "off-liners", equivalent to around 9.3 million people, and older Internet users tend to use it less frequently and more stationary than younger users. Therefore, it is essential to provide older people with education and support that is tailored to their needs to enable them to participate in the digital world (Bundesarbeitsgemeinschaft der Senioren-Organisationen e.V. (BAGSO), 2019).

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The Internet provides older people with an opportunity to participate in social events and maintain independence at home. However, some older people may not use digital media due to a lack of perceived benefit, complexity, or concerns about data privacy and security. Older individuals typically engage with digital media when they see the benefits and understand the added value while considering the manageable costs and risks (BAGSO, 2019).

The handout by Bundesarbeitsgemeinschaft der Senioren-Organisationen e.V. (BAGSO) presents a guideline for designing learning processes for older adults. If the topic is digitalization, then the educational goals and the approach of self-determined learning must be considered. Learning in old age requires a different approach than school or vocational education. It should be a shared learning process that enables everyone to actively engage with their new role and find their strengths. This approach is called "self-determined learning."

According to a survey by the Bertelsmann Stiftung in April and May 2019, 1,007 people were surveyed on the digital skills of older people, and 550 of them were





employed. More than one-third of the respondents are uncertain about using digital devices. The over-65s exhibit the greatest insecurity, with an average perception of security at around 2.8 on a scale of 0 to 4. Confidence in using digital devices drops by around one-fifth on average as soon as an elementary or secondary school certificate is obtained. This indicates a gap between older users due to different levels of education, emphasizing the need for more needs-oriented educational programs for older users (Bertelsmann Stiftung, 2020).

The range of applications for digital technologies is constantly expanding, providing older people with opportunities for greater independence and self-determination. For instance, digital devices can increase safety for seniors who live alone by enabling motion sensors to detect falls and send emergency calls. Additionally, internet platforms that facilitate shopping, renting, and sharing of goods and services can enhance their ability to live independently. While some medical services such as online consultations are still not widely accepted by older people, the trend towards digital patient records and knowledge management is seen as helpful. A recent survey shows that older people will increasingly recognize the importance of digital technologies in the future.

However, the challenge is to help older people who are interested in digital technologies but lack the necessary skills to use them confidently. The guide on digital skills for older people, developed by Telefonica, O2, and the Digital Opportunities Foundation, aims to support seniors by planning and designing services according to their needs. The guide offers scenarios that demonstrate practical situations where mobile devices and the internet can be useful, thus motivating and enabling older people to use digital media (Telefónica Deutschland Holding AG & Stiftung Digitale Chancen, 2019).

Support services can be designed in various formats, depending on the topic and target group, such as short training units or ongoing offerings like regulars' tables or office hours. Senior citizens' advisory boards or offices can also be installed as intermediaries to help older citizens acquire operating, orientation, and design knowledge. The Digital Fit project has shown that many senior citizens are interested in digital training, and senior citizens' advisory boards can serve as multipliers for local seniors with a focus on housing, mobility, and low threshold offers for digital content training. In recent years, municipalities have increasingly recognized the benefits of digital devices for older people, partly triggered by advisory councils (Telefónica Deutschland Holding AG & Stiftung Digitale Chancen, 2019; Köstler, 2021).

In summary, the aging of the German population presents challenges for digitalization as older people are less likely to have digital skills. The availability

and accessibility of digital technologies and the internet are critical in allowing older people to live independently. There is a growing interest among older people to learn digital skills, and various organizations and initiatives have been developed to support them. These initiatives include the development of a guide for teaching digital skills to seniors and the creation of senior citizens' advisory boards. Social participation is increasingly influenced by digital sovereignty, and older citizens need to acquire operating knowledge, orientation knowledge, and design knowledge.

### **3.2. Italy**

With a significant portion of its population over the age of 65, Italy is grappling with issues related to digital exclusion among its elderly citizens. This problem is particularly acute in Southern Italy, where the elderly population is more concentrated and has limited access to technology and services. In response to these challenges, the Italian government has launched several initiatives aimed at enhancing digital skills and eliminating digital disparities among the elderly population. This section will explore the current state of digital exclusion among the elderly in Italy, the challenges they face, and the government initiatives aimed at addressing these issues.

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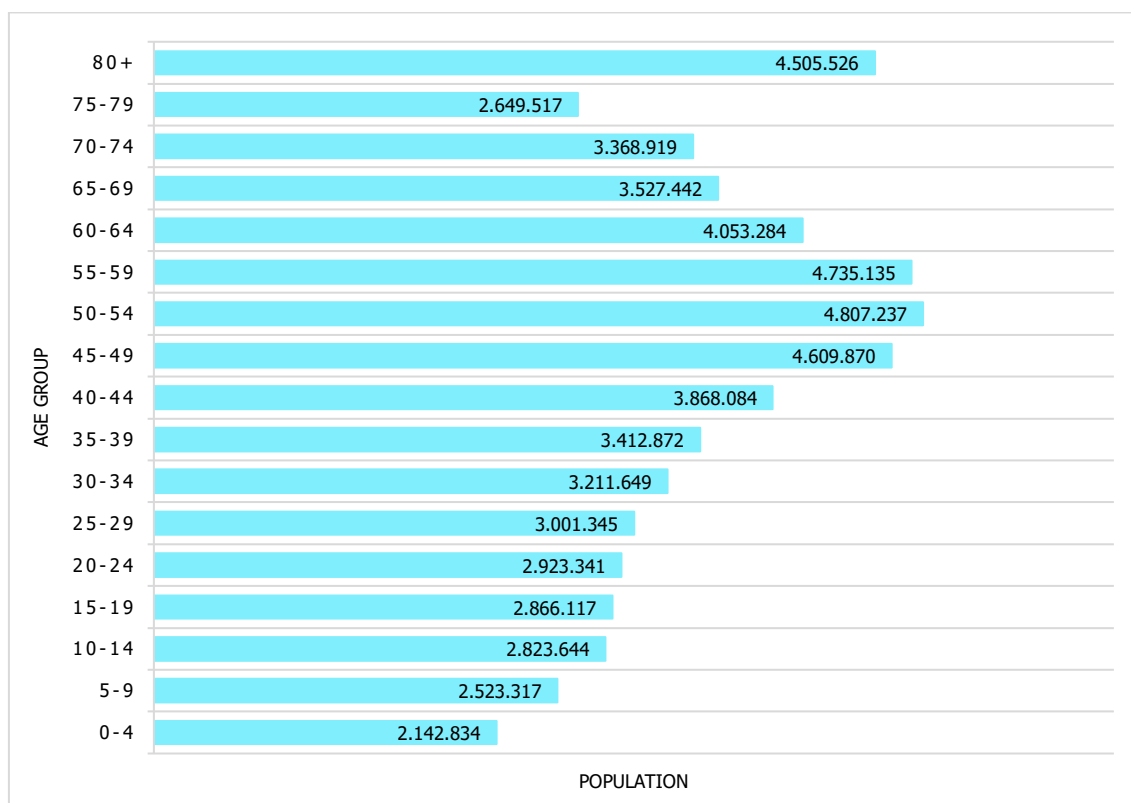
#### *3.2.1. Italian Population and their Digital Skills*

According to the latest data from Istat, Italy has a population of approximately 59 million people. Figure 5 displays the Italian population broken down by age group in 2023.





Figure 5. Italian population by age group in 2023

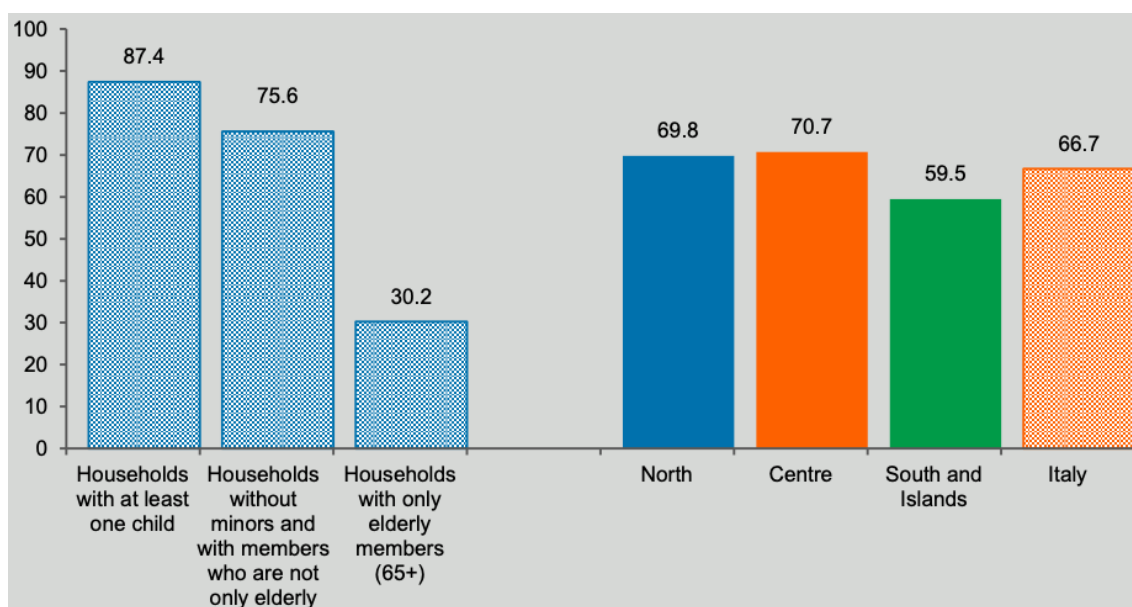


Source: authors' calculation based on data from Istat (2023a)

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As depicted in Figure 5, the population is showing a trend towards aging, with a significant portion of individuals being 45 years of age or older. This trend is expected to continue due to declining birth rates and increased longevity, with life expectancies of 84.7 years for women and 82.4 years for men (Istat, 2022). Consequently, Italy's population structure will be predominantly older, as indicated by the trend in Figure 5. The population of Italy is not evenly distributed across the country, with higher population density in northern regions and major cities like Rome, Milan, and Naples. This uneven distribution has various impacts, including access to ICT and other services, and affects the local economy. The digital divide within the country is evident in household internet connectivity and personal digital device ownership, with Figure 6 illustrating disparities in access based on family type and geographic area. The elderly population in southern Italy lags in internet usage. Figure 6 provides percentage values for households with internet and personal computer access by family type and geographic area in 2020.

*Figure 6. Households with Internet connection and at least one personal computer by family type, by geographic area (2020) (in percentage values)*

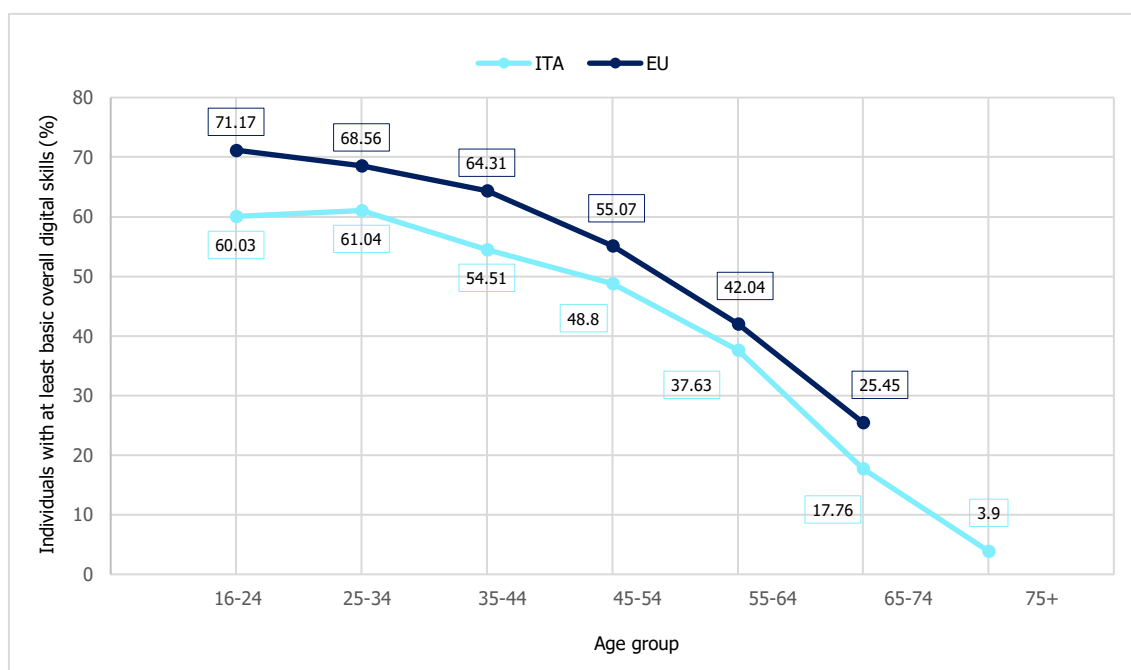


*Source: Istat, BES, Equitable and sustainable well-being in Italy (2021)*

According to Figure 6, in 2020, 66.7% of households in Italy had internet access and at least one computer. However, there were significant regional disparities, with central and northern Italy having higher rates of access compared to southern Italy and the islands. Family education and digital literacy had a significant impact on the availability and use of technology, particularly in households consisting solely of elderly individuals. Eurostat's data, presented in Figure 7, shows the percentage of individuals in Italy with basic or above basic overall digital skills by age group. Comparing this data with the findings from Figure 6 highlights the importance of promoting digital literacy to bridge the digital divide and ensure equal access to technology for all. This is especially important in the context of Italy's aging population and the associated challenges to ICT adoption.

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Figure 7. Individuals with basic or above basic overall digital skills, by age group (2021) (in percentage values)



Source: authors' calculation based on data from Eurostat (2023a)

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Figure 7 reveals that the acquisition of basic digital skills among Italians of all age groups is lower than the EU average. Digital skill acquisition also decreases with age, with a significant drop after the age of 65. However, the 2021 Eurostat data shows that Italy has made progress in digital literacy compared to pre-pandemic levels. The percentage of elderly people with basic digital skills has increased, with the greatest growth in the age groups of 45 to 54, 55 to 64, 65 to 74, and those aged 75 and over (European Commission, 2022). This demonstrates the importance of digital skills, particularly during a crisis like the COVID-19 pandemic, and the willingness of the elderly population to adapt to the digital world. The pandemic has accelerated digitalization among the elderly population, with many forced to rely on digital tools for communication, shopping, and other activities. According to ISTAT surveys conducted from 2020 to 2022, the elderly population has significantly increased their use of digital technologies, especially for buying and selling goods and services. However, for those without basic digital competencies, the pandemic has led to greater digital isolation. The growing demand for digital literacy has inspired many elderly individuals to acquire these skills to remain connected and active in a rapidly digitizing world.

### 3.2.2. Challenges and Opportunities

As per the analysis of the cited documents and highlights presented in this report (see references), it is evident that the elderly population in Italy faces significant challenges, threats, and inhibitors concerning digital literacy, both before and during the COVID-19 pandemic. These challenges include:

- Limited access to technology: A large proportion of elderly individuals in Italy may not have access to the latest digital technology, such as computers, laptops, and mobile devices, which can hinder their ability to acquire and use digital skills.
- Digital divide: There is a significant digital divide between tech-savvy individuals and those who are not, and the elderly population is often at a disadvantage in this regard.
- Inadequate digital literacy: Many elderly individuals lack the basic digital literacy skills necessary to navigate and use digital tools effectively, which can limit their ability to take advantage of the numerous benefits that digital technologies offer.
- Fear of technology: Some elderly individuals may be afraid or intimidated by technology, which can impede their ability to learn and use digital skills effectively.
- Limited resources: There may be insufficient resources available to support the elderly population in acquiring digital skills, including training programs, support groups, and technology hubs.

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Although the exclusion of the elderly population from digital technology is a multifaceted issue caused by various deficits, this report, in line with the BOOMER project's aims, focuses on digital literacy. The digital divide is not solely a matter of infrastructure or funding, although these are important factors, but also of culture and the associated digital skills. According to a scientific article, "digital competence strongly intersects with the concept of media literacy, which has traditionally been defined as the capacity to access and use, comprehend and evaluate, and create media content and communications in a range of contexts, including digital ones" (Carenzio, Ferrari & Rasi, 2021).

Regarding digital literacy challenges faced by the elderly population, Eurostat data based on the DigComp framework's competence areas shows high levels of information and data literacy and communication and collaboration skills, which in some cases exceed the performance of the youngest age group examined (16-24 years). However, the elderly population is falling behind the EU average in these areas. The most urgent areas for action are digital content creation, safety, and problem-solving. The COVID-19 pandemic has further exacerbated the



challenges faced by the elderly population, leading to increased digital isolation and limited opportunities for acquiring digital skills. The pandemic has also made it more difficult for the elderly population to access in-person training programs.

Despite the challenges faced by the elderly population during the COVID-19 pandemic, there have been some positive impacts as well. The pandemic has raised awareness about the importance of digital literacy and there has been a growing demand for digital skills among older adults, who are striving to adapt to new ways of completing daily tasks. The pandemic has forced many older adults to improve their digital skills to cope with the fully digitalized procedures and activities, such as online banking, managing health procedures, and buying and selling goods online. While they faced some difficulties, many have taken advantage of the extra time at home to learn new digital skills and have found innovative ways to stay connected with their loved ones through technology.

To address these challenges, a variety of initiatives and resources have emerged in Italy, providing the elderly with opportunities to acquire essential skills and become more connected in an increasingly digital world. It is worth noting that some of these initiatives have already yielded positive results, as demonstrated by the 2021 Eurostat data presented in the quantitative highlights section of this report.

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In April 2020, the Ministry for Technological Innovation and Digital Transition launched the National Coalition for Digital Skills and Jobs, aligning with the European Commission's digital skills and professions program. The initiative is a collaborative effort among government, industry, and civil society organizations. The first pillar of the Italian Coalition's objectives is to eliminate digital disparities among the Italian population, promote digital inclusiveness, and enhance skills growth. To achieve these goals, the Coalition has launched and will continue to launch several initiatives, including the expansion of digital literacy among all citizens by providing access to learning resources such as self-assessment tools, e-books, and online courses. For instance, the "A tablet and a smile for the elderly" project aims to equip elderly people in small towns at risk of digital exclusion with tablets equipped with specific apps and training on how to use digital services, with the assistance of young volunteers.

Continuing with the discussion of government initiatives, the National Strategy for Digital Skills in Italy was established as part of the Digital Republic framework and was approved in July 2020. This strategy takes a clear and strategic approach to digital skills policy, focusing on sustainable actions and ensuring the relevance of existing initiatives. The strategy is organized into four lines of intervention, one of which is focused on enhancing the digital skills necessary for civic engagement



and democratic participation among citizens. The Department for Digital Transformation is leading efforts in this area. Additionally, an Operational Plan was published in December 2020 that includes targets for 2025, based on indicators such as DESI and Eurostat data. These targets include equipping 70% of the population with at least basic digital skills (compared to 45.6% in 2021) and increasing internet usage and computer skills for older people, with a target of 84% in the 65-74 age group.

Under the National Recovery and Resilience Plan (Vlada Republike Hrvatske, 2021b), an investment of EUR 195 million has been allocated to the Basic Digital Skills initiative to address digital exclusion in Italy. The initiative will introduce the Digital Civic Service, where a team of volunteers from diverse backgrounds will offer training and support in enhancing digital skills to individuals at risk of digital exclusion, especially seniors. The existing network of Digital Facilitation Centers will also be fortified by dedicated training programs and new equipment, with the overall goal of creating 2,400 new access points throughout Italy and training over 2 million citizens at risk of digital exclusion. Of the 3,000 centers, around 1,200 will be concentrated in Southern Italy. These centers will provide support and training to the elderly population in accessing public (SPID, online social security, and tax services, etc.) and private (online bank accounts, online shopping, etc.) digital services.

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To summarize the successful initiatives aimed at addressing digital exclusion among elderly individuals in Italy, two examples have been identified. The first example is the "Pane e Internet" project, which is part of the Emilia-Romagna Region's Regional Digital Agenda. The project aims to cater to digital citizens of all ages who use technology to access information, online services, and digital opportunities within their region. The project offers a range of activities, including digital literacy courses for those with little confidence in using computers and smartphones, as well as courses on digital education and digital life, covering topics such as internet addiction, fake news, online purchasing, social networks, digital marketing, and more. The second example is the IDCert Digital Competence certification, which is the only certification in Italy built entirely on the DigComp Frameworks. The certification is part of a training course offered by IDCert and accredited by the Ministry of Education, University and Research.

In summary, Italy is facing an aging population with uneven distribution across the country, leading to disparities in access to technology and services. Digital literacy and education play a significant role in ICT availability and usage, with elderly individuals having a negative impact on household usage. While Italy's digital skills are lower than the EU average, the COVID-19 pandemic has





accelerated digitalization among the elderly, leading to increased digital literacy. Challenges faced by the elderly population include lack of technology access, digital divide, low levels of digital literacy, fear of technology, and limited resources. To address these challenges, the Italian government has launched various initiatives to enhance digital skills and eliminate disparities. Additionally, the government has invested in reducing digital exclusion among seniors by strengthening the existing network of Digital Facilitation Centers and creating new access points.

### **3.3. Spain**

Spain has a rapidly aging population, with one of the highest life expectancies in the world and a low birth rate. This demographic shift is expected to have significant social, economic, and political implications for the country in the coming years. Given these factors, it is imperative to delve deeper into the issue of digital literacy among the elderly in Spain. This would entail conducting a comprehensive analysis of the state of the issue in the country and identifying areas for enhancing digital literacy and skills through the future outcomes of the BOOMER project.

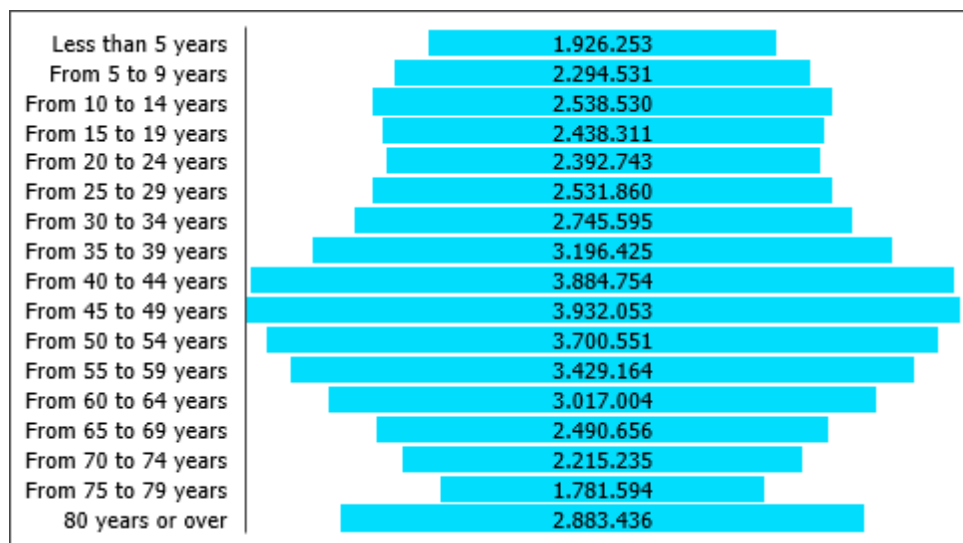
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#### *3.3.1. Spanish Demographics*

In Spain, only half of the population aged 55-64 had basic digital skills in 2021 (Eurostat, 2022a). Although there has been some improvement compared to pre-COVID-19 times, the figures are still alarming. The population of Spain is displayed by age group in Figure 8, which represents the year 2021.



Figure 8. Spanish population by age group in 2021



Source: authors' calculation based on data from Eurostat (2022c)

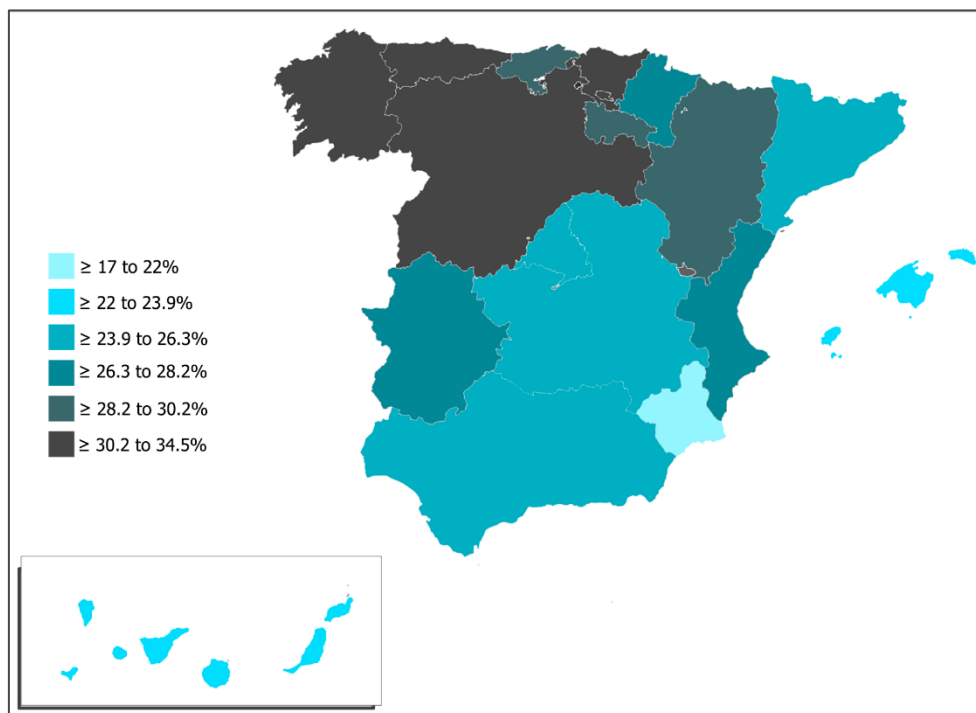
Figure 8 displays the age distribution of the Spanish population, indicating a significant predominance of individuals over 50 years old. This demographic trend, known as the "inverted pyramid," reflects a decrease in birth rates and an increase in life expectancy, resulting in a population that will increasingly consist of older individuals. The life expectancy in Spain, as reported by INE (2021), is 82 years.

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The distribution of the population in Spain is not evenly spread, as shown in Figure 9, which is based on Eurostat data (2022b). The map reveals that there is a greater concentration of people aged 60 and over in the northern regions of the country, such as Galicia, Asturias, the Basque Country, and Cantabria, while regions such as Murcia, the Canary Islands, and the Balearic Islands have a lower proportion of individuals aged 60 and over.



Figure 9. Percentage of Spanish population over 60 years old by regions in 2021

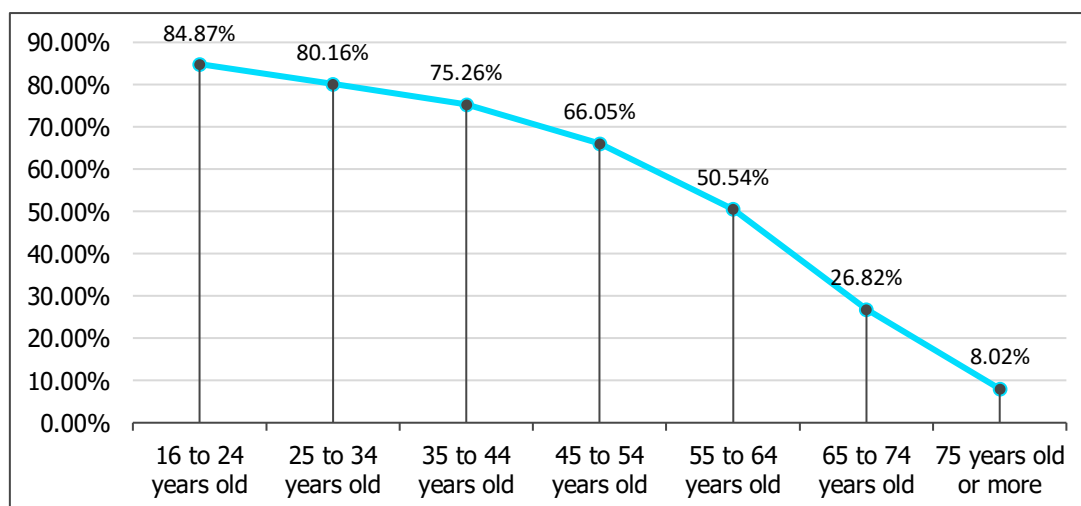


Source: authors based on data from Eurostat (2022b)

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The percentage of the Spanish population possessing basic digital skills, sorted by age group, is illustrated in Figure 10. The graph demonstrates a negative correlation between age and digital skills among Spaniards, where the older the age group, the lower the level of digital skills.

Figure 10. Percentage of population with basic digital skills by age group in 2021



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*Source: authors' calculation based on data from Eurostat (2022a)*

When comparing the data before the pandemic in 2019 with the data for 2021 (post-pandemic), it is evident that there has been a considerable rise in the percentage of individuals over 55 years of age possessing basic digital skills. The three age groups of 55 to 64, 65 to 74, and 75 years old or more have all witnessed an increase of about 10%, 7%, and 3% in the number of people having basic digital skills after the pandemic, according to Eurostat (2022d). Notably, there is an inverse correlation between age and the level of digital skills: the older the population, the lower the level of digital skills. For instance, only 26.82% of people aged 65-74 had basic digital skills in Spain in 2021 (Eurostat, 2022a).

Despite the observed growth in basic digital skills among the elderly population after the pandemic, this progress has come with unfavorable conditions and has contributed to increased digital isolation among those who lack these skills. According to a report by the Democratic Union of Pensioners and Retired Persons of Spain (UDP, 2021), 71.7% of individuals over 65 were unable to complete certain procedures, such as health or banking transactions, which could only be done online or through a machine after the onset of the pandemic.

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### *3.3.2. Barriers to Digitalization and Available Opportunities*

The data discussed highlights the presence of a digital divide among older individuals in Spain, which has become increasingly apparent due to the digitalization of various procedures and formalities in the post-pandemic era. Although there has been an increase in the number of seniors with basic digital skills, the widening gap between those with and without such skills has resulted in increased digital isolation for many. Addressing this issue, the Digital Spain 2026 agenda aims to ensure that at least 80% of the population has basic digital skills by 2025 (Gobierno de España, 2022), while the National Plan for Digital Skills specifically focuses on providing digital competencies to elderly individuals within the framework of the Digital Spain agenda (Ministerio de Asuntos Económicos y Transformación Digital, 2021).

One of the main actions to address digital isolation in Spain is training, which is included in the National Plan for Digital Skills. The plan proposes the creation of a national network of digital training centers for citizens, and the success of this measure will be measured by the number of seniors enrolled. Additionally, informal learning networks where seniors teach other seniors represent an opportunity for the Spanish ecosystem, according to the Ministry of Economic



Affairs and Digital Transformation (2021). It is crucial to consider the obstacles to learning, and this research revealed a deficiency of accessible training programs designed specifically for seniors. Given that some older adults may have mobility issues, providing online training is imperative to ensure that they can access resources at their convenience.

The State Council of Elderly People approved the National Strategy for Active Ageing of Seniors and for their Good Treatment 2018-2021 in November 2017. According to the strategy, reinforcing Information and Communication Technologies (ICT) training is necessary to enable older people's effective participation and social integration, considering their heterogeneity (Consejo Estatal de las Personas Mayores, 2017). One of the strategy's objectives is to reduce the digital divide and support the lifelong learning of older people, and it includes the measure of promoting courses and actions aimed at the good use of ICT by older people. Therefore, the BOOMER project is significant not only in Spain but also in the European Union as a whole, to tackle this problem.

After conducting research on the subject in Spain, it has become apparent that there is a necessity to develop training programs for older individuals in the following areas:

- Information literacy: The ability to navigate the internet, find and evaluate information, and avoid misinformation is crucial for older people. In Spain, among older individuals who use the internet, 80.8% use it for staying informed (UDP, 2021).
- Communication and collaboration: Digital communication is essential for avoiding social isolation, with 85.1% of older Spaniards who use the internet exchanging messages with family and friends via WhatsApp (UDP, 2021). Therefore, older individuals should learn how to manage their digital identity, share multimedia content, and other relevant skills.
- Safety: When using electronic devices, one of the primary risks is fraud and scams. Phishing is among the most common cyber scams in Spain (Telefónica, 2022); thus, older people should learn how to avoid such scams and keep their confidential information secure.
- Problem solving: Sometimes, not all training needs can be met, and it is essential to teach individuals to be self-sufficient and to solve problems in a simple manner. Consequently, one of the most crucial areas of training involves solving small technical issues, using technologies creatively, and knowing how to find a solution to any problems that may arise.

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After analyzing the best practices against digital isolation of the elderly in Spain, three initiatives have been identified as successful. First, the Senior Experience



(Experiencia Senior) initiative by the National Institute of Cybersecurity (INCIBE) aims to enhance the digital skills of individuals over the age of 60 by providing open training materials and encouraging young people to volunteer as digital training assistants. Second, the Digital Rebirth (Renacer Digital) program by the Telefónica Foundation provides volunteers with training materials for 50-minute sessions aimed at teaching the elderly how to use the basic functions of a smartphone and promoting their digital autonomy. Third, the ICT Training +55 (CapacitaTIC +55) project focuses on training individuals over the age of 55 to search for employment through the internet, improving their digital and job-related skills.

In summary, Spain ranks mid-range in seniors with basic digital skills compared to other European countries. Many elderly Spaniards have struggled to carry out procedures online since the pandemic began. The goal of the Digital Spain 2026 agenda is for 80% of the population to have basic digital skills by 2025. While the public sector has plans and strategies for improving digital skills among the elderly, there is a lack of effective training in both public and private sectors, and much of the existing training is unknown to the population.

### 3.4. Croatia

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This section focuses on Croatia's efforts to promote digital literacy among older adults, with a particular emphasis on identifying the successes and failures of the country's policies and programs. Through an analysis of various strategic documents, educational programs, and initiatives, the report highlights the importance of digital literacy in reducing the digital divide and expanding access to digital services for older people in Croatia.

#### *3.4.1. Croatian Population and Digital Divide*

Croatia has a population of approximately 4 million people, with a median age of 44 years. Croatia's population is aging rapidly, with one of the highest median ages in Europe. The demographic changes since the 1960s have led to continuous depopulation, emigration, and aging of the population. As the world experiences a growing trend of aging populations and the rapid development of technology, the concept of smart aging (Stojanović, Štambuk and Vejmelka, 2020) becomes increasingly relevant. This refers to the use of innovative technologies by older individuals to enhance their quality of life, improve health status, promote independent living, and effectively prevent and treat illnesses.



The Eurostat report "Ageing Europe" (2020) highlights the digital divide among older people in EU countries. Croatia, Bulgaria, and Greece had the highest proportion of 65–74-year-olds who had never used a computer. Participation in education and training was higher for women than men, except in four EU countries including Croatia. In 2019, 43% of the EU population aged 65 to 74 did not use the internet in the preceding three months. The Eurostat Ageing Europe 2021 Report shows that only 37% of the population aged 65-74 in Croatia participated in social networks or shopped online in 2020, and 12% had above basic digital skills compared to 24% in the EU.

Nekić, Tucak Junaković, and Ambrosi-Randić (2016) conducted a study on the usage of the internet among people over 60 in Croatia, and its impact on their perception of successful aging. The study involved 295 participants from different counties and found that 40% of older people use the internet once a week on average, primarily for reading news, communication with family and friends, and those who use the internet perceive themselves as younger, are more educated, have better physical and mental health, and are more successful at adapting to the changes that come with aging.

According to Bracanović and Robida (2014), the main reason why older people in Croatia do not use modern information and communication technologies is due to their lack of knowledge and confidence in using them. Therefore, organizing courses and lectures on the use of these technologies is crucial to help bridge this knowledge gap and increase their confidence.

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Telebuh et al. (2016) also found low usage of the internet and online social networks among older people, which can be attributed to reasons such as insufficient knowledge about modern technology, poor economic conditions among the elderly in Croatia, and lack of accessibility or availability of educational programs. These findings highlight the importance of improving educational programs for older people, which would enable them to participate more actively in social activities and play a more significant role in society.

#### *3.4.2. Strategic Documents and Digital Literacy Initiatives*

Several strategic documents at the Republic of Croatia level address the issue of digital skills, competencies, literacy, and inclusion of older people. The e-Croatia 2020 Strategy, launched in 2017, outlines the progress of computerization and e-services in the public sector, and sets goals for further development in alignment with the Digital Agenda for Europe. The Strategy highlights the importance of including vulnerable groups, such as the elderly, in the use of



electronic services by providing information about accessing these services and public information through information and communication technology, implementing digital literacy programs, and targeted educational programs, and encouraging and motivating these groups to use technology. Furthermore, it stresses that if older people are not included in modern communication and information flows, the digital gap will only widen, leaving them at greater risk of being left behind.

The Strategy for Combating Poverty and Social Exclusion in the Republic of Croatia (2014-2020) was introduced in 2014 as a fundamental document aimed at facilitating a comprehensive and collaborative approach among all relevant stakeholders in addressing the issues of poverty and social exclusion. The strategy prioritizes serving older individuals, particularly those aged 65 and above, who are not only the age group with the lowest income but also at the highest risk of social exclusion. Among the key strategic activities outlined in the document is enhancing the quality of life for older people and expanding community services, such as involving them in lifelong learning programs.

The National Recovery and Resilience Plan 2021-2026 (Vlada RH, 2021b) emphasizes the impact of the pandemic on the elderly as a significant challenge. To address the ongoing effects of the pandemic on society, the plan recognizes the crucial role of the government in reducing poverty and preventing social exclusion while expanding social services for vulnerable groups. In addition, the plan emphasizes the need for targeted education and training measures to improve the digital skills of specific user groups, including older individuals, as part of the digital transformation and efforts to promote gender equality and equal opportunities for all.

The significance of ensuring a decent and active life for older citizens is emphasized in The National Development Strategy of the Republic of Croatia until 2030 (Vlada Republike Hrvatske, 2021a). The strategy aims to support the Coalition for Digital Skills and Jobs in Europe by prioritizing digital literacy for all citizens through strategic initiatives at all levels of Croatian society. The objectives include improving access to quality adult education programs for digital literacy and increasing the level of basic and advanced digital literacy to enable active participation in the digital society and economy. These strategic documents recognize the importance of reducing the digital divide among older people, expanding their access to digital services in the community, and enhancing their overall quality of life through digital literacy. However, the limited number of strategic policy documents addressing this issue is a serious limitation, as a



comprehensive and sustainable strategic policy framework is crucial for promoting digital literacy among older people.

There are three main directions in digital literacy programs for older people. The first involves non-formal education provided by Third Age Universities. The second comprises digital literacy workshops organized by seniors' associations, libraries, and other institutions. The third approach involves the development of digital skills and competencies through various European projects that aim to enhance the quality of life of older people and encourage their active participation in social activities and broader social engagement.

The Public Open University Zagreb (POUZ) is the largest institution for adult education in Croatia, offering over 250 educational programs with approximately 3,000 students per year. The Third Age University program, a part of POUZ, is focused on providing non-formal education to seniors, and offers a variety of courses including foreign languages, digital skills, history, art, health and other topics. Digital skills training for seniors is provided through a series of IT workshops, consisting of four semesters, starting with Computer Science 1, followed by Computer Science 2, Computer Science 3, and finally Advanced Computer Science. Additionally, courses such as Smart Phones and Digital Literacy are also available. The Smart Phones course teaches seniors about the features and capabilities of smart phones, with an emphasis on communicating through modern tools like Viber and WhatsApp, as well as safe Internet browsing and downloading applications for free. The Digital Literacy course teaches seniors how to obtain important documents such as birth certificates and certificates of residence, apply for passports or driver's licenses from the comfort of their homes, and more. The Third Age University program is open to all individuals, including high school students and those in their third age, who want to improve their skills and professional training.

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The University for the Third Age in Rijeka, launched in collaboration with the City of Rijeka in 2009, focuses on improving the quality of life, mental health, social inclusion, and general motivation of citizens over 55 in the Primorje-Gorski Kotar County who hold a high school or university degree. This informal educational institution provides programs that allow seniors to gain new knowledge and link it to their life experiences. While the University of Rijeka has implemented over 50 programs in a variety of fields, such as health, nutrition, personal finance, art, culture, history, and biotechnology, among others, no programs have been developed to improve the digital skills and competencies of older adults.

Digital literacy workshops for older people are available in various institutions such as seniors' associations, libraries, and other organizations, in addition to the



Third Age University programs. City libraries across the country often hold occasional or regular digital literacy workshops. Zagreb City Libraries offer free-of-charge workshops for older people as part of the 65 plus program, which cover the basics of working on a computer and navigating Web 2.0 safely. Participants attend the workshops twice a week for half an hour. The City and University Library in Osijek also conducted digital literacy workshops for older people. According to research by Lukačević, Radmilović, and Balog (2018), after completing the workshops, participants reported improved success in using information and communication technology, such as finding information, communicating via Skype, and performing work. Furthermore, respondents showed higher levels of self-confidence, independence, and self-esteem, and lower anxiety about new technologies. Learning about communication options using new technologies, such as e-mail and Skype, can also reduce feelings of exclusion and isolation, and help connect with distant friends and relatives.

A different way to enhance digital skills among the elderly is through participation in various European projects such as Erasmus+, European Social Fund and similar initiatives. These projects aim to reduce the digital literacy gap among the elderly, promote key digital skills, facilitate access to digital education for citizens over 60, enhance the competencies and skills of the older population, and prevent social isolation. These projects primarily target older individuals and aim to foster intergenerational connections by developing, strengthening, and maintaining interaction between different age groups. This way, these initiatives promote better coexistence among generations and a positive view of aging. Participating in lifelong learning programs designed for the elderly allows them to learn and acquire new knowledge, which supports cognitive skill development, fosters social connections, increases self-esteem, and leads to better quality of life for seniors. Several examples of such projects include the Erasmus+ project proADAS (Promoting of Active Digital Ageing Skills), the European Social Fund Project Fulfil Your Golden Age, and the European Social Fund Project United Generations. The proADAS initiative focuses specifically on active digital aging skills, while the latter two projects cover a range of activities that promote intergenerational relationships and social inclusion of vulnerable groups, including digital skills training.

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Efforts are being made to develop digital skills and competencies of older people through non-formal education, workshops, and European projects. However, digital literacy programs need to cover more topics such as online safety, problem-solving, digital identity management, and online behaviors to ensure a more comprehensive education. The development of digital literacy among older people in Croatia is still in its early stages, with limited policy documents and





scientific articles on the topic. There are few studies in local academic journals, making it an under-researched area. An assessment of success and failure factors is needed, along with recommendations for improvement.

The following factors have contributed to the success of digital literacy development for older adults:

- Recognition of digital literacy's importance in strategic documents to narrow the digital divide and increase access to digital services for seniors.
- Non-formal education programs provided by Third Age University, including workshops on digital skills development.
- Additional efforts by senior associations, libraries, and institutions hosting workshops on digital literacy for older adults.
- Participation in European projects like Erasmus+ and ESF that aim to address the digital skills gap among older adults.

The following are the factors that have been identified as contributing to the failure of digital literacy development among older people in Croatia:

- The lack of a formal policy framework dedicated to the development of digital skills among the elderly, with only a few policy documents addressing the issue indirectly.
- The limited research on the digital skills of older people in Croatia, with few studies published in national journals.
- Insufficient non-formal educational programs on digital skills for the elderly, with a need for more programs covering a wider range of topics.
- A lack of prioritization for digital skills and competency development programs in the Third Age University's curriculum.
- Occasional, rather than regular, digital literacy workshops organized by seniors' associations, libraries, or other institutions.
- A lack of European funding opportunities dedicated to digital literacy development among older people, with few identified projects addressing the issue directly or indirectly.

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The following recommendations have been identified:

- Older people in Croatia should be supported in developing their digital literacy through the implementation of educational programs that cover basic and advanced digital skills, which would enable them to actively participate in the digital society.
- To better understand the digital skills and competencies of older people in Croatia, it is important to conduct comprehensive surveys that can inform the creation of tailored educational content on digital literacy. This should

include a focus on important topics such as online safety, problem solving, digital identity management, and online behaviors.

- Collaborations with international partners should be pursued to support the development of digital skills and competencies among older people in Croatia, as this can enable knowledge sharing and benefit various stakeholders.

The analysis of Croatia's case shows that the development of digital literacy among older people is still in its early stages, and there are limited policy documents and research addressing this issue. However, non-formal education programs and digital literacy workshops organized by senior associations and libraries have been identified as part of efforts to promote digital literacy among older adults. Additionally, several European projects aim to address the gap between the older population and digital literacy. The analysis suggests that more comprehensive policies and programs, as well as research, are needed to promote digital literacy among older people in Croatia.

### 3.5. Key Takeaways from Country Reports

After examining the various examples of digital literacy programs for older adults in Germany, Italy, Spain, and Croatia, several key takeaways have emerged. These takeaways can be useful for policymakers, educators, and other stakeholders who are interested in promoting digital inclusion among the aging population. While each country's experience is unique, there are some common themes that can be drawn from these examples, including the importance of policy frameworks, the need for tailored and comprehensive digital skills training, and the role of international collaboration in promoting digital literacy. By understanding these key takeaways, stakeholders can develop effective strategies to address the digital divide and ensure that older adults are able to participate fully in the digital society.

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Germany:

- Germany has a well-established and comprehensive policy framework to promote digital literacy among older adults, which includes specific targets, measures, and funding mechanisms.
- The country has a strong focus on intergenerational learning and the involvement of older people in the design and implementation of digital literacy programs.

- The German case also highlights the importance of involving multiple stakeholders, including government, academia, civil society, and the private sector, in promoting digital inclusion.

## Italy:

- Italy has a decentralized approach to digital inclusion, with regional and local authorities playing a key role in promoting digital literacy among older adults.
- The country's policy framework emphasizes the need for digital skills development to be integrated into a lifelong learning approach and promotes partnerships between public and private stakeholders to achieve this goal.
- Italy's experience also highlights the importance of addressing specific barriers to digital inclusion, such as lack of access to ICT infrastructure and services, and low levels of digital confidence among older people.

## Spain:

- Spain has a relatively strong policy framework for promoting digital literacy among older adults, which includes specific initiatives targeting this population.
- The country's approach emphasizes the importance of non-formal education and community-based approaches to digital skills development, and involves a range of stakeholders, including public institutions, civil society organizations, and the private sector.
- Spain's case also highlights the potential of ICTs to enhance social participation and well-being among older adults, as well as the need to address issues of social exclusion and inequality.

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## Croatia:

- Croatia's policy framework for promoting digital literacy among older adults is relatively weak, with limited attention paid to this issue in strategic documents.
- The country's experience highlights the importance of comprehensive surveys and research to assess the level of digital skills and competencies among older adults, and to inform the design of tailored educational content.
- Croatia's case also underscores the need for expanded international collaborations to promote digital inclusion, and for a wider range of digital



skills to be covered in educational programs, including topics such as online safety, problem solving, and digital identity management.

Overall, these four countries demonstrate a range of approaches to promoting digital literacy among older adults, with varying levels of government support, resources, and research. However, all four countries highlight the importance of digital literacy to combat social isolation, promote social inclusion, and enable older adults to participate more fully in today's digital society.



#### 4. OVERVIEW OF DIGITAL SKILLS EDUCATION FOR THE ELDERLY

Qualitative surveys were conducted to gather information about the experiences of education providers and seniors in relation to digital skills education. The survey was designed to be open-ended, allowing respondents to share their thoughts and experiences freely. The survey questions were developed based on the objectives of the project and were focused on gathering information about the following:

- The types of digital skills education currently available to seniors,
- The effectiveness of current digital skills education programs for seniors,
- The interest of seniors in acquiring digital skills,
- The barriers to accessing digital skills education for seniors,
- Suggestions for improving digital skills education programs for seniors.

The surveys were distributed to associations of seniors and retirees, and the respondents were given the option to complete them in the preferred form. The survey responses were collected and analyzed to identify common themes and insights. The data collected from the surveys was used to inform the development of digital skills education programs for seniors as part of the project.

Different partners of the project used various methods to gather information on digital education for the elderly population in different countries. In Germany, dialogo conducted interviews with two organizations that specialize in adult education and support for retirees boomers. IDP European Consultant conducted an interview with IAL FVG, a prominent organization providing education and training services, including digital education, to the elderly population with over 50 years of experience in Italy. Internet Web Solutions conducted interviews with three organizations that focus on improving the lives of elderly individuals in Spain. IHF asbl conducted four in-depth interviews with organizations from different countries on a European level to gather their perspectives on digital education for the elderly population. To gain insight into the perspective of pensioners in Croatia, a survey was conducted to gather information on their views regarding the acquisition of digital skills, which was a slightly different approach compared to other countries.

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##### 4.1. Methodology of Qualitative Surveys

The in-depth interviews were conducted either in-person or through online channels such as email or video calls. The questions asked were primarily open-ended and structured to ensure that all partners provided information on specific issues related to the project. However, partners were allowed to include



additional questions they found relevant. The interviews followed a semi-structured format, where the questions were provided in advance, but the respondents were allowed to expand on their answers and provide additional information as they saw fit. The questions served as a guideline to ensure that all relevant topics were covered, but the conversation was allowed to flow freely as well. The partners ensured that they interviewed the most relevant associations and institutions involved in providing digital education and support to the elderly and retired population.

At the outset of each interview, the interviewees were informed that the purpose of the interview is to gather information for the "Booming digital literacy skills among elderly population" project, which is being funded by the Erasmus+ Program (KA2 - Cooperation for innovation and exchange of good practices, KA220-ADU - Cooperation partnerships in adult education). The project involves a partnership of 8 institutions with expertise in various aspects of adult education and assessing the needs of seniors and aims to address the pressing need across Europe to enhance seniors' digital competencies quickly and effectively. The interviewees were assured that their responses would remain anonymous and would be used solely for research purposes in the project. They were also requested to provide truthful answers. Following an introduction about the project and its funding through the Erasmus+ program, the interviews proceeded with the following questions:

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- Can you briefly describe what your organization does? What kind of experience do you have with the elderly?
- Have you ever conducted education programs for the elderly? If so, what kind?
- Have you so far conducted an education program for the elderly in the field of digital technologies so far? If so, how do you rate the interest of the participants in that topic?
- How did you conduct such trainings (offline or online)? What difficulties did you encounter in the organization? If you conducted programs online, how do you rate the availability of information and communication technologies of the participants?
- Can you assign grades from 1 to 6 for how relevant you think the following reason is for participants to participate in such educations (1 being the least relevant, and 6 the most relevant):

REASON	1-6
Independence	

Social contacts	
Staying active	
Hobby	
Digital support	
External pressure (e.g., children and grandchildren)	

- Can you describe what such programs looked like? What literature and other materials did you use? Did you use audiovisual materials? If possible, could you make these materials available to us?
- Are you interested in conducting further education of this type?
- Which institutions and in what way could help you to conduct more such educations in the future?
- How do you assess the representation of this topic in our society? In what way do you think your institution can further help in this?

The approach taken by the Croatian survey was slightly different from other countries, as it aimed to gather information on the views of Croatian pensioners regarding the acquisition of digital skills. The survey covered various aspects of computer use, including basic tasks such as sending emails and using word processing software, as well as more advanced tasks like programming and troubleshooting. The questions aimed to assess the overall level of comfort and competence when it came to using computers and technology. Additionally, demographic questions were included in the survey to provide a more complete picture of the participants' backgrounds and experiences.

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The survey also explored the attitudes and experiences of Croatian pensioners with regard to using the internet and digital media. The questions covered a range of topics, including their level of comfort when using the internet, their ability to navigate online content independently, and the level of support they received from their social network when using digital media. The purpose of these questions was to gain insight into the participants' relationship with technology and the internet, as well as the role that social networks played in shaping their experiences and attitudes towards digital media. The following questions were used:

- Demographic questions (age group, gender, county, type of settlement)
- Could you please specify any difficulties that you have faced or are currently facing while using computer equipment and various applications? This could include issues with hardware, software, connectivity, or any other obstacles that you have encountered during your computer usage.



- Is there any education available for seniors in your area on the use of computers and smart devices? If so, who provides this education?
- Are you interested in attending free computer courses that would be organized in your area?
- How often do you use the internet? If you use the internet, what is the device you mostly use for access? And what kind of content have you accessed on the internet in the past three months?
- In your opinion, are websites, social media platforms, and other similar digital media adapted to suit the needs of elderly people?
- Using a scale of 1 to 7, where 1 means "strongly disagree" and 7 means "strongly agree," indicate your level of agreement with the given statements:

EFFICACY OF INDEPENDENT COMPUTER USE
1. You feel comfortable using internet content independently.
2. You can use internet content independently.
3. You feel comfortable using internet content independently even when there is no one around to tell you how to use it.
SOCIAL INFLUENCE
4. Your close family thinks you should use internet content.
5. Your other relatives think you should use internet content.
6. Your friends think you should use internet content.
SOCIAL SUPPORT
7. You have someone who will help you solve problems related to using internet content.
8. You have friends or family members who will help you use internet content.
9. You have friends or family members who will help you solve problems related to using internet content.
10. People in your environment support you when you have difficulties using internet content.

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The survey findings will provide valuable insights that can be extrapolated to draw relevant conclusions and inform policies beyond the country of origin, allowing for a broader understanding of the phenomena studied and potential generalizations that could be applicable to other contexts and populations.

## **4.2. Insights from Germany's Experience**

For the project, d-ialogo conducted interviews with two organizations in Germany that specialize in adult education and support for retirees boomers.

### *4.2.1. Change Maker 50plus*

Change Maker 50plus is a network that focuses on topics relevant to the 50+ and 60+ age groups. The aim is to create formats that cater to the target group and one of the primary objectives is "digitalization for older people." The network provides an exchange platform for experts, scientists, and the target group through short 1–2-hour sessions. The organization has extensive experience with older employees, allowing them to cater to the special competencies and learning styles of this group. The definition of older employees for Change Maker 50plus includes individuals who are 60 years old or above, and those over 50 are also included in networking activities.

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The organization offers monthly online events for employees from several companies, with a focus on practical digitalization topics such as Outlook, Teams, and others. The events are conducted in German and have seen an exceptional response, with 25-30 participants per event. The online meetings have been successful, with participants equipped to participate from a technical standpoint.

The participants have various reasons for participating in the organization's activities, with independence and pressure from employers being the most important factors for the majority. Social contacts and hobbies are also important reasons for joining, while digital support and external pressure from family members have a slightly lower priority.

Change Maker 50plus designed and conducted events on the topic of digitalization for older people in a practical manner based on input from experts in the field of the elderly and digitalization as well as academics. Presentations used during the events are for internal use only. The network plans to continue developing events on the topic of digitalization for older people in the future and engage more experts as trainers. They plan to involve more companies with more participants in the network to increase the level of dissemination.



The network aims to increase acceptance of the topic of digitalization for older people, which is currently only slightly present in society. While demographic change and the increasing number of older citizens are topics with higher acceptance, digitalization is given little consideration in learning programs, despite its increasing importance in daily life.

Change Maker 50plus aims to involve more companies with more participants in the network to increase the level of dissemination. The network targets older employees in companies and aims to qualify this group as the proportion of older employees continues to increase. The organization emphasizes the need for qualifications in IT basics such as Excel, Outlook, Microsoft 365, communication platforms like Teams, Skype, and Zoom, as well as social networking like Facebook and LinkedIn. According to Change Maker 50plus, the organization is currently at the very beginning of addressing the need for qualifications for older people in digitalization.

The network aims to increase acceptance of the topic of digitalization for older people, which is currently only slightly present in society. While demographic change and the increasing number of older citizens are topics with higher acceptance, digitalization is given little consideration in learning programs, despite its increasing importance in daily life. Change Maker 50plus suggests that appropriately qualified and sensitized lecturers are crucial for the success of qualifications in the field of digitalization for older people. In addition, participants must have confidence in the network and be curious about the topic. Finally, it is important that learning takes place without sanctions.

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#### *4.2.2. The Demography Network (Das Demographie Netzwerk, ddn)*

The Demography Network (ddn) is an organization that aims to generate ideas and solutions for the challenges of demographic change. They work with partners from business, politics, and science to bundle synergies in innovative events, publications, and practical projects. The network understands demographic change as a collective task, and they use cross-industry exchange in specialized working groups, regional networks, and events as a central instrument. ddn has extensive experience with older workers, as they actively involve them in events, seminars, and formats. Since ddn is a network of companies, the group of older employees represents the high importance of this group in companies.

For ddn, age is not defined by a fixed number. The conditions for each employee are different. However, the network is aware of demographic change and recognizes that it is relevant for all generations equally. The network offers a six-



month qualification program as a demography pilot. This program is aimed at older employees, interested citizens, consultants, and representatives of other generations. Thematic workshops are offered on a selective basis, and research activities on digital technologies for older people are carried out. The interest in these research activities and qualifications is high.

The exchange formats are primarily online, with the qualification being 80% online and 20% offline. The research-based activities include e-learning elements only. However, it was noted that face-to-face exchanges are essential, regardless of the efficiency of online learning. All participants have access to the necessary technologies and materials for communication. The interviewees from ddn identified staying active, social connections, and employer expectations as the primary reasons for participation.

The demography pilot qualification program provides extensive presentations, tools, Excel tables, and worksheets for participants of the training. However, the network plans to offer further training events on the topic if there is a need from its members. In addition, further partners will be involved in the work of ddn for qualification purposes.

As the generation 50+ becomes a focus due to the shortage of skilled workers, many companies are developing strategies to keep older employees fit and motivated for longer. The role of the elderly in the companies is in the network's focus, and the work and importance of qualification strongly depend on occupational fields. Qualifications must be as individual as possible and tailored to the needs of the respective company. Soft skills and elements of self-reflection are also important.

The network believes that learning must develop more into lifelong learning, where digitalization qualification for older people plays an important role. Qualification should not be a question of age, and the network aims to contribute to this topic in society by offering training and involving partners in its work.

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#### **4.3. An Italian Example - Innovazione Apprendimento Lavoro Friuli Venezia Giulia (IAL FVG)**

IDP European Consultant conducted an interview with IAL FVG, a leading organization in Italy that provides education and training services, including digital education to elderly population, with over 50 years of experience. The primary objective of the interview was to understand IAL FVG's experience with educating seniors on digital skills. With a focus on innovation and technology, IAL FVG is well-positioned to provide valuable insights into the challenges and



opportunities associated with digital skills education. IAL FVG's goal is to empower human resources through education and training to increase their knowledge and skills, and its provision of training, research, guidance, and counseling in Friuli Venezia Giulia, Italy, as well as at the level of the European Union.

IAL FVG has not conducted education programs exclusively for the elderly, but they have provided general and specific training with a view to maintaining the active role of these individuals in society. One of the topics covered was digital skills, and the organization reported that the elderly target group proved to be very interested and active indeed. The trainings were conducted offline with the support of short expository moments supported by online training pills. However, the organization encountered some difficulties in containing the participants' enthusiasm and making the lessons clearer. Overall, the participants seemed to be motivated to learn digital skills not only for practical reasons, but also for social and personal reasons.

They have conducted education programs for seniors focusing on digital skills, and they have used audio-visual materials developed in Erasmus+ KA2 projects and free resources found on the web. The materials used were specifically designed for the target group of seniors, and the organization is open to sharing them or signposting them for others. They gave grades from 1 to 6 on the relevance of various reasons for participants to take part in education programs, with social contacts, staying active, hobby, and digital support receiving high scores. External pressure from children and grandchildren received a lower score.

IAL FVG has expressed interest in conducting further education of this type and believes that companies specializing in audio-visual material development and experts in media-profiling content could help them in this endeavor. They view the digital training of seniors as a crucial topic in our society and believe that their organization can further help in supporting this target group through their training programs.

Overall, IAL FVG's experience and commitment to providing education programs for seniors, particularly in the areas of digital skills, demonstrate their recognition of the importance of this topic in our society. By continuing to offer such programs and collaborating with experts in the field, they can further help in addressing the digital literacy needs of the senior population.

#### **4.4. Enhancing Digital Skills of Seniors in Spain**



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Internet Web Solutions conducted interviews with three organizations in Malaga that focus on improving the lives of elderly individuals. The first organization is a local entity that operates throughout Malaga and has branches in each district to reach as many people as possible. Its main objective is to provide care for the elderly, improve their quality of life, and promote their participation in activities that foster interpersonal relationships and a sense of belonging. It achieves this through a range of activities such as trips, board games, and workshops on topics like computers, handicrafts, and ballroom dancing.

The second organization is a national and international initiative that aims to promote cooperation and solidarity services among community members to enhance their quality of life. It achieves this by giving greater visibility and value to personal tasks, changing attitudes towards domestic work, and fostering cooperation between members of the same community. It offers activities such as hiking, painting, and computer courses.

The third organization is a non-profit association that focuses on active ageing, intergenerational experiences, and socio-professional guidance for young people in the province of Malaga. They work with both young and old people, recognizing the enrichment that intergenerational relations bring. Their goals are to contribute to the integral development of people and promote balance in the natural and social environment. They are also specialized in new technologies and digital literacy for the elderly and people with functional diversity.

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The interviews conducted revealed information about training programs for seniors, their interest in such programs, and their reasons for participating. The interviewed entities provide general culture classes and face-to-face computer courses for the elderly. These courses rely on teacher-led instruction, and in some cases, volunteers provide instruction without many resources. Some courses are taught by young people, who teach the elderly how to use mobile phones and computers, and students take notes to study at home.

One of the associations interviewed has a Digital Literacy Plan for the Elderly, which offers weekly group workshops for people over 60 years old to improve their digital skills and functionality in daily life. The workshops are held in different centers to accommodate attendees' locations and include face-to-face and online training, as well as individualized tutorials. However, face-to-face courses are preferred as they allow seniors to interact with each other. Online courses are less attended due to lack of digital literacy. The association has also organized a project called "Digital Training for the Management of Associations for the Elderly" that aims to train board members of elderly associations in the municipality of Malaga in digital skills such as obtaining and handling digital





certificates, using electronic offices of public bodies, and digitizing certain processes of the organization.

The interviews with the three organizations revealed that there is a common interest among the elderly participants in acquiring new knowledge and adapting to digital technologies. The main reasons for their participation were independence, social contacts, and staying active, while external pressure was the least valued factor. The seniors who receive training face difficulties due to lack of prior knowledge and resources, especially the lack of regular training courses, according to the interviewees. Time and perseverance were mentioned as problems by many of them, as the courses given occasionally and for only a few hours do not allow them to acquire all the information they need. Additionally, the lack of practice, as most seniors do not have a computer at home, and fear of using the technology alone contribute to disillusionment and frustration.

The interviewees highlighted the importance of training for older people to learn how to use digital tools that are essential for daily life. However, the training programs have shortcomings and problems, such as the lack of prior knowledge and resources, time and perseverance, and the fear of using technology. The interviewees emphasized the need for adaptable training to different devices such as smartphones or tablets, as older people usually do not have personal computers and require training programs available over time. Overall, the digital transformation places a considerable burden on older individuals, who are required to put in significant effort to adapt to the changes and learn to use the digital tools essential to daily life. This effort may require reliance on others for assistance. Additionally, the interviewees emphasize the importance of increasing awareness and support for the elderly population's digital literacy, suggesting that everyone has a role to play in reinforcing their skills for the future.

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#### **4.5. Selected European Cases**

IHF asbl conducted four in-depth interviews with organizations across the EU to gather their perspectives on digital education for the elderly population. The following paragraphs present the results of these interviews.

##### *4.5.1. Pistes Solidaires - France*

Pistes Solidaires is an NGO based in southwest France that focuses on youth mobility, socio-educational projects, and adult education, including intergenerational and digital competence training for seniors. The organization has experience using intergenerational and digital training methods, and the



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interest among participants is high. They conducted a successful pilot testing of the DISK platform, which received positive feedback from seniors. The most relevant reasons for senior participants to participate in digital education programs are independence, social contacts, and staying active, while hobbies, digital support, and external pressure are little less important. The organization has started a new project called CERV that focuses on digital competence with an intergenerational approach, and they work on Erasmus+ KA2 adult education. It is essential to differentiate between different age groups of seniors to identify the target groups of training. Younger seniors (55-65) are more familiar with the internet and require advanced training, while older seniors often need basic training as they have little to no knowledge of digital technologies.

#### *4.5.2. AINova - Slovakia*

AINova is a non-profit institute that provides competence and institutional development services and policy advice in the fields of European affairs and regional and local development. The organization offers specialized language courses in English for the elderly but has not conducted any digital skills education programs for seniors yet. During the Covid-19 pandemic, AINova offered their courses online but clients, especially the elderly, prefer face-to-face courses. The organization rates staying active as the most relevant reason for elderly participation, with hobby being the least relevant. AINova is interested in conducting further education of this type in the future and suggests fundraising from the Ministry of Investments, Regional Development and Informatization of the Slovak Republic, and Expertise from IT firms as institutions that could help in conducting such educations. There is a lot of discussion about the importance of digitalization and improvement of digital skills, and AINova has enough experience to prepare and offer appropriate courses for adults and seniors.

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#### *4.5.3. Community Development Institute (CDI) - North Macedonia*

The Community Development Institute (CDI) is a non-governmental and non-profit national association focused on sustainable development, education, and social services. Its strategic aims include lifelong learning, improvement of living conditions and standards of life, and online and ICT literacy and security. CDI uses various methods like workshops, seminars, conferences, publication of educational materials, production of audio and video educational materials, consultation and mentoring, and study trips and exchanges in implementing its program activities. It has conducted various programs, projects, and activities



covering more than half of the population in the Republic of North Macedonia, making it one of the leading civil society organizations at the national level.

They offer diverse e-platforms, open educational resources, and e-learning courses to address the needs and challenges of their target groups. CDI is also a verified VET provider offering training programs for occupations verified by the Centre for Adult Education and the Ministry of Education. They aim to promote active aging by encouraging seniors to adopt good practices in using digital tools and being safer online. The positive impact of their training includes improved interpersonal skills, direct access to training resources available online, increased competences in using digital tools, and increased inclusion and active aging through access to different digital materials available online.

CDI is working towards improving the digital skills and social inclusion of adults, particularly seniors and women. The DISK project aims to improve the cognitive capacity and health of seniors, while the S.O.S Creativity project aims to develop skills and competencies in adults to support creativity and exploit cultural offers and artistic content available online, while also increasing their awareness towards the potential risks of the internet. The AXESS project specifically targets women, with the goal of providing immediate and concrete training and educational resources to advance their digital competencies and skills for economic and social sustainability. As a founder of the Lifelong Learning network in North Macedonia, CDI is dedicated to addressing the needs and challenges of citizens of all ages and levels of education. To overcome the digital divide, elderly-friendly user interfaces, good learning materials, public internet access points, and computer literacy training are needed. The accessibility and functionality of hardware and software must also be improved. CDI's programs provide opportunities for people to access appropriate learning resources in ICT and digital literacy to promote social and digital inclusion.

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#### *4.5.4. Mathemagenesis - Greece*

Mathemagenesis specializes in digital training for adults and seniors through computer courses and sessions dedicated to specific themes. They have conducted educational programs on various topics such as memory training, cognitive skills, e-administration, ecology, and nutrition. They use open-source information and their knowledge in the digital and educational field to create good practice guides, informative manuals, and cognitive games that are available on their website. Mathemagenesis conducted offline trainings, providing participants with information and educational games that they could continue using at home. The main difficulty was time, as organizing workshops for many



seniors requires a significant amount of preparation and on-site organization. The participants in their programs were interested in the areas that were rarely addressed from seniors' perspectives. The organization's Erasmus+ project, called DISK, provided materials including good practice guides, informative manuals, and cognitive games. All these materials are available online on their website. They are interested in conducting further education of this type and would require collaboration with skilled organizations for creating new technologies and materials, as well as disseminating the materials on a European scale. They believe that there is a strong demand from seniors to be better informed on this topic, and they can help develop content adapted to seniors based on their experience in this field.

#### **4.6. A Survey of Croatian Pensioners**

The Croatian Pensioners' Association carried out a survey on a sample of 105 individuals, but due to missing data in some responses, only 90 complete responses were ultimately used for further analysis. Regarding the demographic data, the majority of pensioners in the sample were in the 70-74 age group, comprising 41% of the total sample, with the 65-69 age group following closely behind at 34%. Majority of the respondents were female, accounting for 61%, and in terms of their location, 23% lived in Croatia's capital city Zagreb, followed by the counties of Istria (8%) and Krapina-Zagorje (7%). The majority of the respondents lived in urban areas, accounting for 46%, followed by 36% living in suburban areas, while the rest resided in rural settlements.

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The most common difficulties faced by pensioners while using computer equipment and applications include a lack of knowledge about device usage (49%), not understanding certain functions due to them being in a foreign language (44%), and an excessive amount of distracting content (23%). Only 13% of the surveyed pensioners reported having no difficulties while using computer equipment and applications.

In response to the question of whether there is education available for seniors in their area on the use of computers and smart devices, 39% of the respondents answered in the affirmative, 31% said no, and 30% did not know. A remarkable 56% of respondents were not aware of who provides that education, while 10% indicated the Pensioners' Association and 8% indicated Public Open University Zagreb.

A total of 54% of the respondents expressed interest in attending some form of digital skills courses, with 36% interested in beginner courses and 19% in

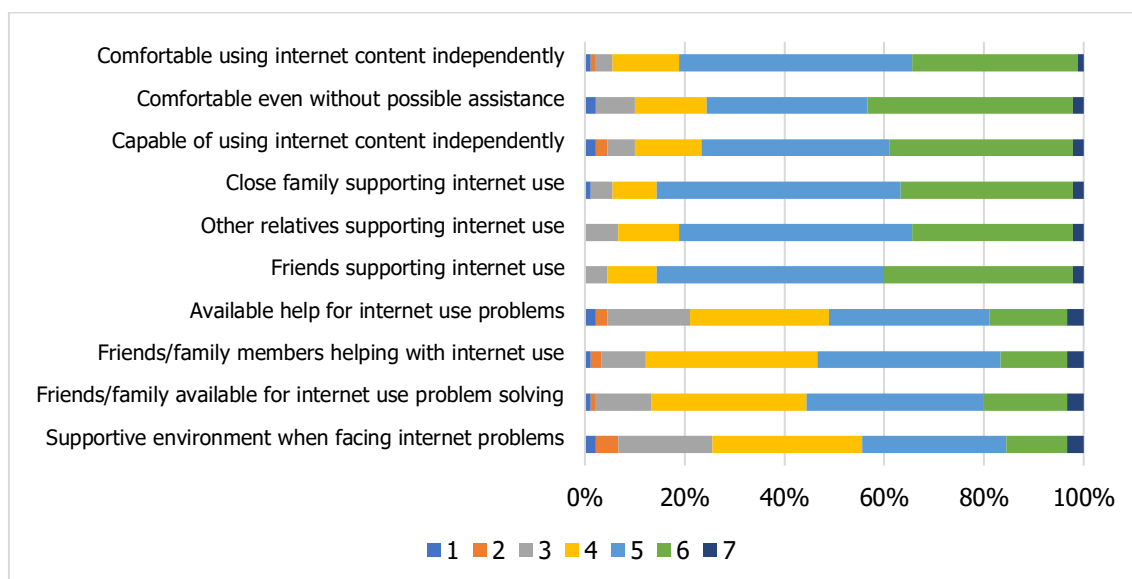


advanced courses, while 28% showed no interest and the remaining participants believed they had enough knowledge for their needs. Additionally, 84% of the respondents used the internet on a daily basis, mostly through their smartphones (63%) and desktop computers (20%).

During the last three months, the content that seniors used the internet for the most was news about everyday events (77%), followed by social media (71%) and communication with family and friends through email and messaging apps (58%). In terms of whether websites, social media platforms, and similar were adapted for seniors, 46% of respondents thought they were, while 30% were undecided on the matter.

In the final section of the survey, respondents were asked to rate their level of agreement with given statements on a scale of 1 to 7, with 1 indicating "strongly disagree" and 7 indicating "strongly agree". The results of this section are presented in Figure 11.

*Figure 11. Attitudes and experiences of Croatian pensioners regarding internet and digital media use*



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*Source: authors' survey*

When it comes to using internet content independently, 81% of the respondents feel comfortable doing so, while 6% do not. Furthermore, 76% of them believe they are capable of using internet content independently, while 10% do not share this belief. The majority of respondents, 77%, feel confident using internet content independently even if there is no one around to help them, while 10%

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do not. According to the survey, 86% of the respondents' close family members and 81% of distant relatives believe they should use internet content, and the same percentage applies to their friends. Additionally, 51% of respondents believe they have someone to help them solve problems related to using internet content, while 21% do not. Moreover, 53% have friends or family members who can help them use internet content, and 56% have friends or family members who can help them solve problems related to using internet content. Finally, 44% of the respondents feel they have a supportive environment when facing difficulties in using internet content, while almost a third remain undecided.

In summary, the survey results indicate that the majority of participants use the internet regularly, with smartphones and desktop computers being their preferred devices. The main purposes of their internet use are browsing news, social media, and communicating with family and friends. It is worth noting that most respondents feel confident and competent when using internet content independently, and they perceive support from their close and distant relatives and friends for their internet use. On the other hand, there are respondents who do not feel at ease using the internet independently and have doubts about their capability to use internet content without any help.

Overall, there seems to be a positive and supportive environment for pensioners' internet use, as the majority of respondents report having friends or family members who can help them with internet use and problem-solving. Nevertheless, it is important to address the concerns of those who feel less confident and may require more assistance to make sure that they can benefit from digital media and stay connected in today's increasingly digital world.

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## 5. CONCLUSION

The EU is experiencing a significant demographic shift towards an older population structure due to low birth rates and higher life expectancy. As of 2021, 20.8% of the population is aged 65 and over. While the elderly population in the EU saw a significant increase in internet usage due to the COVID-19 pandemic, they still have a decreasing rate of internet usage compared to younger age groups. As age increases, there is an exponential decrease in the percentage of individuals with minimum digital skills, although there has been a modest increase in digital skills acquisition due to the pandemic.

The elderly population in the EU faces several barriers to digital literacy, including lack of access to technology, limited training opportunities, low digital confidence, low trust in technology, and digital divide. However, the rise in digital literacy among the elderly population highlights the importance and necessity of digital skills in today's world. It is essential to empower older individuals with digital technologies and enhance digital literacy to ensure age-friendly and safe digital environments.

To promote digital literacy among the elderly population, continued efforts are needed to provide access to technology, training opportunities, and support to build digital confidence and trust. Digital literacy training is a policy priority to reduce the digital skills gap and empower older individuals. The BOOMER project aims to enhance digital literacy skills among the elderly population, with a focus on improving performance in all areas as per DigComp 2.2 framework, including Information and data literacy, Communication and collaboration, Digital content creation, Safety, and Problem solving.

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The European Digital Skills and Jobs Platform serves as a hub for digital skills initiatives in the EU, providing information, resources, and training opportunities for digital skills development. The European Commission has also initiated a structured dialogue with EU Member States as part of the Digital Decade strategy to improve digital skills through education. These initiatives and resources are crucial for older individuals to improve their digital skills for active and healthy aging, including social and economic participation. "The Digital Era? Also my Era!" publication emphasizes the need for a human-centered approach to digitalization that considers the needs of all individuals, particularly senior citizens.

This report not only delivers an overview of the current state of digital literacy among seniors in the EU and highlights the key findings of the study, but it also includes country reports on Spain, Italy, Germany, and Croatia. These country reports provide a deeper insight into the specific challenges and initiatives related to digital literacy among seniors in each country. By examining the unique





experiences and approaches of each country, this report offers a comprehensive understanding of the state of digital literacy among seniors in the EU. The insights from these country reports can also serve as a valuable resource for policymakers, educators, and other stakeholders looking to develop targeted initiatives to promote digital literacy among seniors in their respective countries.

Germany has a comprehensive policy framework in place to promote digital literacy among older adults, with a focus on intergenerational learning and involving older adults in the design and implementation of programs. Italy, on the other hand, has a decentralized approach to digital inclusion, emphasizing the integration of digital skills development into a lifelong learning approach and partnerships between public and private stakeholders.

Spain has a relatively strong policy framework for promoting digital literacy among older adults, with initiatives targeting this population and a focus on non-formal education and community-based approaches. Meanwhile, Croatia's policy framework is relatively weak, highlighting the need for comprehensive surveys and research to assess the level of digital skills and competencies among older adults and the importance of expanded international collaborations.

In addition to the country reports, in-depth interviews were conducted with adult education providers in Spain, Italy, and Germany to provide a more detailed understanding of the policies and initiatives in place to promote digital literacy among older adults in these countries. These interviews shed light on the specific challenges and opportunities faced by these providers in delivering effective digital skills training to older learners. The insights from these interviews provide valuable information on the best practices and approaches to promoting digital inclusion among the elderly population in Europe.

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In Germany, the aging population presents challenges for digitalization as older people are less likely to have digital skills. However, there is a growing interest among older people to learn digital skills, and various organizations and initiatives have been developed to support them. These initiatives include the development of a guide for teaching digital skills to seniors and the creation of senior citizens' advisory boards. Social participation is increasingly influenced by digital sovereignty, and older citizens need to acquire operating knowledge, orientation knowledge, and design knowledge.

The in-depth interview conducted in Italy highlights the challenges faced by the aging population, including uneven distribution and disparities in access to technology and services. The Italian government has launched various initiatives to enhance digital skills and eliminate disparities, including strengthening the existing network of Digital Facilitation Centers and creating new access points.





The interviews with three organizations in Spain revealed challenges faced by older individuals in adapting to digital technologies. Lack of prior knowledge and resources, occasional training courses, and fear of using technology alone contribute to disillusionment and frustration. The interviewees emphasized the significance of adaptable training programs for different devices, emphasizing the need to increase awareness and support for digital literacy among the elderly population.

The Croatian survey reveals that seniors are not only frequent users of the internet, but they also feel comfortable and capable of using internet content independently. This is a positive indication of their willingness to adapt to the ever-changing digital landscape. Moreover, with the majority of respondents reporting supportive close and distant relatives, as well as friends, there is a strong sense of community and intergenerational support in embracing technology. Overall, the findings of the survey suggest that many seniors are not only open to using digital media but are actively incorporating it into their daily lives.

In conclusion, promoting digital literacy among older adults is crucial for ensuring age-friendly and safe digital environments and for empowering older individuals with digital technologies. The country reports and in-depth interviews highlight the importance of involving multiple stakeholders, addressing specific barriers to digital inclusion, and tailoring educational content to the needs of older adults. At the EU level, continued efforts are needed to provide resources and training opportunities for digital skills development, with a human-centered approach that considers the needs of all individuals, particularly senior citizens. By promoting digital literacy among older adults, we can help bridge the digital divide and ensure that everyone can participate fully in today's digital world.

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