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IO1 Innovative methodology for educating and training adults from rural zone to improve their digital and ICT skills

Desk Research Report

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Abbreviations and Acronyms

Abbreviation	Full name
Acronym	Full name
EACEA	Education, Audiovisual and Culture Executive Agency
EC	European Commission
EU	European Union
GA	Grant Agreement
HEI	Higher Education Institution
ICT	Information and Communication Technologies
PC	Project Coordinator
WP	Work Package

1. Introduction

This document is carried out under the Erasmus+ No One Behind project which aims to improve the digital competences of adults living in rural areas, promoting their access to lifelong learning activities and motivating them to start learning, as well as connecting with individuals, groups and organizations willing to help more adults strengthen their digital skills.

This report represents, together with the Survey Analysis Report, an important basis for the development of the NO ONE BEHIND training and platform. The partners have carried out a desk research to provide relevant data regarding the level of digital penetration in their country.

The consortium of NO ONE BEHIND is composed of seven partners from six EU countries: Agentia pentru Dezvoltare Regionala Nord-Est - NERDA (Romania); EUROCREA MERCHANT SRL (Italy); INOVA+ - INNOVATION SERVICES, SA (Portugal); Asociatia de Dezvoltare Locala ECO LAND (Romania); AINTEK SYMVOULOI EPICHEIRISEON EFARMOGES YPSILIS TECHNOLOGIAS EKPAIDEFSI ANONYMI ETAIREIA (Greece); European E-learning Institute (Denmark); ATERMON B.V. (Netherlands).

The purpose of the present document is to compare the level of digital competences in the population of partners' countries.

At the beginning of the document, the partners provided relevant information about their organizations and some important demographic data of their countries. This provides a general view of the socio-economic conditions in each country, these data are essential to explain the level of penetration of the digital competences in partners countries.

The partners will provide information regarding digital competences among adults' population. In addition, the research aims to establish the extent to the gap in the level of digital competences between rural and urban areas in the partners' countries.

In the final part of the desk research, the partners have presented the most significant examples of best practices related to adult education at the national and European level.

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2.   Partner introduction as a part of the consortium and general aims

2.1 NORTH EAST REGIONAL DEVELOPMENT AGENCY (NERDA)

North-East RDA is a generator of economic and social development in the North-East Region. The agency develops strategies, attracts resources, identifies and implements financing programs and offers services for stimulating sustainable economic development, partnerships and entrepreneurial spirit.

The North-East Regional Development Agency, the first regional-type institution in the country established in 1999, is a non-governmental, non-profit making organization of public utility established based on Law 315 / 28 June 2004 concerning regional development in Romania.

Main activities:

- Regional planning and programming

- Management of regional development programs

- Urban Development

- Identification and implementation of international projects

The Regional Studies Centre was founded in 2010 by the North-East Regional Development Agency, in response to the evolution of the Romanian economic environment and the desire to satisfy the training needs of the staff within the organizations and partners with which we collaborate.

Objectives:

- To carry out professional training activities by providing CNFPA (National Council for Adult Vocational Training) certified courses and specialized training in the field of regional development.
- Assist and cooperate in the field of training with other national and international organizations involved in regional development and in complementary areas.
- Facilitating exchanges of information and practical experience through international training projects. Implementation of European Projects, mainly Erasmus+ on Key Action 2, in the field of Vocational Education and Training and Adults.

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Through this project NERDA aims at supporting adults and educators from Romanian's rural areas who are interested in improving their digital skills. Also, we will facilitate their access to lifelong learning activities and we will facilitate the connection of individuals, groups and organisations involved in the process of improving digital skills.

North-East RDA will reach the objectives by involving in the project the local target grups, like: adults from rural areas, adult educators (social workers, teachers and other professionals who work with adults), and also education centers and other organizations; public bodies active in local and regional development, decision-makers in the field of education.

2.2 Asociatia de Dezvoltare Locala ECO LAND

ADL ECO LAND is a non-governmental, autonomous and apolitical organization, with non-patrimonial purpose. ADL ECO LAND ADL was established in 2013 and it is located in ROMANIA, NEAMT County, Targu Neamt.

ADL ECO LAND aims to promote and develop the tourist potential and heritage of the area, traditional crafts, cultural, existing tourist attractions in Tîrgu Neamț and adjacent area by increasing the tourist flow, creating and developing tourist facilities and by ensuring a harmonious interaction between the tourism sector and social and environmental factors.

Tourism and cultural promotion activities - in the period 2013, 2014, 2015, 2016, 2017 in partnership with APDTN Valea Ozanei. The tourist promotion activities consisted in promoting the touristic and cultural objectives of Neamt county. At the same time, the ADL ECO LAND participated, as a collaborator, in the activities carried out by the Valea Ozana Association - within the Autumn Fair - 2016 edition, as well as within the Medieval Festival from Cetatea Neamtului - 2016 edition. There were activities to promote historical tourism - which focused on promoting historical objectives, both in the area of Targu Neamt, and in the entire area of Neamt County.

Main activities:

- In collaboration with the "Valea Ozanei" Association, activities were carried out to promote all historical tourist attractions - Neamt Fortress, "Ion Creanga" Memorial House, "Veronica Micle" Memorial House, "Mihail Sadoveanu" Memorial House "Mountain Hunters Monument, "Alexandru Vlahuta" Memorial House, etc.
- Realization of the tourist promotion and guidance application, together with all partners and collaborators, Bison Land 360 - bisonland.ro is the apogee of Neamt

county promotion in the online environment, once obtained by BISON LAND - a ecotourism destination title - status obtained so far only by three other areas in Romania (Mara-Cosău-Creasta Cocoșului, Țara Hațegului-Retezat and Zărnești-Piatra Craiului).

- Festival organization: "Iarmaroc in Targu Neamt - twinning with the legend – 2017", a large-scale project that continued the presentation of the local culinary tradition in the area of Neamt county. The results of the project "Iarmaroc in Tîrgu Neamț - twinning with the legend" - were: a traditional fair with roots in the ancient culture of the Romanian people, traditional artistic performances; promoting Romanian crafts and traditions; permanence of a cultural event at Tg. Neamț, for the promotion of Romanian cultural values.

ADL ECO LAND compiled the gastronomic recipes from Neamt County and edited and printed a book of traditional Romanian dishes: "100 years of the Great Union - 100 years of Local gastronomic history". These books are intended to arouse interest and use as guidance material for their perpetuation. The Cookbooks will be present in the accommodation facilities and will be a culinary guide for the students from the gastronomic profile classes of the "ION CREANGA" Technical College from Targu Neamt.

The events organized by ADL ECO LAND gather approximately 10,000 visitors annually. These festivals and events are a good opportunity to promote the cultural-gastronomic heritage, outlining the identity of the area. During 2016, 2017, 2018, ADL ECO LAND realized video materials to promote the customs, crafts and traditions of Neamt County.

The project activities will be resumed and extended to the community on the occasion of other profile events, assumed both by the community and by profile schools and NGOs, the association, the results being used to develop digital and improve digital skills, so necessary nowadays for the adult living in rural areas, for as long as possible.

The project strengthens a solid and efficient cooperation between the private sector of NGOs and public authorities and institutions, which will be a model of good practice, leading to improved policies to promote project-specific activities.

GENERAL AIM

As the digital transformation is moving ahead, the question of digital skills has become a societal challenge.

NO ONE BEHIND project represents a great opportunity to improve the quality of life of adults, giving them the chance to develop themselves or to develop their activities. ADL ECO LAND has supported the development of the local community since its inception.

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ADL ECO LAND understands very well that where adults are qualified to use digital technologies, companies are naturally much more likely to use them This challenge is relevant for all levels of education.

The distribution of questionnaires to educators brought to the fore a situation related to the online school that appeared with the Covid-19 Pandemic. Teachers face serious problems related to the inability of parents of students to work with computers, to browse or to create simple e-mail accounts. By implementing the project at the level of adults in rural areas, a powerful tool is created that can be used to overcome this situation.

The main aim of ADL ECO LAND, as a partner in NO OHNE BEHIND project, is to provide support for adults living in rural areas to be equipped with the right skills in order use of the new possibilities and to improve the quality of their lives and along with it, the community itself.

2.3 INOVA+ - INNOVATION SERVICES, SA

INOVA+ is a Portuguese company with wide experience in the promotion and management of international projects of Innovation, Education & Training and Research & Technological Development.

The company's mission is to provide the knowledge, management capacity, partnerships and technical and financial support needed to ensure successful innovation projects to its customers. Counting with more than 20 years of experience, INOVA+ employs a highly qualified team of more than 85 consultants based in offices all over Europe: Matosinhos (headquarters), Lisbon, Brussels, Heidelberg and Warsaw. INOVA+ is also linked to a wide network of partners, which include Universities, Research Centers, Municipalities, clusters, Brokerage Institutions and European Bodies.

INOVA+ consultants and project managers are confident and deliver effective and sustainable solutions in the following areas of innovation: Education & Training; Management & Innovation; HR Management; Innovation Systems and Innovation Management; Entrepreneurship and Business Development; Internationalization; Science & Technology; Integration of ICT solutions; Active Ageing; Transports; Aeronautics; (e)Health; Public Procurement; Regional Development and Third Country Cooperation.

The International Cooperation Unit is composed of a highly qualified team with a large experience in coordinating and managing EU-funded projects and initiatives to deliver effective and sustainable solutions. The range of competences includes monitoring of opportunities, partner search, proposal writing, project management and coordination, research and needs

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analysis, policy analysis, development of training materials and contents, networking, evaluation, event planning and organization, communication and dissemination, exploitation and transference of results. INOVA+ has participated in over 100 European projects a large range of programs, including the 7th Framework Programme, Horizon 2020, AAL, CIP, LLP and Erasmus+. INOVA+ has coordinated over 30 projects. INOVA+ has also an administrative/financial department of dedicated persons that supports the project management and financial reporting. INOVA+ has a wide experience in vocational and adult training areas through the participation in several of educational and training learning projects and organization of training activities (provision of training services to its clients at the national level). The company is also currently participating in projects in the field of adult education, intergenerational learning and promotion of rural areas. INOVA+ has a department specialized in the improvement of the skills and knowledge of Educational staff, including organizing training for teachers, trainers, school managers and other professionals in the field of education.

Among the wide portfolio of projects coordinated by INOVA+ in the specific field of adult education and financial literacy, the following can be highlighted: Euroinvestment – European Financial Literacy Game for Adults' Citizens I-Heal - p-Skilling Elders in Digital Health Literacy to prevent marginalization and exclusion SASSI-Working On - Silver Age Silver Sage Initiative-WORKING ON LiveCanvas: Bridging digital storytelling and business modelling for developing entrepreneurship training for adults from rural and isolated areas SPARKLING GREY - Turning silver into gold through management strategies that effectively address an ageing and multi-generational workforce.

GENERAL AIM

With No One Behind project, INOVA+ aims to:

- Contribute to the increase of adults' participation in formal, non-formal and informal learning to acquire digital skills[1] ;
- Contribute to reach the goal of having at least 15% of adults participating in learning[2] ;
- Mainstream the use of European tools to different contexts and goals, namely the DigComp 2.0[3] , DigCom into Action[4] and DigComp at Work; [5] Support the implementation of the Portugal Digital, a national plan for the digital capacitation of the population, companies and State[6] ;
- Contribute to the accomplishment of the goals defined in the National Initiative for the Digital Skills e.2030 | Portugal INCoDe.2030[7] ;
- Co-design, implement and validate a complementary training offer and game for the acquisition, development and/or consolidation of adults' digital skills;

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- Provide instruments and tool to support adults' trainers in promoting adults' digital skills, aligned with their needs and professional, economic and social trends;
- Reinforcement adult education in Portugal in all its forms, including formal and nonformal learning.

In what concerns the desk research carried out, the objectives of INOVA+ are:

- Deep the knowledge related to regional and national policies established fostering the digital capacitation of adults;
- Identification of the initiatives, practices and projects related to the assessment and development of adults' digital skills;
- Mapp the education and training offer available in the country fostering the reinforcement of adults' digital skills, suitable to be implemented in formal, nonformal and informal learning of contexts;
- Identify the background and training needs of adults from rural areas, in the scope of digitalization and digital skills;
- Raise the awareness of adults' trainers and learners to the scope and relevance of the NO One Behind project, engaging them its activities at an early stage.

2.4 EUROCREA MERCHANT SRL

Eurocrea Merchant is a management-consulting firm based in Italy, with two offices located in Milan and Naples. Our mission is to improve the competitiveness of the European society, through business development, training and creation of transnational partnerships.

The company was established in 2009 and has three main areas of intervention:

- Consulting and advisory: EM offer specialized services to support the development of SMEs in the process of startup and management of the company.
- Education and training: the company has developed high expertise in this field operating with schools and training centres. The staff of EM conducts researches and studies on the most innovative training methods and tools. The company provides training courses for young and adult people on different subjects relevant to our areas of expertise to support students but also teachers and trainers.
- European projects: Eurocrea Merchant gained expertise in the design and management of European projects and use the funding opportunities offered by the European Union to develop innovative projects in the fields of vocational training, school education, SMEs development and promotion of sustainable development

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strategies. EM is part of a European's network that involves several partners as well as public organizations, research center, school and university, training centres, chambers of commerce, regional development agencies etc

GENERAL AIM

Eurocrea Merchant has implemented several projects and initiatives in the field of adult education and the company has a long experience in studies and researches in the field of education, training, labour market relevance and skills mismatch.

NO ONE BEHIND project aims to support adults with a low digital level in rural areas; EM has the needed and required expertise for the sake of project implementation and success.

The researches for this research detect an emergency in the field of digital competences in Italy. The country has a low position in the ranking of European countries. People with an adequate level of digital competences are more competitive in the labour market and reduce the risk of digital exclusion, an important factor especially in rural areas. EM understands the situation because the company has always promoted the spread and the strengthening of digital competences.

2.5 AINTEK SYMVOULOI EPICHEIRISEON EFARMOGES YPSILIS TECHNOLOGIAS EKPAIDEFSI ANONYMI ETAIREIA

IDEC is a company that specializes in business consulting, training services and high-tech applications. It is active in the Greek and international market since 1989. In the 30 years of its activity, it has achieved a combination of experience and knowledge that is constantly enriched with the ideas and innovation of its new partners.

IDEC specializes in a wide range of topics and products and its customer-oriented approach provides a unique set of integrated services and helps in building a modern business future. One of these services IDEC provides is training. With more than 20 years of educational experience they have developed high quality education. IDEC has a quality system of its services certified according to the ISO 9001 standard. Innovative methods and techniques as well as electronic and interactive tools are priorities for IDEC to provide better and effective understanding to the trained educators.

Additionally, IDEC as mentioned, specializes in a wide-range of services and products such as participating in European projects as the ERASMUS+. By participating in these projects, the company has been provided with the ability to cooperate with more than 800 educational

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organizations. Through these activities IDEC has developed and promoted innovative ideas and methodologies on adult effective learning.

GENERAL AIM

IDEC's research on the adult's digital skills education level is based on surveys, European and national statistical data analysis and research on existing sources.
IDEC will seek a cross-sectoral and cross-cutting approach that brings together the efforts of adult training providers, public bodies and other local community development entities to ensure that the learning materials to be developed are relevant and appropriate to the better use of digital technology in teaching and learning development of digital abilities. More specifically to ensure the successful implementation and exploitation of digital skills education through improved data analysis and forecasting.

Working together for the social inclusion of adults in rural areas prevents the risk of social isolation by developing quality learning opportunities which is adapted to their needs. Moreover promoting their motivation to learn about new IT technology to improve their lives.

Furthermore, this research aims at investigating the situation in Greece through the research and analysis of digital skills level adults and adult educators have in rural areas but also the level of digital education provided.

2.6 European E-learning Institute

The European E-Learning Institute is an SME based in Copenhagen Denmark. The European E-learning Institute (EUEI) is committed to providing high-quality learning experiences and innovative educational programmes, which engage learners from a range of sectors and socio-economic backgrounds. EUEI is committed to promoting social cohesion, inclusion and sustainability across Europe.

The EUEI experienced team of trainers, researchers and technical experts are uniquely placed to guide educators from VET, HEI, Adult and Youth sectors to harness the opportunities that innovative and collaborative e-learning and digital tools offer for learners. EUEI specialises in delivering high quality, responsive and innovative projects to educators and learners in the topics of pedagogic approaches, entrepreneurial competences, digital skills, inclusion and sustainability. As expert pedagogic consultants, EUEI offers a wide range of capabilities in crafting online and offline learning programmes on topics predominately based on entrepreneurship education, digital skills, inclusion, sustainability and pedagogic approaches for a wide range of sectors and industries.

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Collaboration and peer learning form an important part of EUEI courses. EUEI ensure learners can directly connect with educators and trainers who produce course content and are encouraged to join a peer learning platform where peer to peer discussion and sharing of learning experiences is nurtured. Our team at EUEI actively research new ways to spark inspiration, not just within our learners, but also in the way we create and deliver our educational resources. The team is made up of industry-leading, talented, collaborative cross-discipline experts. EUEI's team recognise the need to develop projects and educational resources that speak authentically to the individual needs of learners through high-quality, high impact and learner centric programmes, while also addressing the organisational drivers and stakeholders' priorities.

The three strands of EUEI:

- Research: EUEI actively undertake research in the most current innovative pedagogic approaches and techniques that will provide educational institutes with new pathways and methods to engage their learners! EUEI's team are ever curious and always keen to investigate the power of digital pedagogy for the present and future workforce, proving how it can provide opportunities, especially for those facing adversity.
- Pedagogy: over the past 20 years, the team have acquired a deep understanding of successful pedagogical methods applied in different settings, with a diverse group of learners and across a range of sectors. EUEI's digital pedagogy approach looks critically at digital tools as potential vehicles for learning and teaching and considers digital content and space as valuable sites for information and knowledge. They are specialise in the following areas: E-learning; Blended learning; Open Education Resources; Pure learning theory & practice; Digital tools; Course & curriculum development.
- Technical Expertise: EUEI specialises in the development of engaging online courses/e-learning solutions across a broad range of sectors and industries (VET, HEI, Adult and Youth) They are experts in the use of WordPress, Moodle, Blackboard, TED Ed and Nearpod to deliver robust interactive courses for our learners At EUEI they place the utmost importance on User Experience and Accessibility in designing our courses, resulting in industry leading course retention and completion rates.

GENERAL AIM

Through the NoOne Behind project European ELearning Institute aim to support and upskill rural adult learners, as well as helping to digitize the educators who are working with these rural learners. Once the educators are confident in the digital tools and skills which they require they will be better placed to support and successfully educate their learners. By engaging with the project partners, as well as with the target groups throughout the lifetime of

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this project they will gain insights into the needs and be able to produce high quality materials to meet these needs.

The desk research for Denmark aims to give a brief insight into the current digitization level within our country. This will help to be aware of the training needs and therefore react accordingly.

2.7 ATERMON B.V.

ATERMON is a start-up located in Netherlands, focusing on intelligent uses of GameBased Learning, Web 3.0 technologies and tools for the implementation of solutions, which can deliver lasting learning experiences of real practical value.

The mission of ATERMON is to be at the forefront of applied research in emerging technologies and tools, currently used for the most part by large multinationals for serving purely profit oriented strategies cashing in on the personalisation possibilities powered by Web 2.0/3.0. The intention is to use this knowledge for conceptualising solutions for the benefit of the owners of the data as learners instead of the benefit of purely profit-making business models. ATERMON was incorporated with the ambitious goal to ethically serve the concepts of Open Education, Inclusive Education and Personalised Learning but in a business context and not relying solely on public funding which impose limitations in terms of quality and flexibility.

ATERMON focus on intelligent uses of Gamification and Web 3.0 technologies and tools.

Main activities:

- Conceptualising intelligent solutions for E&T based on gamification models and technologies.
- Designing practical applications and tools in support of ICT-enabled E&T.
- Implementing knowledge dissemination solutions for making specialised knowledge widely accessible
- Harnessing the power of learning analytics through the processing of learning experiences for delivering personalised learing engines.
- Actively researching on xAPI, serious games, AI chat bots and holograms
- Analysing the requirements for IP management in E&T and conceptualising solutions for improving efficiency based on distributed ledgers and blockchain.

GENERAL AIM

For Atermon is the first experience as a partner in Erasmus + projects, the present project is an excellent opportunity for ATERMON to engage with the Erasmus+ programme in collaboration

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with organisations which are experienced in the program. The outputs of the project are a perfect match for ATERMON's focus on the promotion of educational gamesthat can increase learners' engagement providing longlasting learning experience and ensuring skills retention.

ATERMON participates in this project as a technical partner, responsible for creating the online environment that will consist of a simple table game and will incorporate all project materials. Thus, the company will be responsible for both the coordination and the internal use of the partnership for its achievement, and once this result is available, it will ensure that all participants and the general public can access and use it. They will also provide technical assistance to partners during the project (regarding the development, storage and access of online materials) and to all users of the simple boarding game during and after the project.

With this desk research, ATERMON aims to complement the effort made by all partners in offering an insight (and relevant data) regarding the current digital penetration in relation to the demographic of the Netherlands.

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## 3.   Demographic data at country level regarding our target group

3.1 Romania

The total population of Romania is 19,317,384 (2020 national population estimate), Romania's population has declined steadily in recent years, from 21.83 million in 2002 to 19.95 million in 2014.

Life expectancy is 75 years (2015) and the median age is 43.2 years. The age structure is the following: 15.8% (0-14 years); 68.1% (15-64 years); 16.1% (65+).

The 2019 population density in Romania is 84 people per Km2 (218 people per mi2), calculated on a total land area of 230,170 Km2 (88,869 sq. miles).

Currently, 54.4 % of the population of Romania is urban (10,537,319 people in 2019), and 45.6% of the population is rural.
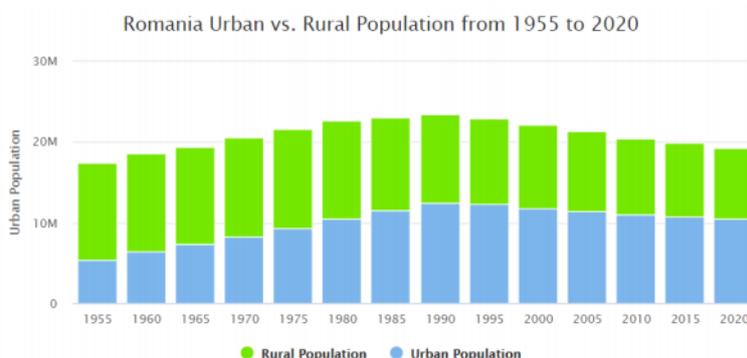
3.2 Portugal

The total population living in Portugal is 10 million and 286 thousand people, those of which being 4 856 000 males and 5 430 000 females (source: INE, PORDATA – 16th of June 2020).

Most of the people living in Portugal are in the age group between 15 and 64 years old, representing around 65% of the population.

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The group that corresponds to young people (0 and 14 years old) makes around 13% of the total residents, while the elderly represent 22%. The latter group has been growing since the decade of 70 and since the beginning of the millennium surpassed the individuals between 0 and 14 years old.

There is a clear ascendant trajectory of the population moving to more populated areas. In 1960, the context of the country was very different from 2011 (the last data available from the national census). Portugal did not have an established democracy, most of the population was living in poor conditions and the connections with the rest of Europe were limited.

The number of people living in areas with more than 10 000 inhabitants was around 2 million, while at the turn of the millennium was already double. Economic growth and more access to education motivated people to move from villages and towns to cities, where the conditions of the labour market were more favorable, and more services were available.

There is a clear trend of fewer people living in areas with less than 2 000 inhabitants (villages) and a predominance of the population living in the two higher brackets, between 20 000 and 100 000 and above.

Regarding the educational level of the Portuguese population, there has been a lot of improvement and investment throughout the decades. The most remarkable evolution is regarding access to Higher Education and obtaining a diploma. At the end of the 90's decade, the number was less than 600 000 people completing university, while in 2019 the number tripled to around 1 million and 800 thousand individuals.

Another interesting aspect that is worth for this characterisation of the Portuguese population is to analyse the labour force by age group. A wide number of the population in the labour market have between 35 and 44 years, followed by the age group of 45 to 54. Additionally, if in 2011 a larger number of employed people was from the age group between 35 and 44, in 2019 the number of both age groups were very nearby. The age group of the individuals between 55 and 64 years old continued a steady increase throughout the years without any major fluctuations, while the 65 years old or more remained almost flat. The younger people, less than 25 years old, has been decreasing its participation in the labour market force since the decade of 80, as well as the ones who have between 25 and 34 years old.

This can be explained by two important factors: the increase of the number of individuals attending university and completing a diploma, which delays their entry into the labour market, and the rise of unemployment rates in this age group. It also needs to be taken into consideration the population ageing and the reduction of new births in the country. The age group with the lowest percentage of employment rate is the older group, individuals with 65

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years old or more. The predominant reason is due to retirement. In Portugal, people can get retired at 66 years and 6 months old (the value varies each year and it is linked with the average life expectancy). The next age group with lower rate of employment is the one of those between 15 and 24 years old. The main reasons are related to the enrolment in higher education degrees and the youth unemployment figures.

The numbers did not change a lot since 1993 until 2019 in all age groups, with the exception of the younger part of the Portuguese inhabitants. In the first year of the data collection, they had an employment rate of around 50%, declining to slightly above 20% in 2013, slowly recovering to less than 30% in 2019. The other two age groups, 25 to 54 years old and 55 to 64 years old, remained almost with identical unemployment rates throughout the time and below 10%, with the exception of the previously mentioned crisis period. The total unemployment rate of the average population is represented with the orange colour and oscillated between 5% and 15% since 1993.

Concerning the representation of the individuals in the labour market per education level, one key indicator to take from this data is the declining of the number of people with "compulsory schooling" level since the beginning of the millennium, dropping from around a total of 3 million and 750 thousand individuals to slightly above 2 million. In the same direction followed the inhabitants without any education level, being around 500 thousand people in 2000 to almost no representation in the labour force in 2019. In contrast, the number of individuals with upper-secondary, post-secondary non-tertiary and higher education degrees increased for almost the triple, from 1998 to 2019.

3.3 Italy

Italy, the resident Population estimate on 1 January 2020 is 60.317.000.

Demographic trend of the resident population in Italy from 2001 to 2019
Source: https://www.tuttitalia.it/statistiche/popolazione-andamento-demografico/

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According to the data collected by the Italian National Institute of Statistics (Istat), in the last five years Italy has maintained a stable decreasing trend of national demographic population.

This decrease is mainly due to three factors:

1. The gap between births and deaths is rising: 435,000 birth / 647,000 deaths. The natural population change is negative -212 thousand units in 2019. The natural turnover of the population in 2019 is the lowest since 1918;

2. New increase of life expectancy at birth: 85,3 years for women and 81,0 years for man in 2019 compared with 80.8 years for men and 85.2 years for women in 2018;

3. The median age has increased constantly: 45,7 years in 2019 compared with 45,5 in 2018.

In addition to the factors already mentioned, we can also add other determinants as well as that the migration turnover in slight decrease compared to the last years. The Italian's population becoming older and this fact are relevant for many economic and social aspects of the country.

In 2020, statistic show that 69% of the population in Italy is urban (42,006,701) and 31% of the population is rural 18.445.125. Over the years, the urban area has become more and more populated compared to the rural area. However, in the last years, the values have slowed down gradually. The population density is higher in big cities such as Rome and Milan, which have more than a million citizens.
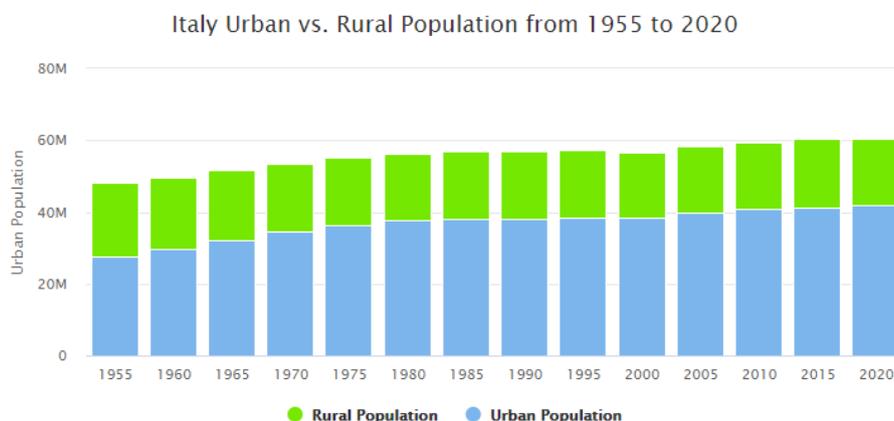
Italy Urban vs. Rural Population from 1955 to 2020

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3.4 Greece

In Greece, the demographic results from Eurostat 2019 on the digital skills level adults are based on individuals aged 16-74 performing selected activities related to internet or software.

These activities were based on 5 competences, information processing, communication, content creation, security-safety and problem-solving. Furthermore, the results demonstrates 46% of adults between the age of 18-24 have a basic knowledge of digital skills. In terms of the five competences these adults can search the web by using a browser, search engines, connecting to the internet sending emails participating on social media across devices, keeping passwords secure etc. Generally the basic skills needed in everyday professional or personal content. About 42% of adults aged between 25-34 years are skilled above basic, meaning that are able to possess more skills to work in the digital sector. For example, these skills include applying digital marketing in accordance with social media, as it is essential in day-to-day professional activities. On the other hand adults aged from 55 -74 years are from low-skilled to not-skilled overall due to the lack of education received as education has a considerable impact on Internet usage.

Digital skills are considered essential for global competitiveness, boosting jobs and growth, while the internet can also play a vital role in terms of providing high-quality education and training (Constantine, 2020). The gap in digital skills amongst people who live in the city and people who live in rural areas is around 27% out of all individuals who have basic or above basic digital skills. This gap is affected by the differences between urban and rural living in Greece. Households in rural areas have a 65% access rate to the internet (one aspect of applying digital skills). This rate is 20 % points lower to the internet access rate in urban areas and in the suburbs. Reasons affecting the interest of adults in rural areas and creating the gap in terms of internet access between urban and rural areas were the "lack of skills", considering it not necessary" and characterized it as expensive equipment (Paudousi, 2020).

The overall level of digital skills in the EU has risen slightly in recent years. In cities, the rate increased from 40% in 2015 to 59% in 2020, in rural areas from 26% in 2015 to 35% in 2021, while in suburban areas and suburbs it increased slightly from 54% in 2015 to 56% in 2021. Concerning the level of digital skills applied by men and women aged 18-74 years in Greece: 41% of women aged 16-24 years are slightly more advanced than men aged 16-24 years where as men over 24 years are more competent and have above basic digital skills to women.

The result originated from a research conducted by the Greek team of the World Internet Project in May 2020 shows the application of basic digital skills (internet use) from adults with multiple educational backgrounds. In more detail, it shows that 100% adults with a doctorate

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degree make use of the internet whereas only 11.6% of adults who have junior school diploma use the internet.

3.5 Denmark

The total population of Denmark is 5.822.763, Denmark's population has gradually increased over the years.

Source: Nordic Statistics Datatbase · Get the data · Created with Datawrapper
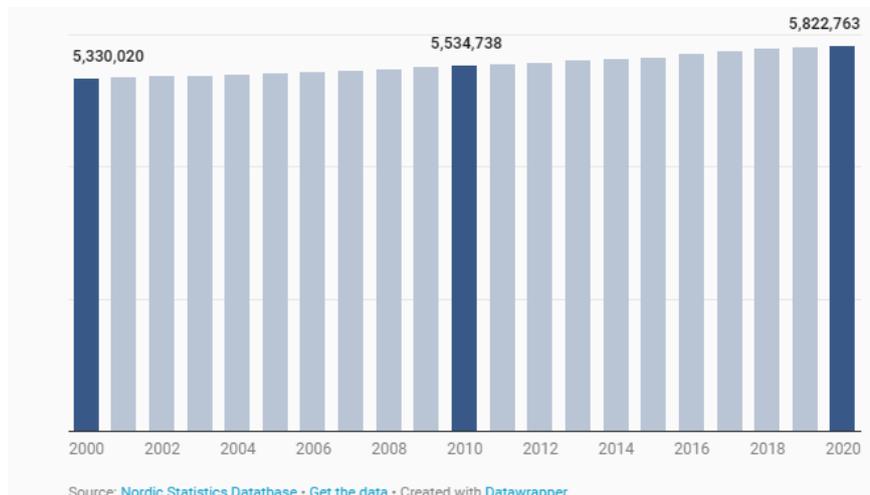
Life expectancy is 81.5 (2019), women have a higher life expectancy rate than men: 83.6 for women and 79.5 for men.

In Denmark, 88.0 % of the population is urban (5,107,903 people in 2020) and only 12% of the population is rural.
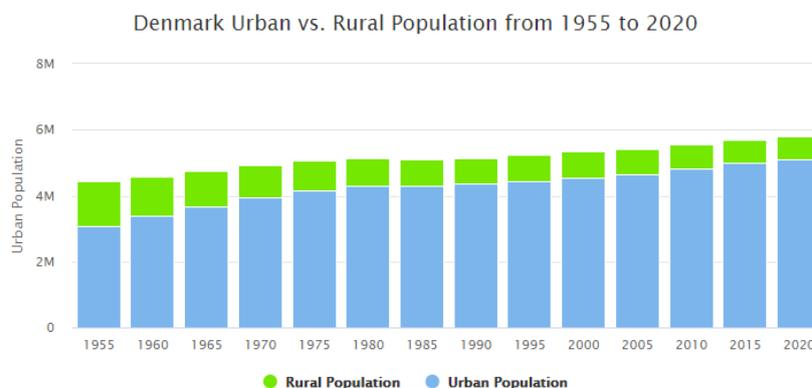

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3.6 Netherland

Population of Netherlands is 17,474,677 (31 December 2020). The country's population doubled, from 5.1 to 10.0 million people, between 1900 and 1950, whereas a smaller increase from 10.0 to 15.9 million people was reported between 1951 and 2000.

Life expectancy (at birth) is 81.9 years in total population (2020 estimation) and the median age in Netherlands is 42.8 years (2020 estimation). The age structure is the following: 0-14 years – 16.11%; 15-24 years – 11.91%; 25-54 years – 38.47%; 55-64 years – 13.69%; 65 and over - 19.82%

The 17.4 million Dutch inhabitants are concentrated on an area of 41,545 km2 (16,041 sq mi) including water surface, the land surface being 33,481 km2 (12,927 sq mi). This means that the country has a population density of 521/km2 (1,350/sq mi).

Currently, 92.1 % of the population of the Netherlands is urban (15,740,995 people in 2019).
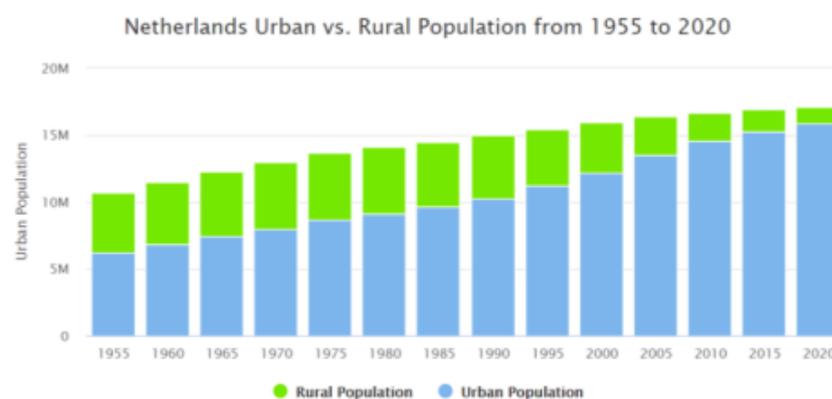
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4. Country's current levels of digital penetration and population's digital competences

4.1 Romania

The Percentage of people with basic digital skills is 58 % in 2019. In 2019, there has been an improvement in both the skills of internet users (at least basic digital skills) as well as advanced skills (ICT graduates and ICT specialists). Percentage of people who have at least basic digital skills reached 58% (compared to 55% in 2015). However, there is a great number of persons who still lack basic digital skills, even though most jobs require such skills.

The broadband internet connection has seen an increase until 2017. In 2019 the percentage of households that were connected to a broadband internet services was 65,7%.
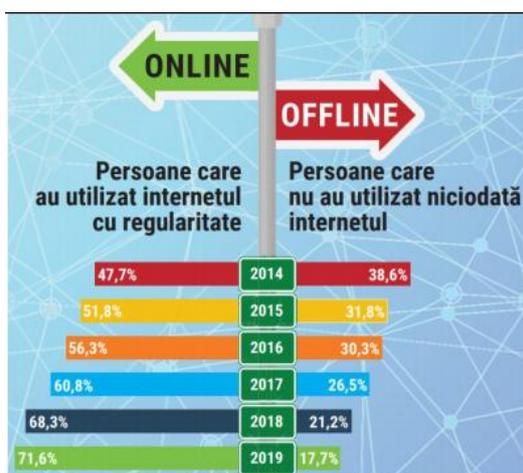
In the left side of the image is the percentage of persons who are using internet on a daily basis. The increase from 2014 to 2019 is spectacular, reaching 71,6% in 2019. In the right side of the image is the percentage of persons who had never used internet. The decrease from 38,6% in 2014 to 17,7% in 2019, is very encouraging, although there is still a lot of room for improvement.

AREA/INTERNET USE	Persons who had never used internet	Persons who had used internet at least once in their lives	Persons who had used internet in the last 3 months	Persons who had used internet in the last year	Persons who had used internet more than a year ago
URBAN	11,5%	88,5%	90,2%	7,3%	2,5%
RURAL	25,2%	74,8%	88,3%	7,5%	4,2%

![No One Behind logo]

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The percentage of persons who had never used internet in rural area is more than double compared to the percentage of persons from the urban area.

AREA/DIGITAL COMPETENCES	Know how to copy/move folders	Know how to use text documents	Know how to create a presentation (ie ppt)	Know how to use excel files	Know how to use photo editors	Know how to write codes and to program
URBAN	87,5%	28,5%	21,2%	24,2%	19,2%	1,7%
RURAL	83,7%	20,0%	11,8%	11,5%	19,6%	0,7%

67% of people who are using the internet and have submitted forms to the public administration reported that they now use online channels, in 2019. Even there was an increase of 10 percentage points from 2014 to 2019, still Romania is the last one in Europe at Public Digital Services.

Romania ranks 26th out of 28 EU Member States in the 2020 Digital Economy and Society Index (DESI).

4.2 Portugal

The evolution of the individuals who access the internet has been considerable since 2002 until last year, 2020.

At the beginning of the millennium, less than half of the youth population was accessing the internet and even in the group of individuals between 25 and 34 years old only 30% of them was making use of this technology. The further we advance on the age ladder, the proportion gets smaller. In the group between 55 and 64 years old, only 5% of the individuals had this privilege. In 2020, almost 100% of the individuals from the two youngest age groups, 16 to 24 years old and 25 to 34 years old, are using internet on their daily lives, mostly on their smartphones and laptops. Right behind these two groups comes the population between 35 and 44 years old, with a proportion of around 95%. Counting with the individuals from the age group of 45 and 54 years old (more than 80%), it can be concluded that a large percentage of the adult population benefits from the technology breakthrough that was the Internet.

[IO1 Innovative methodology - Desk Research Report]

It is relevant to state the importance that around 65% of the Portuguese population between 55 and 64 years old has access to the internet and 30% with 65 years old or over. The access to digital content, the communication between individuals by video calls (for example, family members and friends), the widespread use of social media and access to online services (banking, e-government, utilities, etc.) contributed to more people becoming involved in the digital world.

Dividing the date between an internet connection at home and a broadband connection is relevant because of the beginning of the millennium. A broadband connection is used to mean any high-speed Internet access that is always on and faster than dial-up access, an older technology form of Internet access that established a connection using the conventional telephone line. In 2002, there was still a gap in the telecommunications infrastructure of the country and, therefore, the dial-up access was the only option for many people to be able to access the Internet. The broadband only came closer to the overall proportion of households with the Internet connection at home in 2009. Since an approximate of 15% of the private households in 2002 having access to the Internet at home, there was a fast growth throughout the years that have been very positive to the Portuguese population. After 20 years of investments and digital policies, around 85% of the households are able to access and benefit from the Internet, with more than 80% having good connection speeds (broadband Internet access). The usage of a personal computer (or shared equipment in the family) has increased significantly from slightly more than 25% in 2002 to 71% in 2017 (there is no additional data for the following years).

Until 2001, less than half a million people subscribed Internet contract. There was solid growth during the next 18 years, reaching around 3 600 000 subscribers in 2019. It is relevant to consider that most of the households only have 1 Internet subscriber because the contracts are linked to only one individual. In 2011, the last information available from the Census, there were around 4 million private households to 10,5 million inhabitants (source: PORDATA). The population in Portugal did not change a lot since 1981, when there were approximately 9,8 million people living in the country. Since there is no data available for the following years after 2011 in terms of the number of inhabitants in Portugal, it is not possible to calculate the exact proportion of individuals to the number of private households. Nevertheless, it is possible to estimate that the relation
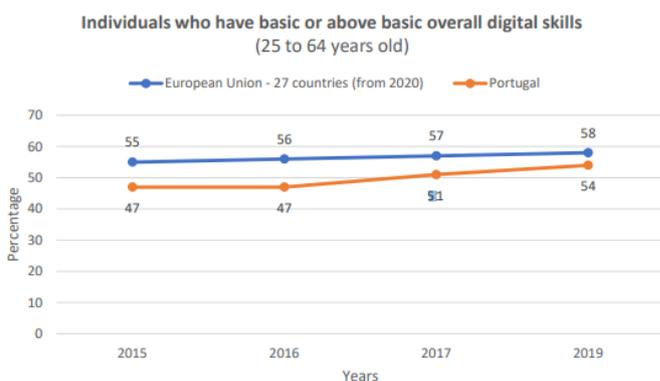
Individuals who have basic or above basic overall digital skills (25 to 64 years old)

[IO1 Innovative methodology - Desk Research Report]

between private households and the number of people living together is almost the same today (2021) as it was in 2011. This estimation can be backed by the birth rate in Portugal, that decreased from 162 000 in 1981 to 84 000 in 2019, as well as the total number of marriages, which was around 76 000 in 1981 and approximately 33 000 in 2019, with this last number including marriages between people of the same sex (source: PORDATA).

Looking at the overall digital skills of the Portuguese population in the age group between 25 to 64 years old, it is important to analyse the data in comparison to the European Union partners. The most recent data available starts in the year of 2015 and extends to a more recent past, 2019. The evolution of the number of people with basic or above basic overall digital skills in the population of the European Union grows each year by 1%. In Portugal, there is also an upside trend, but with a more visible evolution of the percentage of individuals, compared to the country population, that are more digitally literate. Portugal continues to make improvements on this matter, and it is getting closer to its European Union counterparts. In 2015, less than half of the population between 25 and 64 years old had basic or above basic overall digital skills. Only 47% of individuals had good levels of digital literacy. The percentage remained the same in the following year and grew in 2017, 2018 and 2019, reaching the value of 54%. There is a lot of room to improve and the educational strategy of the country needs to continue its implementation efforts to have a more adult population with skills, competences and knowledge regarding the digital world.

4.3 Italy

According to the new Report of DESI 2020, the Digital Economy and Society Index that observes the trend of the European's digital progress, Italy records very low levels of digital competences, below the European average (European Commission; 2020).

In the ranking of European countries, Italy is placed at 25th place. The Italian government has understood the importance of digital competences at a social and economic level. In 2019, was created a new Ministry for Technological Innovation and Digitisation responsible to coordinate the digitalization of the country. According to data, only 42% of the population aged between 16-74 years has a basic level of digital skills, less than the Europe average (58%).

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Another negative percentage regard people that have never used the Internet: 17% (compared a European average of 9%) and the people that use the Internet at least once a week are 74%, but among them, 15 million have a low level of digital skills. In general, the level of use of Internet services in Italy is low compared to the average of the other European countries. According to the data, we can notice that there are online activities with a high percentage of use as well as listening to music, watching videos and playing games.

Age	2010	2013	2016	2019	Var. 2010-2019
6-24	70,9%	75,0%	78,8%	85,3%	14,4%
25-44 anni	68,3%	76,4%	85,5%	89,1%	20,8%
45-64	43,7%	53,1%	67,3%	77,7%	34%
65 anni e più	7,3%	11,5%	18,2%	28,8%	21,5%
6 anni e più	48,9%	54,9%	63,2%	70,4%	21,5%

Figura 3
Source: https://www.youtrend.it/2020/05/06/italia-digitale-levoluzione-degli-ultimi-10-anni/

Although the data has slightly increased over the years, the adult population remains at a low level of internet usage. In particular, we can notice that in some age groups, only 28,8% of people over 65 years of age are able to use internet services.

In addition, we can see that the level of knowledge of digital skills is not only related to age, but also to the level of education. People with a high level of education use more digital tools than people with lower level of education. It should be noted that only 1% of Italian graduates are ICT graduates (the lowest data in the EU).
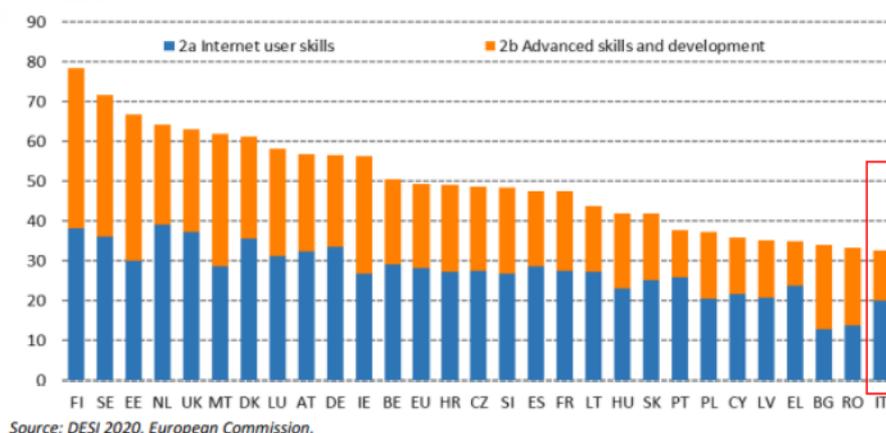
Source: DESI 2020, European Commission.

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According to statistics of European Commission, Italy is the lowest European country for digital skills. As already mentioned the level of education and the age level are two factors responsible for this situation, but there are also other reasons as territorial issues.

We can determinate that the lack of digital skills is the biggest discriminating factor for access to the Internet. This problem placed Italy at 19th place in the EU on Digital public services, even if the country has a good offer of digital services and open data. Italy has made also several efforts regarding the connectivity and Italy in 2020 ranks 17th among EU countries. Overall fixed broadband take-up increased by one percentage point from 2018 to 2019. However, in Italy persists a deep gap between regions of Centre-North and the South, which is visible even in the access to the Internet. The regions of the South (except for the Sicily and Campania) have the lowest numbers of Internet users compared to the regions of the North (70.6% against 62.5%). Furthermore, we can notice that the people in Italian regions in the North are a higher level of digital skills, this is due also because people with a higher educational level work in this regions, while the South is historically less developed and this aspect is reflected on the socio-economic conditions of this regions.

4.4 Greece

The current levels amongst the population within Greece are based on the above 5 areas of competence. Statistics regarding the digital competence of adults in rural areas where not available, therefore all researched data accounts for the digital competence and education adults have generally in Greece. For an adult or adult educator to compete within these five areas a basic aspect is the safe use of the internet. In more detail, in November 2020 the Hellenic Statistical Authority (ELSTAT) announced data on the use of ICT technologies from a sample survey sent to 5.111 households with the presence of at least one member aged 16-74 in each household throughout Greece. The initial technology was referred to the internet access and use.

In 2020, 8 out of 10 households had internet access in the whole country resulting to an increase of 2.4% in comparison to 2019. These values show the timeless imprint of these quantities expanding during the period 2011-2020 based on changes made in the digital market and the country's economy. In the northern part of Greece where one can meet urban areas and rural areas, 82.4% of the population has access to the internet where as in Attica which includes Athens the access rate reaches 83.6%. However, the lowest rate is showing in the central of Greece, which consists mostly rural areas, the rate was around 10% points lower than the Attica region. This occurs because more than a third of residents in rural areas are above the age of 60 while less than 5% are under the age of 35 and few have digital skills (White, 2017).

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The chart below shows the use of internet by adults aged 18-74 in the first quarter of 2020.
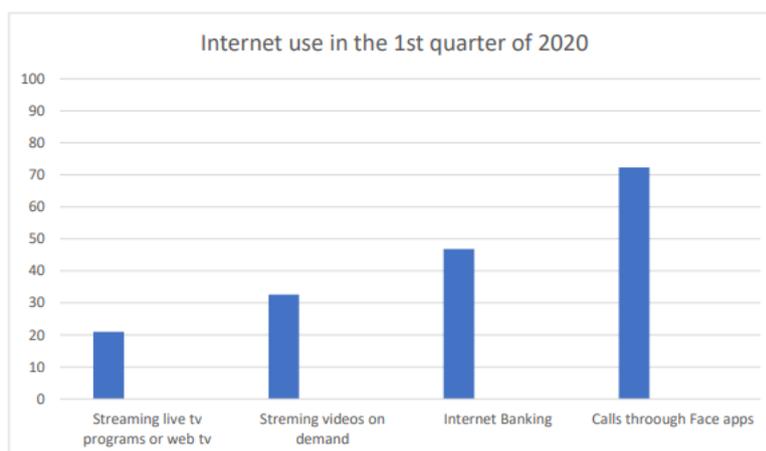
In the 1st quarter of 2020 based on ELSTAT 2020, measures were taken by internet users to protect personal data in order to limit how this information will be accessed and processed and avoid misuse of information and potential cybercrimes. Adults or adult educators while using the internet apply actions to protect personal data via various identification procedures. Most online services require users to confirm their identity. Some of the online services used by adults on personal and professional content require strong authentication procedures. The most common authentication procedure applied mostly through mobile environment is the use of Two-factor authentication (use of mobile phone number). However as shown in Figure 8 88.3% of individuals just use the simple login process where as only 17.5% use the security token, which generates a disposable code and limited lifespan through an encrypted algorithm (ELSTAT, 2020).

In Greece out of 36% employees who use basic ICT tools only 50% of them use programming languages. Specifically from the 20 professions with a total number of 2,184,690 employees in Greece only 8 out of 20 uses ICT tools, meaning that only 650,620 people apply advanced digital skills competence in content creation. However, this indicates the limited technological content of many occupations in Greece. Moreover, 10% of companies are quite digitized but on the other hand 55% are limited to very basic digital technologies (Βιομηχανιών, 2020).

Problem solving in a technical or technological environment is described as the ability to use ICT tools applications and the cognitive skills required to solve problems. As mentioned above basic digital skills include also basic knowledge of ICT input devices and their use. For example file management tools, applications, word processing and e-mails are essential for evaluation tasks. Therefore, Digital Problem Solving is the ability of adults to use the above tools to

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effectively access, process, evaluate and analyze information. In order for an adult to be competent in the knowledge and use of ICT tools, one needs to be an independent to a skillful user. Nevertheless, according to demographic data in section 2 above basic digital skills knowledge is applied only by 40%-42% of adults between 18-34 years (Axess, 2021).

4.5 Denmark

The level of Denmark's Digitisation is almost complete. They showcase high levels of digital skills in all age groups and have strong accessibility which allows fostering of the digital generation.

Further to this in 2019 it was found that 0 individuals in Denmark had "no overall digital skills". Therefore, we can conclude that Denmark has a high level of digital skills across the population.

The chart below shows the individuals' level of digital skills in Denmark:

GEO / TIME	2015	2016	2017	2019
Iceland	:	:	85	85
Norway	80	75	77	83
Netherlands	72	77	79	79
Switzerland	:	:	76 (b)	77 (b)
Finland	74	73	76	76
United Kingdom	67	69	71	74
Sweden	72	69 (b)	77	72 (u)
Denmark	75	78	71	70
Germany (until 1990 former t	67	68	68	70
Austria	64	65	67	66
Luxembourg	86	86	85	65 (b)
Czechia	57	54	60	62 (b)
Estonia	65	60	60	62
Belgium	60	61	61	61
Euro area (EA11-1999, EA12-	57	57	58	59
European Union - 28 countrie	55	56	57	58
Spain	54	53	55	57
France	57	56	57	57
European Union - 27 countrie	54	54	55	56
Lithuania	51	52	55	56
Malta	53	50	57	56
Slovenia	51	53	54	55
Slovakia	53	55	59	54
Ireland	44	44	48	53
Croatia	51	55	41	53
Portugal	48	48	50	52
Greece	44	46	46	51
Hungary	50	51	50	49
Serbia	32	:	39	46
Cyprus	43	43	50	45

![No One Behind logo]

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Denmark falls to ninth place when looking at female digital skill between the ages of 25 to 54 years old.

As is clear from the chart digital skills of individuals, those who are disadvantaged, are still quite high across Denmark and fall in to the percentile with regards to Above Basic skills.

https://ec.europa.eu/digital-single-market/en/news/measuring-digital-skills-across-eu-eu-wide-indicators-digital-competence
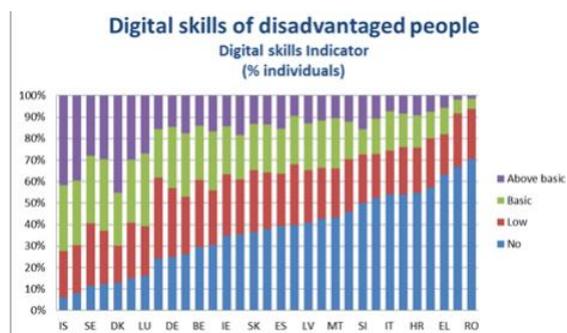
Government in Denmark are aware of the Digital gap which exists, albeit in a small capacity, within their rural areas, and are actively working to close this divide. Denmark is a great example for best practice in the innovation and digitisation. Rising well above the European average, 94% of Danes are online and 78% are equipped with at least a basic level of digital skills. This does not apply only to the younger generations; half of those aged 65 or above are also digitally skilled.

4.6 Netherlands

The Netherlands is one of the countries in Europe, together with Finland, Denmark and the United Kingdom, with the largest share of inhabitants who are proficient in digital skills (using the internet, computers and software). In 2019, half of the Dutch population aged 16 to 74 years had 'above basic' overall digital skills, versus an average 33% in the European Union. This is the outcome of research conducted recently by Statistics Netherlands (CBS) and other EU member states. The level of digital proficiency is increasing among the Dutch population aged 16 and 75 years. In 2015, the share of people with above basic digital skills was still only 43 percent.

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Above basic overall digital skills in the EU-28, 2019

1,2,3,4): Method break
5): No data available
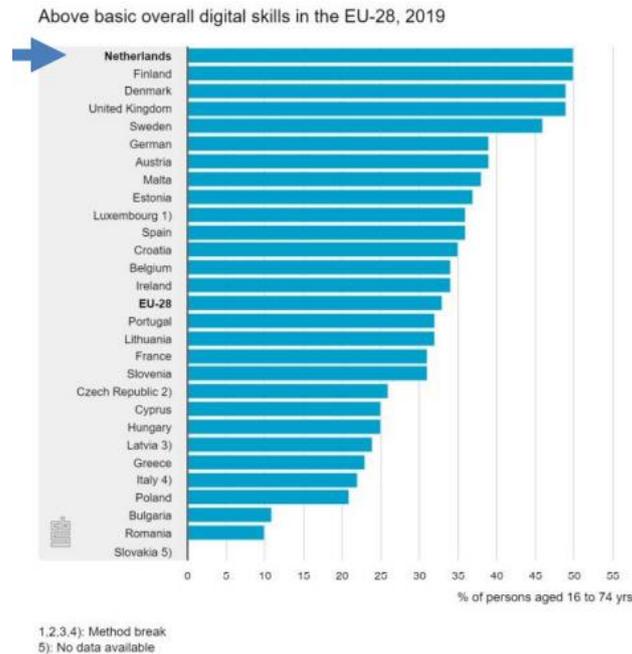
The digital competences of Dutch people have always been higher than the EU average. This is also confirmed by the DESI country report (2020 data) for Netherlands.

Based on data prior to the pandemic, the Netherlands ranks 4th in EU-2, as regards the Digital Economy and Society Index (DESI) 2020. It therefore remains one of the top European performers with a solid and steady 'digital growth'. As the graph below clearly demonstrates, the Netherlands increased its score in human capital, use of internet services, integration of digital technology and digital public services, in line with a comparable average increase across the EU. It is among the top performers in connectivity, with near-complete fast broadband coverage (next generation access/NGA) and 4G coverage. Only when it comes to 5G, there are margins of improvement.

Digital Economy and Society Index (DESI) 2020 ranking
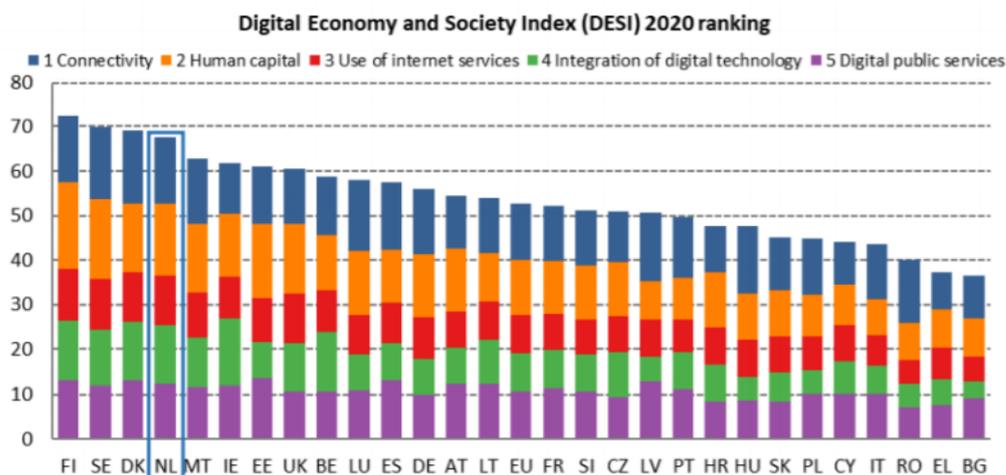
[IO1 Innovative methodology - Desk Research Report]

The broadband internet connection has seen a steadily high score since 2017. In 2019 the percentage of households that were connected to a broadband internet services was 98%, compared to 78% the EU average.

According to the DESI report 2020, 95% of Dutch people are Internet users, one of the highest percentages in Europe. Similar is the picture by STATISTA; there were 16.13 million active internet users in 2020. The figure is forecasted to grow and reach by 2025, the number of 16.89 million active internet users. Similarly, only a 2% of the Dutch population have never used the internet. A mostly urban country, Netherlands has just one predominantly rural region, but with such a high internet penetration, there is not really much significance in talking about access to internet in urban vs. rural areas. 67% of people (EU average) who are using the internet and have submitted forms to the public administration reported that they now use online channels (2019 data). Netherlands has remained among the top performers in this area are behind Estonia, Spain, Denmark, Finland, Latvia, and Lithuania, as the graph above demonstrates.

WhatsApp and Facebook were the most used social media in the Netherlands, both having the highest overall number of users but also seeing much daily use. WhatsApp had over 12 million Dutch users, whereas Facebook had around ten million users. Instagram on the other hand had 5.6 million users. The daily active users (DAU) of social media in the Netherlands like WhatsApp, Facebook, YouTube, Instagram and Snapchat increased in recent years. As of 2020, roughly 3.4 million individuals in the Netherlands used Instagram every day (STATISTA data). WhatsApp and Facebook ranked as the most popular apps for 22-to-36-year-olds. 90 percent of the Millennials said they used the messaging app, whereas the social network reached a usage rate of 79 percent. Instagram and Snapchat, however, were more popular among respondents aged 15-19 years old. 81.7% are having a social media account (STATISTA data).

5. National and European best practices related to digital skills for adults

5.1 Romania

See below a list of existing national and European best practices related to digital skills for adult:

1. The **eSKILLS4ALL** project initiated a holistic approach to promote digital literacy, while fighting skills mismatches and unemployment of low-skilled unemployed adults with a focus on women through a multi-assessed e-tool based on an interactive and dynamic platform in order to up-grade their digital competences. https://academy.eskills4all.eu/

2. **DQ SKILLS** offers a training itinerary for adults and a training course aimed at digital citizenship designed and developed to foster your competences in this field. DQ Skills is a Strategic Partnership funded by the European Commission under the frame of ERASMUS+ where different European organizations specialized in the areas of Training and New Technologies, join efforts to develop an Itinerary and training content that according to 3 levels (basic, medium and advanced) which enables any adult citizens to the correct exercise of their digital citizenship. http://www.dqskills.webspecialista.com/

3. **SILVER CODE** aims at improving the quality of life of old people in our digital world through developing knowledge and skills for fully taking an advantage of digital technology. https://www.silvercodeproject.eu/

4. **BRAVE** project aims to empower unemployed adults who have difficulties in finding a new employment because of the increasingly specialised skills required by the market. To this end, BRAVE develops specific learning paths supporting adults to reconsider their life and expectations and to become aware of their own professional ambitions and objectives, as a way to reach their own personal fulfillment. https://platform.iliketobebrave.eu/

5. **Cre8ive** project aims to support innovation in education for youth-atrisk by supporting the continuous professional development of youth workers and education professionals working with young people. https://cre8iveproject.eu/ie/elearning/

[IO1 Innovative methodology - Desk Research Report]

5.2 Portugal

See below a list of existing national and European best practices related to digital skills for adult:

1. **Information and Communication Technologies (ICT):** this is a training plan on ICT that was structured at the end of '90s and that is being continuously reviewed. The training is integrated in multiple offers of adult education and training, addressed to low qualified adults. The training plan is part of the National Qualification Catalogue. http://www.catalogo.anqep.gov.pt/Qualificacoes

2. **Emprego Mais Digital** is a joint initiative of Confederação Empresarial de Portugal (CIP, the Business Confederation of Portugal, in English) and Portugal Digital, financed by Instituto do Emprego e Formação Profissional (IEFP, Institute of Employment and Vocational Training, in English) and implemented by business associations. It consists of offering short duration training units (of 25 or 50 hours each unit), in digital areas and for active employees. The learners will acquire and develop specific digital skills related to the information and communication technologies and the digital equipment operation and maintenance.

   Projeto Emprego + Digital vai aumentar formação profissional de 25 mil pessoas - XXII Governo - República Portuguesa (portugal.gov.pt)

3. **Formações de média duração na área digital** are a medium-term trainings that have a duration of up to 350 hours, with autonomous certification. The training units carried out allow obtain a qualification in the digital area of level 4 or 5 of the European Qualification Framework. The general aim is to improve young adults' skills in the digital area.

   Agência Nacional para a Qualificação e o Ensino Profissional, IP (anqep.gov.pt)

4. **Academia Digital para Pais**, "Digital Academy for Parents" in English, is an initiative of EDP Distribuição - Energia, SA in partnership with the Direção-Geral da Educação (DGE, Directorate-General for Education, in English), which gives parents/guardians of students at the primary school the opportunity to attend training in digital areas.
   Academia Digital para Pais | Direção-Geral da Educação (mec.pt)

5. The project **iHeal**, co-funded by Erasmus+ KA2 Strategic Partnerships in the field of adult education, aims to create a training programme to facilitate elderly people's access to electronic health services. The project proses the design and development of an inclusive, interactive and user-friendly digital platform to equip and improve digital health literacy for the elder European population (50+).
   iHeal

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5.3 Italy

See below a list of existing national and European best practices related to digital skills for adult:

1. The **Digital Republic** is a national strategic initiative promoted by the Department for Digital Transformation of the Presidency of the Council of Ministers to foster the digital transformation of the country. The Digital Republic initiative aims to reduce the phenomenon of digital illiteracy providing people of the digital skills needed in the labour market, to reduce the digital divide among people and increase the percentage of the specialist in digital technologies
   https://repubblicadigitale.innovazione.gov.it/it/

2. **Digital Competences Development System (DCDS)** project is co-funded by the Erasmus+ Programme of the European Union under the Action KA3. The project aims to provide adult education of digitals competences to be more competitive in the labour market and in society. Unfortunately in Europe around a quarter of adult people doesn't have a sufficient level of digital competences and for this reason, they have a problem in society, with the risk of social exclusion ad poverty.
   https://digitalcompetences.eu/

3. **Pane e Internet** is a project funded by the Emilia-Romagna, a Region of Italy, as part of the Regional Digital Agenda to promote the development of digital skills of citizens. The Emilia Romagna region has activated services on the territory the "Punti Pane e Internet" where people can find support and courses in the digital field. These services are collocated in libraries, schools and associations.
   https://www.paneeinternet.it/public/corsi-eventi

4. The **GIRDA** project has received funding from the European Union as a Erasmus+ Programme. The project wants to promote with older people the relevance of digital products through the use of games on tablet computers. The project wants to introduce older people to the use of digital products through the use of games on devices.
   https://www.onlinecentresnetwork.org/sites/default/files/a6_your_guide_to_using_games.pdf

5. Nonni su Internet project was promoted in 2002 by FMD, the Ministry of Innovation and Municipality of Rome. The main aim of the project is to educate older people to digital literacy. Today this project has become a national (18 Italian regions involved) and transnational (8 EU countries) intervention model.
   https://www.terzaetaonline.it/manuali-e-guide/

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5.4 Greece

See below a list of existing national and European best practices related to digital skills for adult:

1. **Free Online Tutorial for Women to develop digital skills** is a digital skills education program for women focuses on retrieving specific practices and skills. The objectives of the seminar are for the participants to improve their knowledge and capabilities on digital skills and to re-enter the labor market or to aim at starting their own businesses.

2. **Digital Skills for all> Start Project** offer digital skills training to different community groups. The project aims at offering an equitable and inclusive digital skills training, beneficial to develop a set of broad transferable skills.

3. **Learn Digitally, Teach Digitally** the program aims to help secondary school teachers gain more knowledge about digital skills and to discover teaching methods and ways that could help their students develop them.

4. **Tea4seniors** project aims to promote digital literacy to seniors with low level of skills as well as to strengthen their educators through an effective and innovative methodology that combines learning by analogies. The projects aims to create an online learning platform with specific content and educational materials for the development of digital skills.

5. **ICT course** the course intends to improve the professional skills of participants and facilitate the learning process. The project aims to familiarize teachers/educators with current educational trends and it aims to provide teachers with the skills and knowledge necessary to create and implement their own educational content.

5.5 Denmark

See below a list of existing national and European best practices related to digital skills for adult:

1. **TechPlomacy** project investigate and research innovative solutions beyond Denmark's own boarders, in order to share best practice with other countries and ensure that Denmark is continuously learning and growing in their digital approaches. https://techamb.um.dk/

2. **Digital Hub Denmark** is an independent organisation and public private partnership between the Danish Government, the Confederation of Danish Industry, the Danish Chamber of Commerce and Finance Denmark. The hub's strategy is to support a process of matching private companies, researchers, tech-entrepreneurs, and students

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in the development of new digital products, services and business models. Essentially, it's an initiative to connect big ideas with digital experience, disseminate knowledge and encourage innovation.

3. The **DTU Learn for Life Centre** was established in April of this year. It's aim is to become the Technical University of Denmark's central platform for continuing education, and will provide knowledge, support and assistance to partners about lifelong learning. It is a collaborative effort between DTU departments, central administration and strategic partners. The centre was initiated to showcase DTU's innovative technologies and expertise, both within Denmark and to the rest of the world. It also promotes a culture of lifelong learning and meets a national need for continuing education provision.

5.6 Netherlands

See below a list of existing national and European best practices related to digital skills for adult:

1. **Adult learning – A personal learning and development budget (STAP):** Dutch adults participate more in formal and informal learning compared to their peers in other OECD countries, but do still lag behind their peers in the top-performing countries. In light of the earlier mentioned transitions, the OECD therefore urges The Netherlands to take action and to invest in skills of its citizens to prepare for tomorrow's economy (OECD Skills Strategy, 2017). To achieve this, The Netherlands is expected to implement a type of individual learning budget to encourage adult learning and to create a positive and strong formal and non-formal learning culture, by 2022. This is a public budget and differs from learning accounts, as it is not a universal right and prospective participants have to apply for it. It will target every adult with a link with the Dutch labour market and aims to contribute to people's long-term employability.

2. **BEST PRACTICE Strengthening the learning culture of SMEs:** the Dutch government has proposed two complementary policy measures to stimulate SMEs to enhance their investments in education and training: SME Idea and the so-called SLIM budget. SME Idea challenges entrepreneurs to propose ideas focused on removing the obstacles encountered by SME entrepreneurs when investing in training and development of their current and future workers. The SLIM budget, on the other hand, provides structural financial support. This subsidy aims to encourage SMEs to invest (more) in strengthening its learning culture.

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3. **Public-private cooperation aiming to innovate education and address regional skills needs.** The Dutch government has championed public-private cooperation between vocational and higher education institutions and the private sector on a regional level for years. To develop a structural approach to ensure a well-trained workforce with sufficient smart and capable technicians for the jobs of today and tomorrow over sixty parties collaborate under the flag of the National Technology Pact, a public private partnership. All the involved partners (including government, education, business, employers, employees) have made concerted and dedicated efforts to implement the necessary measures based on an integrated approach named 'Choosing, learning and working in technology.

4. **The 'Dutch Digitalisation Strategy' and the 'Government Digital Strategy: NL DIGIbeter'.** Since communication in the Netherlands is increasingly going digital, this has a large impact on everyone's lives. But for many people, developments are going too fast. Everyone can take part in the digital society.

5. **New programme: Tel mee met Taal 2020+.** From 2019, the Ministry of the Interior and Kingdom Relations (BKZ) started its participatation in the 'Tel mee met Taal' programme. In the new programme, the focus is to go digital. The old 'Tel mee met Taal' programme finished at the end of 2019 and was a synergy of municipalities, employers and social organizations.

6. The most important act governing adult education in the Netherlands is the **Adult and Vocational Education Act** (WEB, 1995). The Act covers both vocational education and training and the basic skills learning offer. Educational institutions are free under the terms of the Act to devise tailored learning pathways. No age limit exists concerning public funding for diploma-oriented trajectories. The Netherlands has a decentralised system, with a large degree of autonomy for educational institutions. Separate governance structures exist for basic skills and the remainder of adult learning.

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6.   Conclusions

At the conclusion of this research, we have seen that there are many differences in the penetration of digital skills between the partners' countries.

The European Commission use an index, the Digital Economy and Society Index (DESI), to monitor the level of digitalisation in the EU Member States.

The last statistics (DESI 2020) have shown us that many European countries are still below the European average of digitization.
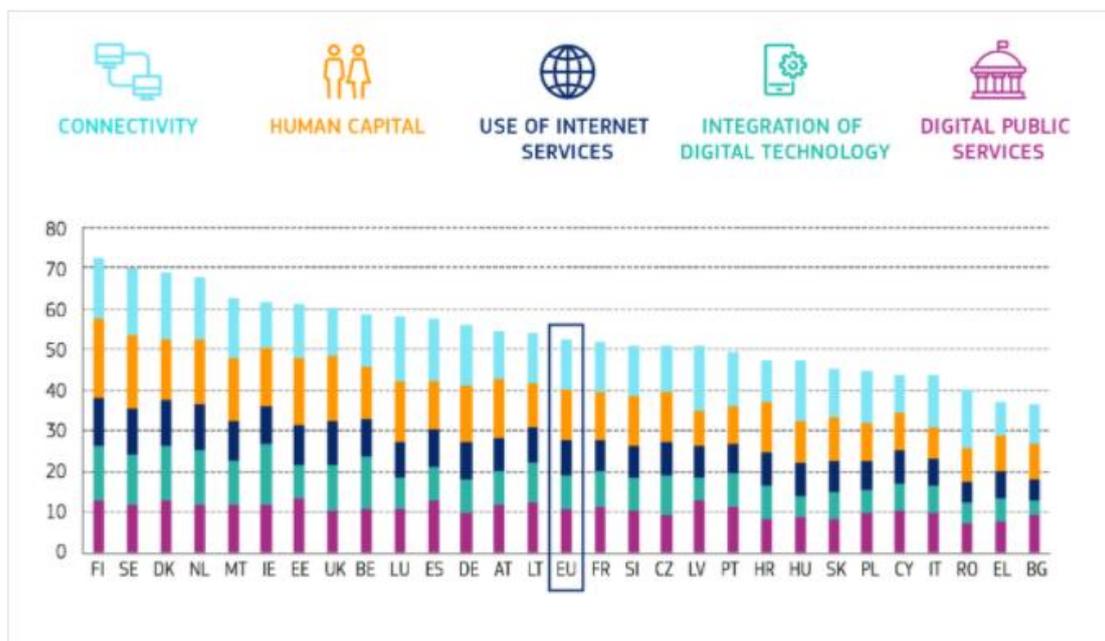
Romania, Greece, Portugal and Italy are far from being in line with the European average for digitisation, while Denmark and the Netherlands are at the top of the ranking.

In Denmark, it is surprising that all age groups have a good level of knowledge of digital skills. This means that not only young people are able to use technology, but even most adult people are competent in this field.In this country, the process of digitisation is almost complete, except for a slight gap between the rural and urban area, but the Government is already trying to resolve this gap.

The same is for the Netherlands has a very high level of digitalisation, which is the result of a synergy effort between public and private parties to become a country of excellence in this

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field. The country continues to promote policies in this direction to maintain a high level of digital competences among citizens.

As we have seen Romania, Greece, Italy and Portugal still have a very low level of digitalization compared to the European average. However, over the years, all these countries have had strong growth in this direction. In general, we can notice that young people have an acceptable level of knowledge of digital skills, but the adults and the elderly have the most problems in this field. If we looking at the gap between urban and rural areas, we can notice that the level of knowledge of digital competences is even lower.

That's why projects like NO ONE BEHIND are so important. This project represents a great opportunity to improve the knowledge of digital competences at the level of the population that have more difficulties to learn it.

Digital competences are essential for every citizen in order to be entirely included in society and in the labour market, which today required a high level of these kinds of ability.

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