DIGITAL DIVIDE AND ELDERLY PEOPLE

Report on ICT use and assessment of training in new technologies

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Report on ICT use and assessment of training in new technologies

GOBIERNO
DE ESPAÑA

MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

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CONTENTS

1. INTRODUCTION

This report is the product of the research project "digital divide and elderly people: digital literacy and e-inclusion" (CSO2012-36872) whose main researcher is Leopoldo Abad Alcalá and the researchers Ignacio Álvarez de Mon Pan de Soraluce (IE Universidad), Celia Camilli Trujillo (Universidad Complutense), María del Mar Herrador Morales (Universidad CEU San Pablo), José María Herranz de la Casa (Universidad de Castilla La Mancha) and David Santos Mejías (Universidad CEU San Pablo).

Amongst the objectives of the project the design and execution of a quantitative research was included based on the main conclusions obtained in the focal groups. This quantitative research focussed on older people's main gaps in Internet use, the weaknesses that they find in the learning system of computer tools and the improvement proposals. The advantages of this type of research activity have been: a) Its adequacy to obtain diverse information from a large group of people located in different geographic areas; b) It stands out because of its high degree of reliability conditioned by the standardization of answers; c) The survey enables the comparison with data obtained in other surveys in relying on the standardization and quantification of the answers; d) the application of probability and sampling theory enables the calculation of statistical significance, giving a mathematical base to the generalization of the survey data. We changed our first intention to perform the survey by phone, as the developed questionnaire based on the focal groups' conclusions became more complex when looking for a greater amount of data which enable a more reliable and ambitious conclusions. Performing the survey online was discarded for obvious reasons. Referring to the type of questions, we considered it appropriate to establish a closed question, using combinedly in its design the Thurstone scaling together with the Likert Scale. Stratified random sampling was used, using groups such as age, type of course done and geographical location as stratums.

This structured survey was carried out on 985 people, of whom 632 interviews were made. The interviews were conducted in socio-community centres of Galicia, in the Uuniversitas Senioribus CEU of Madrid, in the Arapiles Social Centre of Obra Social "La Caixa" and in the Senior Centre OFEMECUM of Granada. The surveys took place during November and December, 2015, performing the data processing in January and February, 2016. After the data processing we concluded that the sampling error was +/-3.90% for a 95.5% confidence level, being P=1=0.5.

The survey results appear in chapter four of this report. The first chapter deals with ageing population both in Spain and in Europe and the world, primarily with the data of the Spanish National Statistics Institute (INE), Eurostat and United Nations. The second chapter deals with the generational digital divide both in Europe, again with Eurostat data, and in the United States, based on data published by the Pew Research Centre. The third chapter is about the generational digital divide in Spain, primarily with INE data, analysing ICT use by elderly people, intensity and modalities of e-commerce use, e-Government, and diverse Internet uses, all of them according to different demographic and temporary variables. These three first chapters purport to contextualize the situation of elderly people in relation to information and communication technology, aiming to show the existence of this generational digital divide and how, with the adequate training initiatives for media literacy, this divide can be reduced, achieving the goal of e-inclusion of the elderly.

For the rest of the project conclusions and methodological proposals for a better use of ICT training for elderly people see the monograph "Digital divide and elderly people. Media literacy for e-inclusion" by the same author of this report and published by Dykinson.

2. DEMOGRAPHIC CHANGE IN SPAIN

The ageing of the Spanish population is apparent in the data of the last census carried out by the (INE) Spanish National Institute of Statistics (1 July 2015) in which of the total Spanish population (46,423,064) people aged over 65 represent 17.57% (8,156,064), those aged over 80 years of age 2,752,057 which constitutes 5.9% of the total Spanish population. This fact is confirmed when we compare the data from 2001, when the number of people aged over 65 was 17% of the population, of whom 13.2% are aged between 65 and 79 and those over 80 are 3.9% of the population. In 2011, despite the increase of the total Spanish population by nearly six million with respect to the previous decade, the percentage of people between 65 and 79 rises by only 0.3 percentage points, while the percentage of people over 80 rises by 1.3 percentage points.

Due to the ageing of the population pyramid, the long-term projections for Spain provided for the 2009-2049 period by the Instituto Na-

cional de Estadística (INE) (National Institute of Statistics) point out that the population aged 64 and over will double in 40 years and will represent 31.9% of the total. Therefore, natural population growth will be negative from 2020. The long-term projection of Spanish population, 2009-2049, indicates that "... for every 10 people of working age, in 2049, there will reside in Spain almost nine people potentially inactive (under 16 or over 64). That is to say, the dependency ratio would increase to 89.6%, from the current 47.8%" (INE, 2010: 3). It is projected that there will be 15.679,878 people aged 65 and over for the year 2060. For each child there will be 2.3 old people. This in-

crease will be reflected as well in people over the age of 80.

As shown in the following graph, according to the INE data, the Spanish population over the age of 65 will increase, from 20.2% of the total population in 2010, to 25.6% in 2030, and 36.4% in 2050. If we consider the age range between 65 and 79, this will represent 12.1% in 2010, 17.6% in 2030 and 21.5% in 2050 of the total population of Spain. The ageing of society is also apparent in the increase of life expectancy, since the percentage of people over the age of 80 will almost triple between 2010 (5.3% of the total) to 2050 (14.9%).

Evolución de la población mayor en España, 1900-2050 (porcentaje)
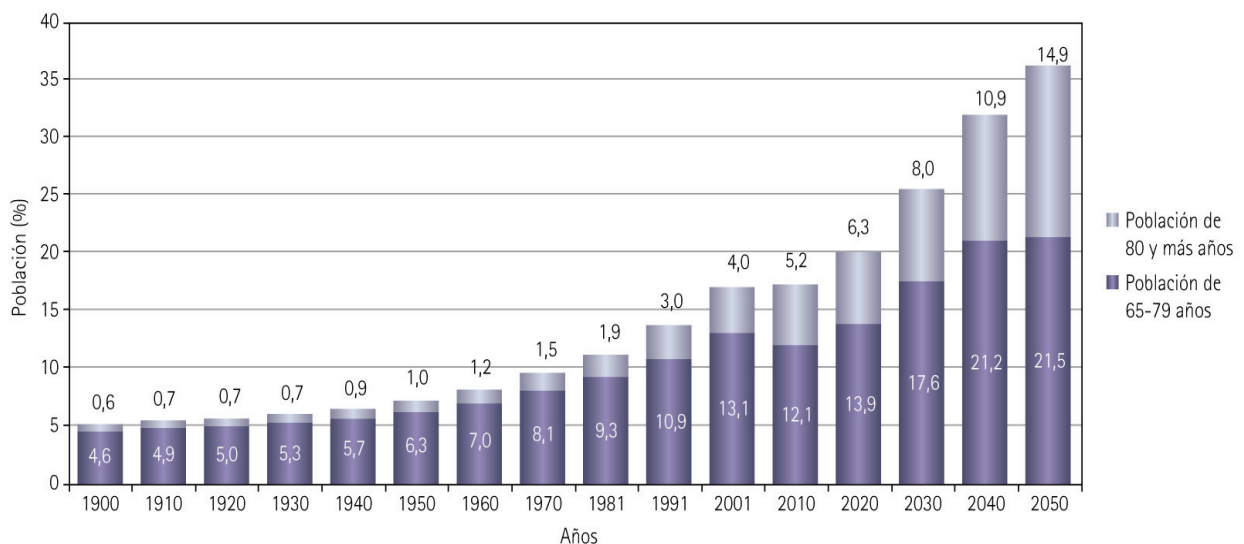
* Las proyecciones de población (2020-2050) están calculadas a partir de la población a 1 de enero de 2012.

Fuentes: 1900-2001: INE: INEBASE: Cifras de población. Resúmenes provinciales de población según sexo y edad desde 1900 hasta 2001.
2011: INE: INEBASE: Censos de población y vivienda 2011. Resultados nacionales, por comunidades autónomas y provincias.
2020-2050: INE: INEBASE: Proyección de la población a largo plazo.

Graph. 1.1. Evolution of the elderly in Spain, 1900-2050 (percentage)

If we look at the situation of people aged 65 and over in the Spanish regions (Autonomous Communities), we find that Castile and Leon (with 24% of people over the age of 65), the Principality of Asturias (24%) and Galicia (24%)

are the Autonomous Communities with the largest ageing populations. At the other end of the scale we find the Region of Murcia (15%), Canary Islands (14.89%) and Ceuta and Melilla (10.4%) (Abellán y Pujol, 2016: 6)[1].

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1 We will rely on Abellán García, A. and Rodríguez Pujol, R. (2016). "Un perfil de las personas mayores en España, 2016. Indicadores estadísticos básicos. Madrid, Informes Envejecimiento en red nº 14", for all graphics latest consultation.

Figura 1.4.- Personas de 65 y más años respecto al total de población, por comunidades autónomas, 2015 (porcentaje)

Comunidad	%
Castilla y León	24,1
Asturias (Principado de)	24,0
Galicia	24,0
País Vasco	21,1
Aragón	21,0
Cantabria	20,3
Rioja (La)	19,9
Extremadura	19,8
Navarra (C. Foral de)	18,9
ESPAÑA	18,4
Comunidad Valenciana	18,4
Castilla-La Mancha	18,3
Cataluña	18,1
Madrid (Comunidad de)	16,8
Andalucía	16,2
Balears (Illes)	15,1
Murcia (Región de)	15,0
Canarias	14,8
Ceuta y Melilla	10,4
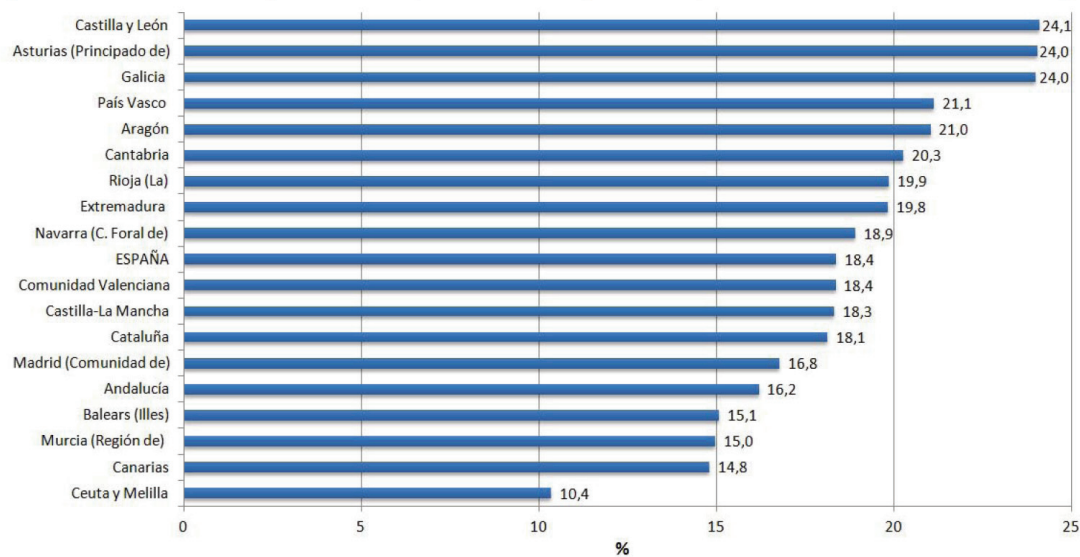
Fuente: INE: INEBASE. Padrón Continuo a 1 de enero de 2015. Consulta en enero de 2016

Graph 1.2.

The reversal of the demographic trend in our country is reflected in the chart below, in which it is established how, in the year 2000, people aged 65 and over become more numerous than the ones included in the age group of people between the ages 0 to 14. This tendency will increase until the year 2050, tripling the number of people older than 65 and above over the age group of people between 0 and 14, as indicated above.

Inversión de la tendencia demográfica en España, 1900-2050
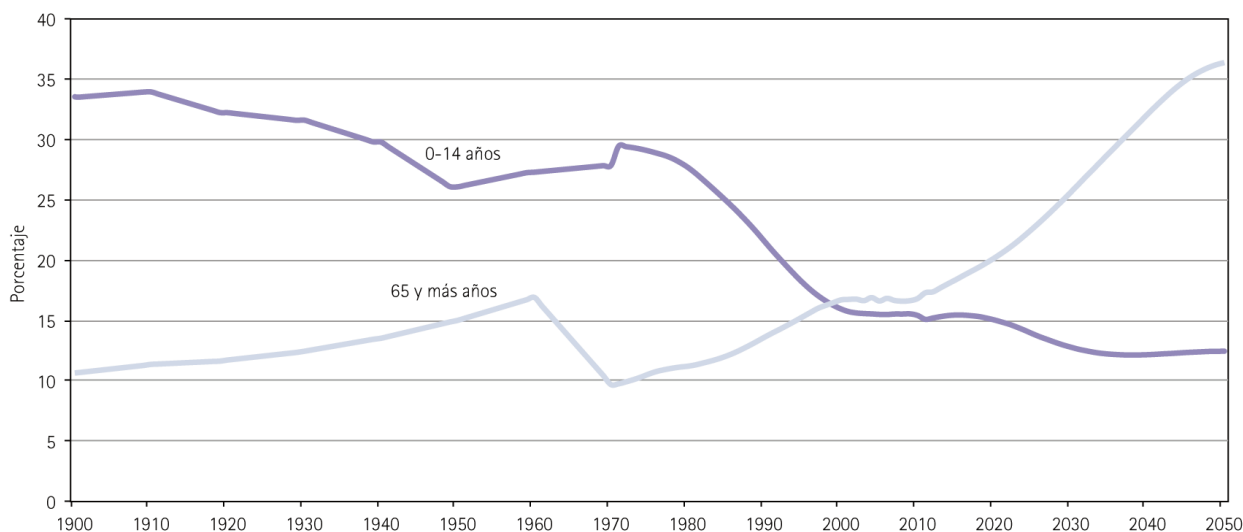
* Las proyecciones de población (2020-2050) están calculadas a partir de la población a 1 de enero de 2012.

Fuentes: 1900-2001: INE: INEBASE: Cifras de población. Resúmenes provinciales de población según sexo y edad desde 1900 hasta 2001.
2011: INE: INEBASE: Censos de población y vivienda 2011. Resultados nacionales, por comunidades autónomas y provincias.
2020-2050: INE: INEBASE: Proyección de la población a largo plazo.

Graph. 1.3. Reversal of the demographic trend in Spain, 1900-2050

When analyzing the differences between men and women according to age groups, we find that until the age range of people between 45 and 49 years old there are more men than women, but from that age range the number of women exceeds that of men, a difference which increases as age advances, exceeding, at ages over 85, the number of women over the number of men by 450,000.

Figura 1.3.- Diferencia entre la población de hombres y mujeres por franja de edad, 2015

Graph 1.4.

Another factor we must assess in order to endorse the ageing of Spanish society is the projection of the percentage of people by age groups from the age of 65. Three age groups are established: everyone older than 65, and then they are subdivided into two groups, one for people between 65 and 79 and another for people older than 80. In the year 1900, the number of people older than 65 reached 5.2%, the people older than 80 being only 0.6% of this percentage. The percentage of the population older than 65 in 1940 reached 6.5%, of which 0.9% was older than 80. In 1960, people older than 80 amounted to 1.2% and people between 65 and 79 constituted 7% of the total of the Spanish population. In 1981, these percentages amounted to 1.9% and 9.3% respectively, while a significant increase happened during the two following decades, in 2001, the number of people older than 65 was 17% of the population, of which 13.2% were between 65 and 79 years old and 3.9% of the population were older than 80. In 2011, despite the overall increase of the Spanish population by 6 million people compared to the previous decade, the percentage of people between 65 and 79 years old only increased by 0.3 points, while the percentage increase of people older than 80 is 1.3 percentage points. If we analyze the statistical projection made by the INE from 2021 to 2061, we see how the number of people who are between 65 and 75 years old increases significantly, rising from representing 14% in 2021, to 17.7% in 2031, 21.3% in 2041 and 21.4% in 2051, and going down to 17.6% in 2061. Meanwhile, those older than 80 gradually increase their number from 6.5% in 2021, to 8.5% in 2031, 11.8% in 2041 and 16.4% in 2051, exceeding the age group between 65 and 79 in the year 2061, since octogenarians will be 21.1% of the Spanish population that year, according to the forecasts of the INE. If we observe the percentage of population older than 65, in 2021 they will represent 20.6% of the total, but in 2041 they will amount to 33.1% (one out of three inhabitants of Spain will be older than 65) and in 2061 38.1 % of the total population.

Tabla 1.1.- Evolución de la población mayor, 1900-2061

Años*	Total España	65 años y más		65-79 años		80 años y más	
	Absoluto	Absoluto	% respecto al total	Absoluto	% respecto al total	Absoluto	% respecto al total
1900	18.618.086	967.774	5,2%	852.389	4,6%	115.385	0,6%
1910	19.995.686	1.105.569	5,5%	972.954	4,9%	132.615	0,7%
1920	21.389.842	1.216.693	5,7%	1.073.679	5,0%	143.014	0,7%
1930	23.677.794	1.440.744	6,1%	1.263.632	5,3%	177.112	0,7%
1940	26.015.907	1.699.860	6,5%	1.475.702	5,7%	224.158	0,9%
1950	27.976.755	2.022.523	7,2%	1.750.045	6,3%	272.478	1,0%
1960	30.528.539	2.505.165	8,2%	2.136.190	7,0%	368.975	1,2%
1970	34.040.989	3.290.800	9,7%	2.767.061	8,1%	523.739	1,5%
1981	37.683.362	4.236.740	11,2%	3.511.599	9,3%	725.141	1,9%
1991	38.872.268	5.370.252	13,8%	4.222.384	10,9%	1.147.868	3,0%
2001	40.847.371	6.958.516	17,0%	5.378.194	13,2%	1.580.322	3,9%
2011	46.815.916	8.116.347	17,3%	5.659.442	12,1%	2.456.908	5,2%
2021	46.037.605	9.466.481	20,6%	6.462.726	14,0%	3.003.755	6,5%
2031	45.351.545	11.903.963	26,2%	8.044.599	17,7%	3.859.364	8,5%
2041	44.680.774	14.791.516	33,1%	9.531.604	21,3%	5.259.912	11,8%
2051	43.581.814	16.486.938	37,8%	9.327.682	21,4%	7.159.256	16,4%
2061	41.603.330	16.095.184	38,7%	7.326.273	17,6%	8.768.911	21,1%

* De 1900 a 2011 los datos son reales; de 2021 a 2061 se trata de proyecciones

Fuente: INE: INEBASE:
    1900-2001: Cifras de población.
    2011: Cifras de población. Resultados nacionales, Censos de Población y Viviendas 2011
    2021-2061: Proyecciones de población. Consulta en enero 2016.

Graph. 1.5. Evolution of old people; 1900-2061

The above data can be graphically seen in the diagram below, which shows the dramatic rise of people over the age of 65 in Spain, but above all the growth prospects of that sector of population in the not so distant future.

Figura 1.1.- Evolución de la población mayor, 1900-2061
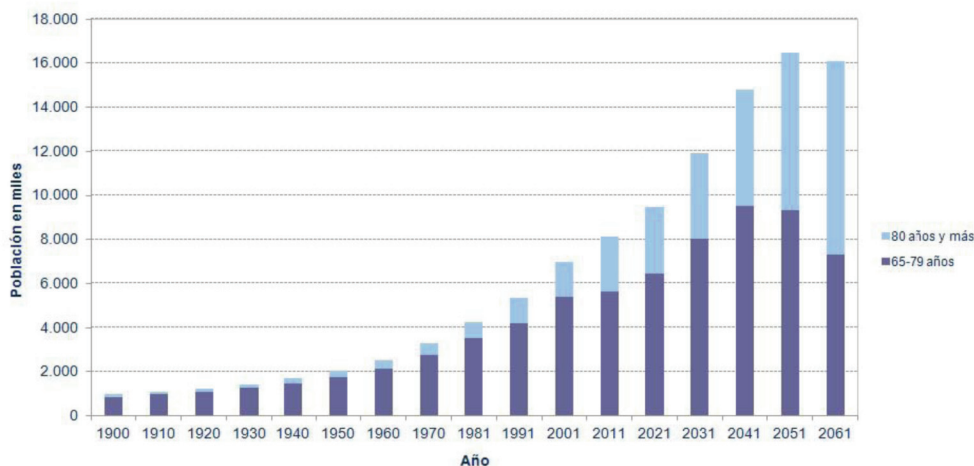
Graph. 1.6. Evolution of old people; 1900-2061

3. DEMOGRAPHIC CHANGE IN EUROPE AND THE WORLD

If we look at the distribution of people older than 65 by regions in 2011, they amount to in Africa 3.3% of the total, in Asia 6.6%, in Latin America and the Caribbean 6.7%, in Oceania 8.1%, in North America 12.8% and in Europe 16.1%. But according to the forecast made by the United Nations for the year 2050, in all geographic areas, the over 65 population will increase significantly, doubling in the case of Africa, reaching 6.6%, will almost triple in Asia and in Latin America and in the Caribbean going from 17.9% to 19%, respectively. In the case of Oceania, the population older than 65

will constitute 18.2% in 2050, in North America it will be 22% of the total and in Europe, this group of population will increase to 26.8%, which means that one out of three citizens will be older than 65.

Población mayor de 65 años por regiones, 2011–2050.

Africa 6,6 / 3,3
Asia 17,9 / 6,6
Latinoamérica y Caribe 19,0 / 6,7
Oceanía 18,2 / 8,1
América del Norte 22,0 / 12,8
Europa 26,8 / 16,1

2050 / 2011

Población (%)
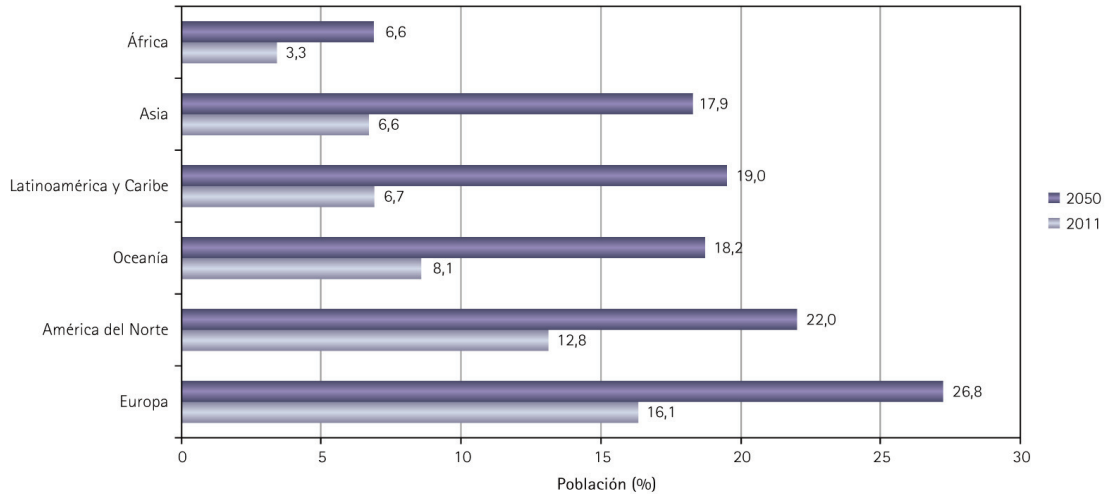
Fuente: United Nations: World Population Prospects: The 2010 Revision. Volumen I: Comprehensive tables. 2011.

Graph. 1.7. Population older than 65 by regions, 2011-2050

If we look at the projection for the world population in the year 2050 for some countries and we compare this with the Spanish case, we can see that in the year 2010 Spain was the fourth country in the world in the percentage of people older than 65 with 17.1%, surpassed only by Italy with 20.3%, Germany with 20.8% and Japan with 23%. In the projection for 2050, Spain will be the second most aged country in the world, with 34.4% of people older than 65

of the total, surpassed only by Japan with 36.5%. They are followed by Italy with 33%, Germany with 32.7% and France and the United Kingdom with 25.5% and 24.7% respectively. The increase of the percentage of the population over 65 in China is especially significant, which passes from 8.4% to 23.9%, Brazil from 6.9% to 22.5%, Vietnam from 6% to 23.1%, Mexico from 6% to 20.2% or Bangladesh that moves from 4.6% to 16.2%.

Población de 65 años y más en algunos países del mundo, 2010 y 2050

Población (%)

Japón 36,5 / 23,0
Alemania 32,7 / 20,8
Italia 33,0 / 20,3
ESPAÑA 34,4 / 17,1
Francia 25,5 / 16,8
Reino Unido 24,7 / 16,6
Ucrania 22,4 / 15,8
EE. UU. 21,4 / 13,1
Fed. Rusa 20,5 / 13,1
China 23,9 / 8,4
Brasil 22,5 / 6,9
Vietnam 23,1 / 6,5
México 20,2 / 6,0
Egipto 12,3 / 5,5
India 12,7 / 5,1
Indonesia 15,8 / 5,0
Bangladesh 16,2 / 4,6
Paquistán 9,6 / 4,3
Nigeria 3,8 / 3,8

2050 / 2010
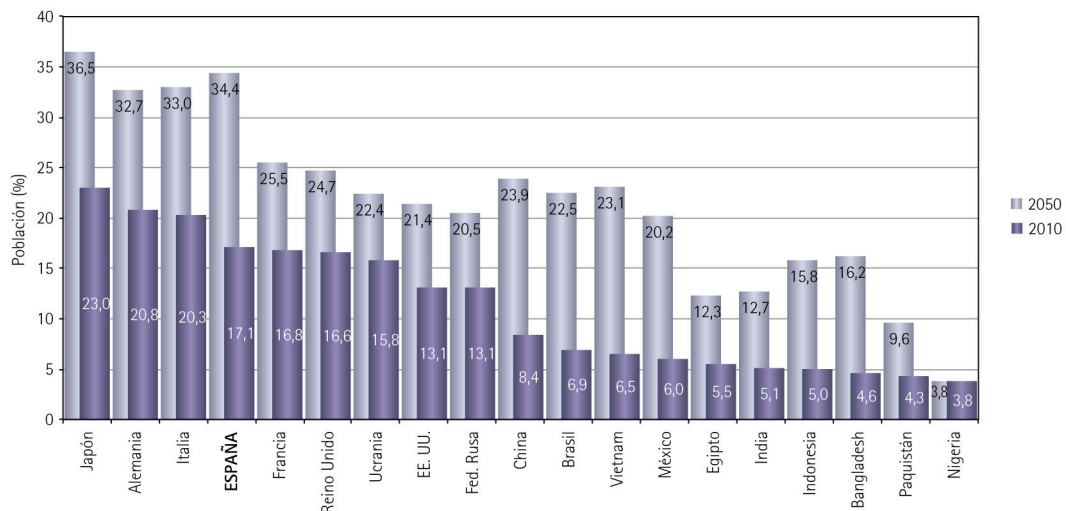
Fuente: United Nations: World Population Prospects: The 2012 Revision: http://esa.un.org/unpp. Consulta realizada en marzo de 2014.

Graph. 1.8. Population aged 65 and older in some countries of the world, 2010 and 2050

Based upon the projections of population included in the World Population Report of 2013[2], there is a direct relationship between an ageing population and economic development. According to the graphs below, people older than 65 will become the largest population group in the most developed areas at the beginning of the decade of the 20s in this century. In the most developed regions, this population group will be the largest in the 80s of this century, while in the less developed regions this group will not become the majority in this century, with the people between 0 and 19 remaining as the largest group, and the group of people older than 60 as the minority. Regarding the world population, the demographic inversion will also happen in the 80s, when older people will become the biggest population group, given that we find the largest number of people in the less developed regions.

Population by broad age group: world and development regions, 1950-2100
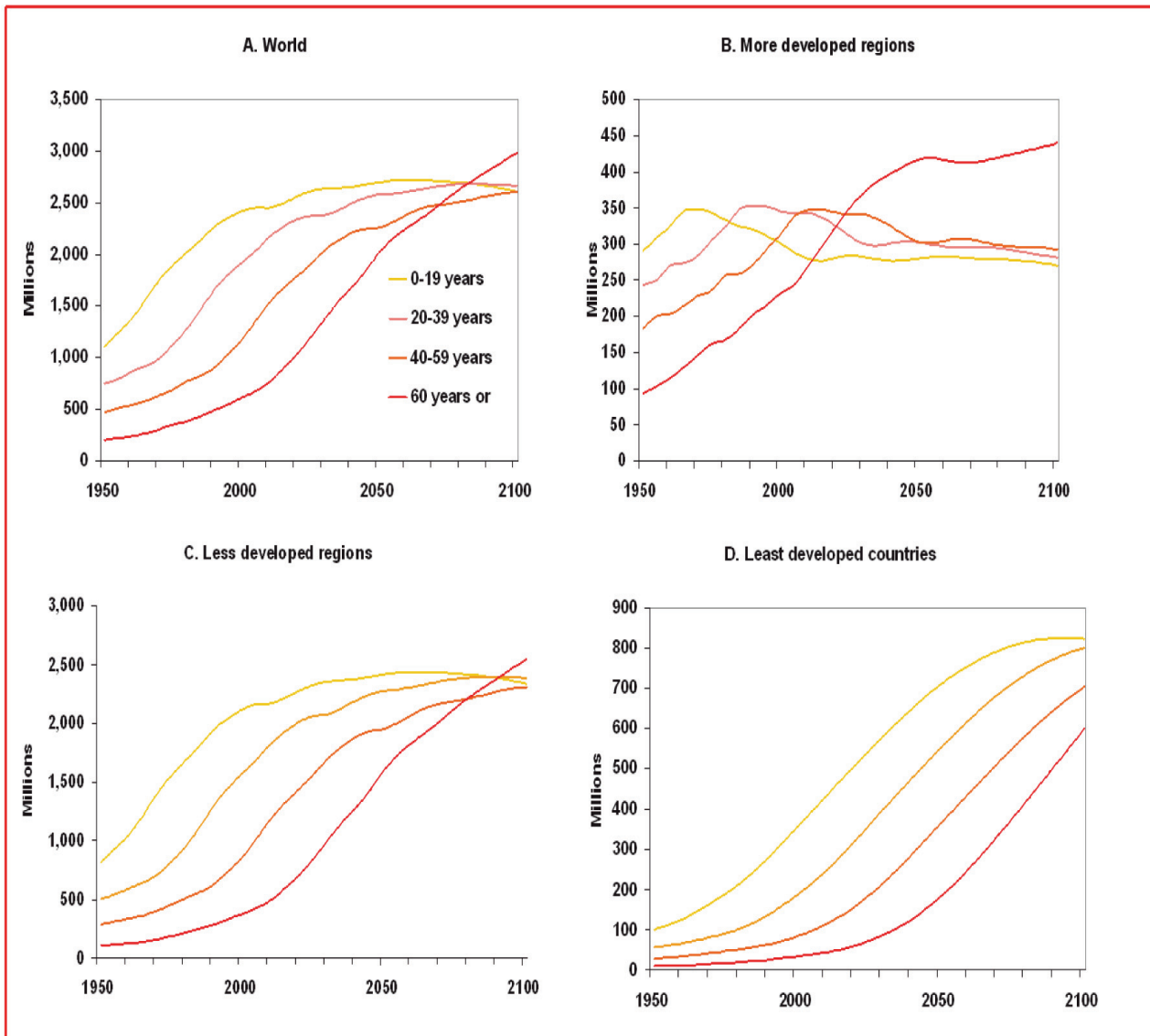
Graph 1.9.

We can see in the map below included in the "World Population Prospects. The 2015 Revision. Key Findings and Advance Tables" situation in the world of the population aged 65 and over[3].

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2 http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf

3 http://esa.un.org/unpd/wpp/publications/files/key_findings_wpp_2015.pdf

Population aged 65 and older, percent, 2015

Higher   Lower
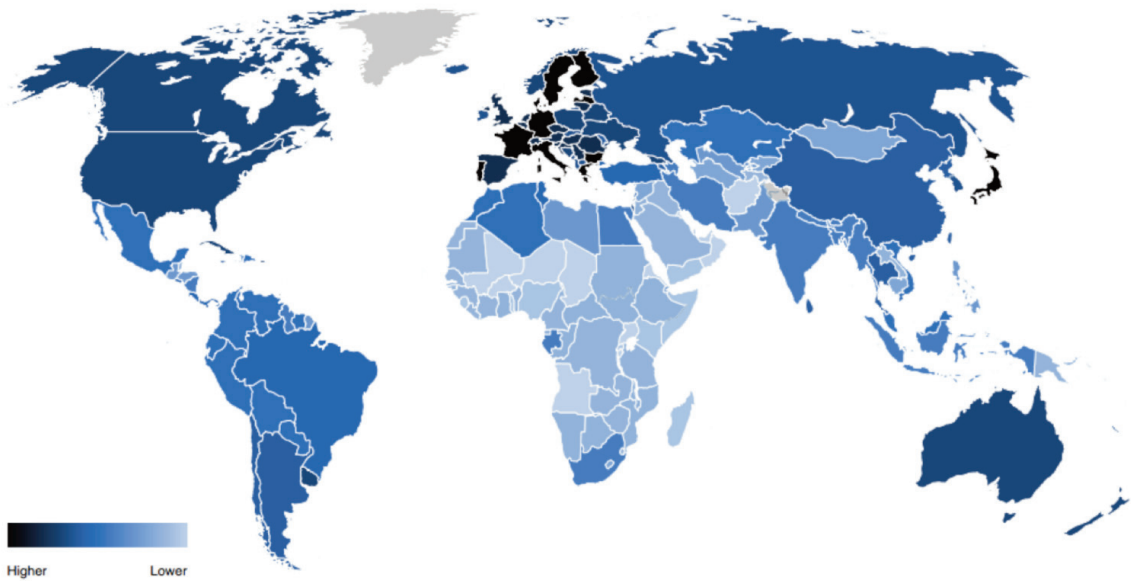
Graph 1.10.

As indicated by the European Union in its Ambient Assisted Living (AAL) Joint Programme, life expectancy in Europe has increased from 55 years in 1920 to 80 years nowadays. In 2020, around a quarter of the population in Europe will be older than 65 and the number of people aged between 65 and 80 will increase until nearly 40% of the European population between 2010 and 2030. If we analyze the projections made by the European Commission for the years 2070 and 2080 regarding the number of elderly dependents per 100 people, we find the countries with the highest ratio are Portugal and Slovakia, with more than 65 elderly dependents for every 100 inhabitants, followed by Germany with 60 elderly dependents for every 100 people, Poland, Italy and Greece. In the case of Spain, the number of elderly dependents for every 100 inhabitants does not even reach 50 in 2070 or 2080.

Projected old–age dependency ratio
Per 100 persons

geo
■ 2070 ■ 2080 ✖ No data
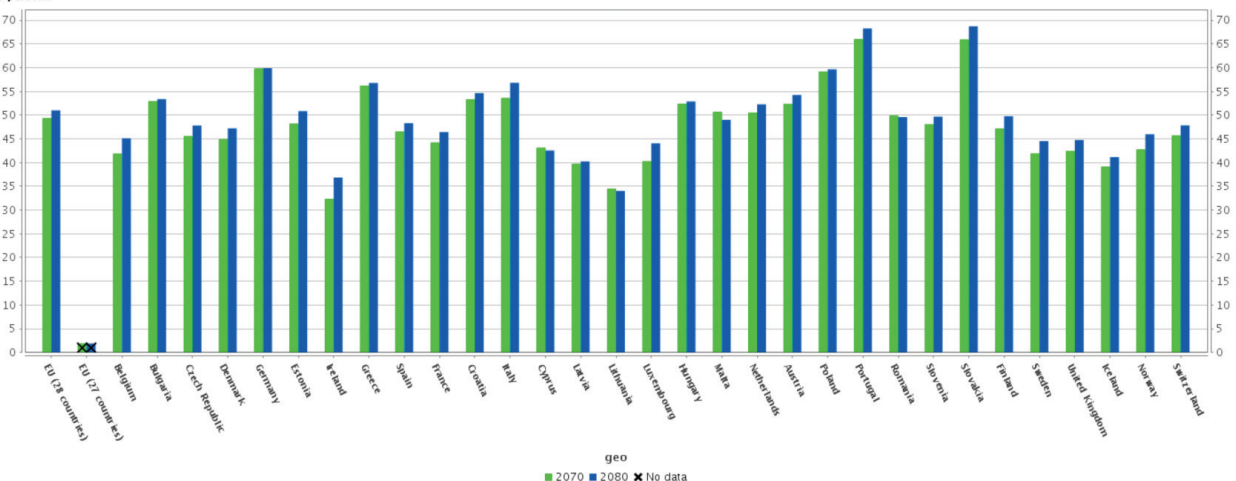
Graph 1.11.

Specifically about the increase of population between 2002 and 2012 in Europe, the biggest increases have occurred in Malta, where the people older than 65 increased 3.8% during this period over the total of the population, followed by Lithuania with 3.6%, Germany with 3.5% and Latvia with 3.2%. About Spain, the population older than 65 has only increased by 0.4%, while the population from 0 to 14 has increased 0.6% (from a 14.5% to 15.1% of the

total) and the population between 15 and 64 years old decreased 1%, passing from 68.5% to 67.5% of the total. If we look at the countries that in 2012 had the oldest population at the European level, we find Italy in first place with 20.8% of population older than 65, followed by Germany with 20.6%, Greece with 19.7% and Bulgaria 18.8%. Regarding the 28 EU member States, Spain is located in 13th position with 17% of population older than 65.

	0–14 years old		15–64 years old		65 years old or over	
	2002	2012	2002	2012	2002	2012
EU-28 (¹)	16.8	15.6	67.2	66.5	16.0	17.9
Belgium (¹)	17.5	17.0	65.6	65.7	16.9	17.3
Bulgaria (¹)	15.0	13.4	68.1	67.8	16.9	18.8
Czech Republic	15.9	14.7	70.3	69.1	13.9	16.2
Denmark	18.7	17.7	66.5	65.0	14.8	17.3
Germany	15.3	13.2	67.6	66.1	17.1	20.6
Estonia (²)	16.9	15.5	67.6	66.8	15.4	17.7
Ireland	21.2	21.6	67.6	66.5	11.1	11.9
Greece	15.2	14.7	67.4	65.6	17.4	19.7
Spain	14.5	15.1	68.5	67.5	17.0	17.4
France	19.0	18.6	65.0	64.3	16.0	17.1
Croatia (²)	16.6	15.1	66.9	67.0	16.5	17.9
Italy	14.2	14.0	67.1	65.2	18.7	20.8
Cyprus	21.5	16.5	66.8	70.7	11.7	12.8
Latvia	16.7	14.3	67.9	67.2	15.4	18.6
Lithuania	19.0	14.8	66.5	67.1	14.5	18.1
Luxembourg (¹)	18.9	17.1	67.1	68.9	13.9	14.0
Hungary (¹)	16.3	14.5	68.4	68.6	15.3	16.9
Malta	19.2	14.8	68.2	68.8	12.6	16.4
Netherlands	18.6	17.3	67.7	66.5	13.7	16.2
Austria	16.7	14.6	67.8	67.6	15.5	17.8
Poland (¹)	18.4	15.1	69.0	71.1	12.6	13.8
Portugal	16.2	14.9	67.3	66.0	16.6	19.0
Romania	17.7	15.2	68.4	68.5	13.9	16.3
Slovenia (¹)	15.4	14.3	70.1	68.9	14.5	16.8
Slovakia	18.7	15.4	69.9	71.8	11.4	12.8
Finland	17.9	16.5	66.9	65.4	15.2	18.1
Sweden	18.2	16.7	64.6	64.5	17.2	18.8
United Kingdom	18.7	17.6	65.4	65.6	15.9	16.8
Iceland	23.1	20.7	65.3	66.6	11.6	12.6
Liechtenstein	18.4	15.8	71.1	69.8	10.5	14.4
Norway	20.0	18.5	65.0	66.1	14.9	15.4
Switzerland (¹)	16.9	15.0	67.5	67.8	15.6	17.2
Montenegro (¹)(²)	:	18.9	:	68.1	:	13.0
FYR of Macedonia (²)	21.6	17.2	68.0	71.0	10.4	11.8
Serbia (¹)	16.1	14.4	67.3	68.3	16.6	17.3
Turkey	29.6	25.3	64.9	67.4	5.5	7.3

(¹) Break in time series.
(²) The population of unknown age is redistributed for calculating the age structure.
Source: Eurostat (online data code: demo_pjanind)

Graph 1.12.

The projections of Eurostat for Europe 2020-2080 show that the population between 65 and 79 years old will pass from 13.1% in 2013, to 14.6% in 2020, 17.9% in 2040 and will decrease again to 16.6% in 2060 and to 16.4% in 2080. Nevertheless, the population older than 80 will increase from 5.1% of the total in 2013, to 5.8% in 2020, in 2040 it will reach 9%, 11.8% in 2060 and in 2080 12.3%. From the total of European citizens, in 2080 almost one out of every three citizens will be older than 65.
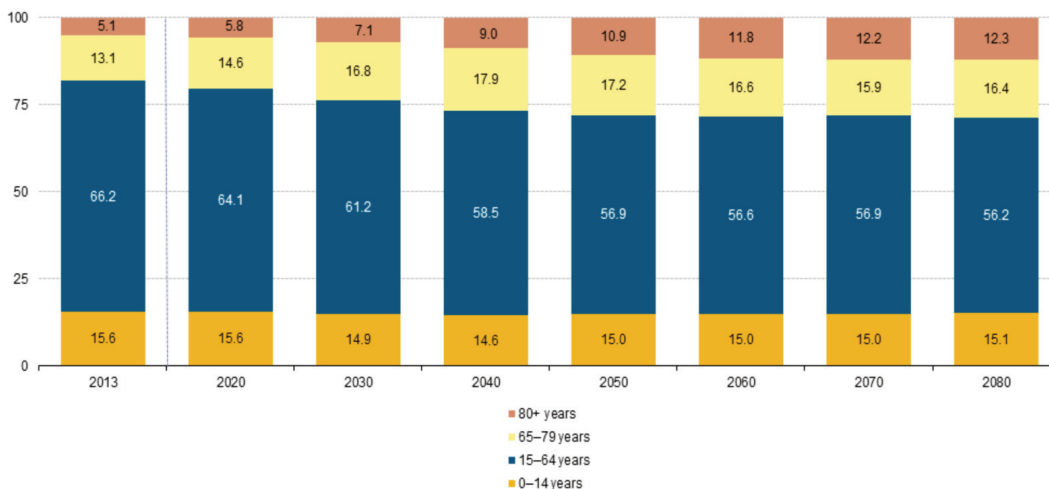
(¹) 2020–80: projections (EUROPOP2013).
Source: Eurostat (online data codes: demo_pjangroup and proj_13npms)

Graph 1.13.

Data by age groups does not vary excessively in the Eurostat data for 2014, since the countries with the highest percentage of population between 65 and 79 years old are still Italy (21.4%), Germany (20.8%%), Greece (20.5%) and Portugal (19.9%). Spain is located in fourteenth position, with 18.1% of people between 65 and 79 of the total population. If we look, however, at people over the age of 80, Italy still holds first position with 6.4% of the total population, but followed by Greece with 6% and then Spain and France with 5.7%.

Table 4: Population age structure by major age groups, 1 January 2014

	0-14 years old		15-64 years old		65 years old or over		80 years old or over	
	(1000)	(%)	(1000)	(%)	(1000)	(%)	(1000)	(%)
EU-28	79092.5	15.6	333782.1	65.9	93949.9	18.5	26041.4	5.1
BE	1906.1	17.0	7303.5	65.2	1994.4	17.8	597.9	5.3
BG	996.1	13.7	4831.9	66.7	1417.7	19.6	322.0	4.4
CZ	1577.5	15.0	7109.4	67.6	1825.5	17.4	412.0	3.9
DK	968.7	17.2	3631.8	64.5	1026.7	18.2	234.9	4.2
DE	10606.8	13.1	53336.4	66.0	16824.2	20.8	4359.6	5.4
EE	208.0	15.8	866.0	65.8	241.8	18.4	64.2	4.9
IE	1013.3	22.0	3011.4	65.4	580.7	12.6	137.1	3.0
EL	1597.8	14.7	7069.5	64.8	2236.4	20.5	655.3	6.0
ES	7067.0	15.2	31005.2	66.7	8440.0	18.1	2650.4	5.7
FR	12222.0	18.6	41767.7	63.4	11845.9	18.0	3756.0	5.7
HR	627.6	14.8	2836.5	66.8	782.7	18.4	189.9	4.5
IT	8448.1	13.9	39319.6	64.7	13014.9	21.4	3877.4	6.4
CY	139.6	16.3	599.4	69.9	119.0	13.9	26.5	3.1
LV	294.4	14.7	1325.5	66.2	381.6	19.1	95.8	4.8
LT	430.1	14.6	1970.6	66.9	542.7	18.4	146.3	5.0
LU	92.6	16.8	379.8	69.1	77.4	14.1	21.7	3.9
HU	1425.8	14.4	6719.7	68.0	1731.8	17.5	412.1	4.2
MT	61.2	14.4	288.1	67.7	76.0	17.9	16.5	3.9
NL	2850.1	16.9	11060.2	65.7	2919.0	17.3	717.1	4.3
AT	1218.8	14.3	5731.3	67.4	1556.7	18.3	426.2	5.0
PL	5718.7	15.0	26639.1	70.1	5660.0	14.9	1480.5	3.9
PT	1521.9	14.6	6835.6	65.6	2069.8	19.9	577.7	5.5
RO	3094.6	15.5	13556.1	68.0	3296.6	16.5	789.2	4.0
SI	301.1	14.6	1399.9	67.9	360.1	17.5	96.2	4.7
SK	829.9	15.3	3852.9	71.1	733.1	13.5	164.9	3.0
FI	895.0	16.4	3499.7	64.2	1056.5	19.4	272.8	5.0
SE	1646.1	17.1	6126.6	63.5	1872.2	19.4	497.7	5.2
UK	11333.5	17.6	41708.7	64.9	11266.1	17.5	3043.5	4.7

Source: Eurostat (online data code: demo_pjan and demo_pjanind)

Graph 1.14.

According to the Eurostat data for 2014 on the population older than 65 in European Union countries, we can verify that the majority of countries are below the EU average, located near 18.5% of the population. The countries with the oldest population are Italy and Germany, with more than 21% and near 21%, respectively. Spain is at levels close to the EU average, slightly higher than 18%. Ireland, Slovakia and Cyprus have the least aged population, with less than 14% of people over the age of 65 of the total population.

Figura 1.5.- Población de 65 y más años en la Unión Europea, 2014 (porcentaje)
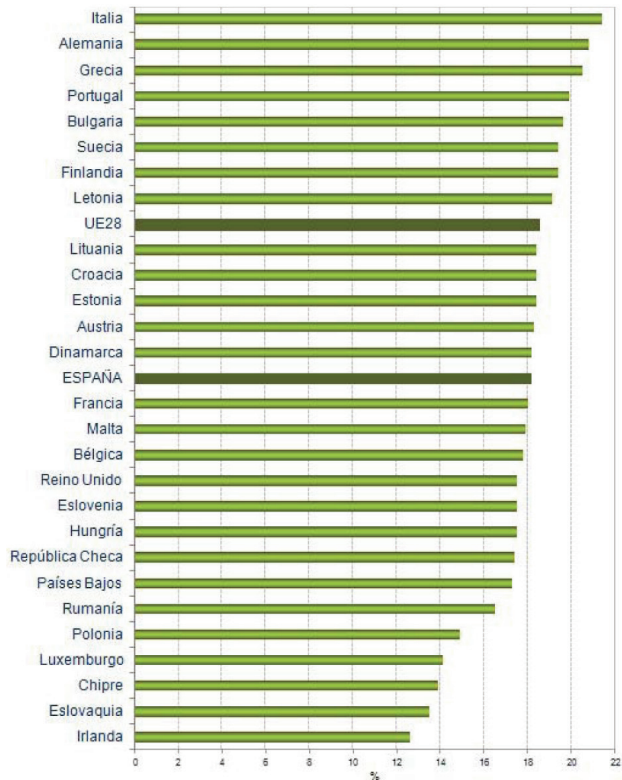
Fuente: 2014: EUROSTAT. Population on 1 january: Structure indicators (demo_pjanind).

Graph. 1.15. People aged 65 and older in the European Union, 2014 (percentage)

In spite of the previous data, the prospects for Spain compared to the rest of EU countries are conditioned by the increase of life expectancy of the Spanish population at 65. As we can see in the following charts, both Spain and France have the highest life expectancy at 65, estimated at 19.2 and 19.3 years respectively for men, and 23.4 and 23.6 respectively in the case of women.

Chart 12: Life expectancy at 65, men and women, 2003 and 2013
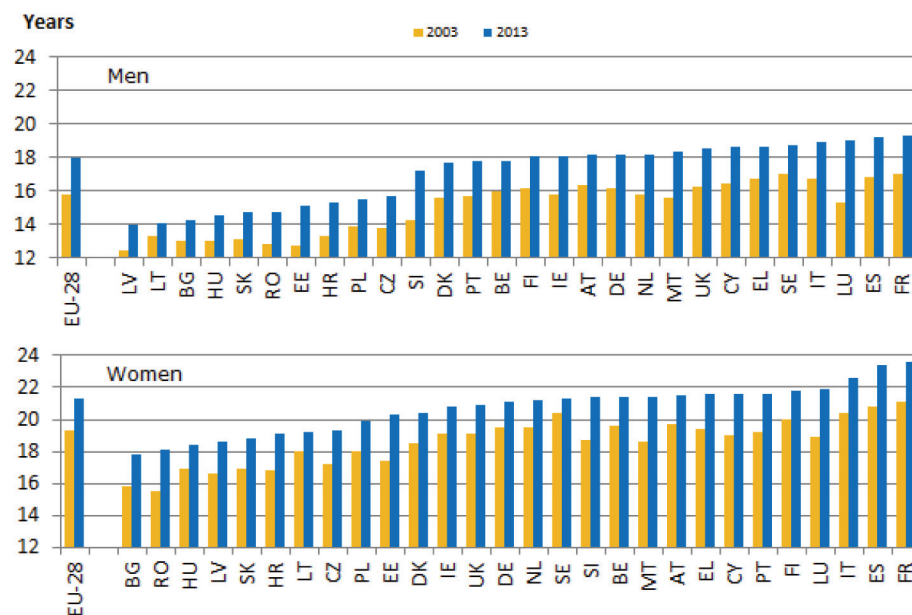
Source: Eurostat (online data code: demo_mlexpec)

Graph 1.16.

For its part, the highest life expectancies at birth, referring to the male sex, belongs to the Italians with 80.3 years, followed by the Spaniards and the Swedes with 80.2 years. In the case of women, the countries with the highest life expectancy are Spain with 86.1 years, followed by France with 85.6 years, Italy with 85.2 years and Cyprus with 85.

Tabla 2.1.- Esperanza de vida al nacer y a los 65 años en distintos países europeos, 20

	Esperanza de vida al nacer		Esperanza de vida a los 65 años	
	Hombres	Mujeres	Hombres	Mujeres
Unión Europea (28)	77,8	83,3	17,9	21,3
Alemania	78,6	83,2	18,2	21,1
Austria	78,6	83,8	18,2	21,5
Bélgica	78,1	83,2	17,8	21,4
Bulgaria	71,3	78,6	14,2	17,9
Chipre	80,1	85,0	18,6	21,6
Croacia	74,5	81,0	15,3	19,1
Dinamarca	78,3	82,4	17,7	20,4
Eslovaquia	72,9	80,1	14,7	18,8
Eslovenia	77,2	83,6	17,2	21,4
España	80,2	86,1	19,2	23,4
Estonia	72,8	81,7	15,2	20,3
Finlandia	78,0	84,1	18,0	21,8
Francia	79,0	85,6	19,3	23,6
Grecia	78,7	84,0	18,7	21,6
Hungría	72,2	79,1	14,5	18,4
Irlanda	79,0	83,1	18,1	20,8
Italia	80,3	85,2	18,9	22,6
Letonia	69,3	78,9	13,9	18,6
Lituania	68,5	79,6	14,1	19,2
Luxemburgo	79,8	83,9	19,1	21,9
Malta	79,6	84,0	18,4	21,4
Países Bajos	79,5	83,2	18,2	21,2
Polonia	73,0	81,2	15,5	19,9
Portugal	77,6	84,0	17,8	21,6
Reino Unido	79,2	82,9	18,6	20,9
República Checa	75,2	81,3	15,7	19,3
Rumania	71,6	78,7	14,7	18,1
Suecia	80,2	83,8	18,8	21,3

Fuente: EUROSTAT. 2013. Consulta realizada en enero de 2016.

Graph. 1.17. Life expectancy at birth and at 65 in several European countries, 20. Source: Eurostat. 2013. Consultation made in January, 2016.

4. The Generational Digital Divide in Europe and the United States of America

The Digital agenda for Europe was created in May, 2010 to boost the European economy, taking advantage of the sustainable economic and social benefits from the digital single market. With the goal of achieving, in the year 2020, that access to information technology and its use become generalized for all European Union citizens, the monitoring of the development of the main parameters which mark this development in the digital inclusion of the European citizens is proposed. This development can be traced through a series of indicator groups, which in turn includes a series of analysis indicators. These are applied in turn and broken down into a series of groups of population depending on a variety of circumstan-

ces. Besides, all these indicators can fuse together and make multiple combinations. All of them can be checked in the following website: http//digital-agenda-dat.eu/datsets/digital_agenda_scoreboard_key_indicators

We can find amongst the main indicators groups with their sub indicators, which specifically referred to the case in question, the following:

• USE OF THE INTERNET

  - households with internet access

  - Internet use in the last three months

  - Internet use in the last 12 months

  - Regular Internet users

  - Frequent Internet users

  - Internet connection using laptop or tablet outside the home

- Individuals who have never connected to the Internet
- Rate of diversification in the use of the Internet[4]

- USE OF THE SERVICES OFFERED BY THE INTERNET
    - Information about goods and services
    - Read or download the press on the Internet
    - Games, images, films or music
    - Online banking
    - Telephone or video calls via the Internet
    - Upload self-created content
    - Participate in social networks
    - Search for a job or sending a job application
    - Take a course online
    - Information about education or teaching
    - Use of public administration online services in the last three months
    - Sending of online forms to the public administration in the past three months
    - Take part in an inquiry or vote online
    - Use of the Internet storage spaces

Amongst the groups of indicators (with their own set of sub indicators) we can also find:

- THE TELECOMMUNICATIONS SECTOR
- BROADBAND ACCESS AND COVERAGE
- BROADBAND SPEEDS AND PRICES
- MOBILE MARKET
- AUDIOVISUAL CONTENT
- E-ADMINISTRATION
- E-COMMERCE
- E-BUSINESS
- ICT IN EDUCATION (formal)
- E-HEALTH
- ICT SECTOR
- DEVELOPMENT PROGRAMS AND RESEARCH IN THE EU

These indicators are applied to a series of groups of population that are broken down according to the following criteria:

- TOTAL OF INDIVIDUALS
- AGE (3 GROUPS)
    - 16 to 24
    - 25 to 54
    - 55 to 74
- AGE (6 GROUPS)
    - 16 to 24
    - 24 to 34
    - 35 to 44
    - 45 to 54
    - 55 to 64
    - 65 to 74
- EDUCATION LEVEL
    - Low
    - Medium
    - High
- EMPLOYMENT STATUS
    - Employees, self-employees, homeworkers
    - Unemployed
    - Students
    - Retired or inactive people
- GENDER
    - Man
    - Woman

Other classification criteria for different individuals are:

- COUNTRY OF BIRTH
- CITIZENSHIP
- DISADVANTAGE FACTORS
- COMPUTER SKILLS
- RURAL OR URBAN HABITAT

We have decided to select, amongst all of these indicators and population groups, those most closely linked to the subject of this report, therefore giving priority to indicators about the use of the Internet applied to the itemisation of population into 6 age groups. Thus, one of the

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4 The rate of diversification is based on counting the number of activities, out of a list of 12, which have been undertaken at least once in the previous months. It is calculated at the individual level for the people that have used the Internet in the last three months.

first questions that we will analyse is the percentage over the total of the frequent user population of the Internet (those who connect no less than once every day) in relation with the number of frequent users in the age range between 65 and 74. The following graph shows how Luxemburg, Norway and Denmark are the countries where both percentages are higher, with ratios of over 85% of frequent users of the total population and with percentages superior to 60% of frequent users aged between 65 and 74. At the opposite end, we find Romania, Turkey and Bulgaria with a direct relation in the lowest range between the total numbers of habitual internet-users and the eldest habitual internet-users. If we compare the percentage of Internet users between the ages of 65 and 74 with the percentage of total Internet users in the country, we find that the country where

the greatest difference between both percentages is Greece, where less than 10% of people between 65 and 74 connect to Internet, while the total of habitual Internet users is near 55%. In similar circumstances we find Macedonia, Lithuania and Portugal. The greater balance between frequent internet-users in the total population with respect to habitual internet-users amongst older people is found in France, Belgium and Germany, with percentages of around 40% of daily users of the Internet between 65 and 74 years old, and ratios of total daily users of the Internet over 65% and in the German case above 75%. Spain is placed in a low position in the percentage of habitual elderly internet-users (around 20%), and in an intermediate situation, with respect to the rest of the EU countries in the total percentages of frequent internet-users (near 65%).
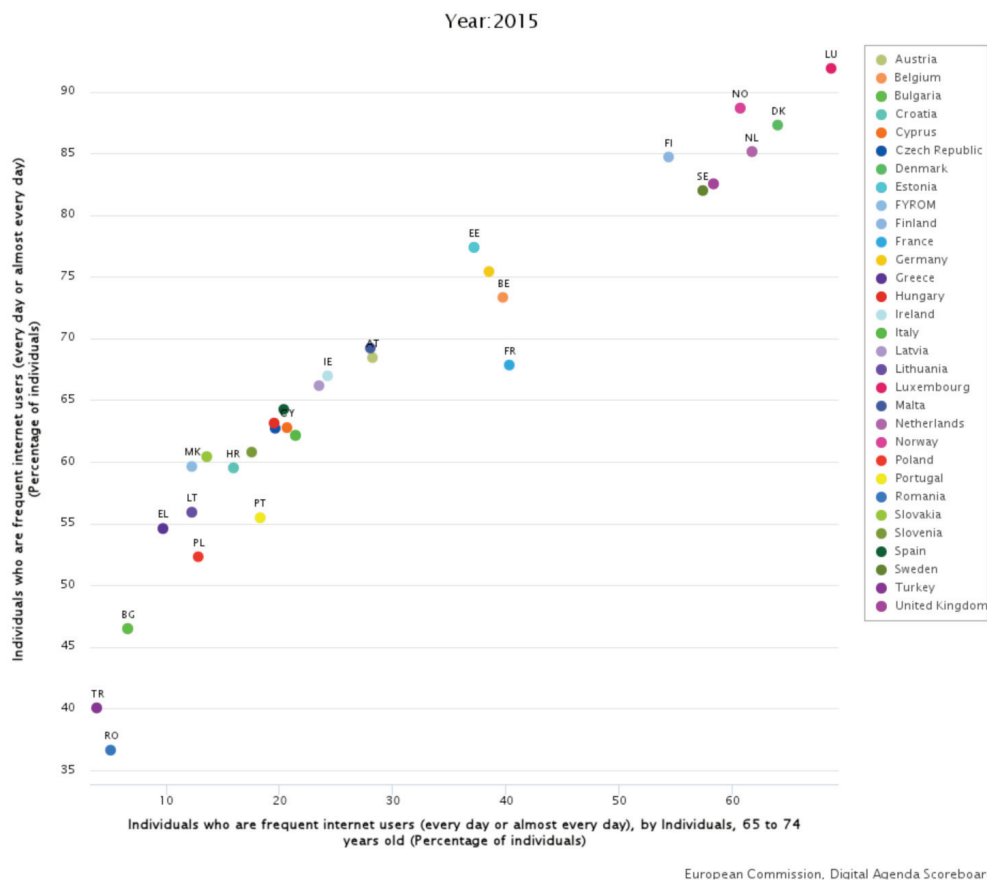
Graph 2.1.

If we compare the above graphical data with the relation between the percentage of population that has never connected to the Internet with the percentage of people between 65 and 74 years old who have neither connected to

the Internet the results are very similar. Norway stands out especially, with the lowest percentage of users aged between 65 and 74 who have never connected to the Internet, related to the percentage of the total population that

has never done it. We find very low percentages (always below 20%) of people between 65 and 74 years old who have never connected to the Internet, but higher than the percentages for the total population that has never done it, in Luxembourg, Denmark, the Low Countries and Sweden. At the other extreme, we find Turkey, with a significant situation, as more than 90% of the population between 65 and 75 years old have never connected to the Internet and 45% of the total population. In the case of Greece, Bulgaria and Romania, the percentages of people between 65 and 74 years old

who have never been connected to the Internet are above 80% in the two first and it almost reaches that percentage in Romania. In these countries, the percentage of the total population that has never connected to the Internet is between 30 and 35%. If we refer to the Spanish case, the generational digital divide displayed when checking the number of people between 65 and 74 years old who have never connected to the Internet is around 65%, while the percentage for the total population is inferior to 20%.
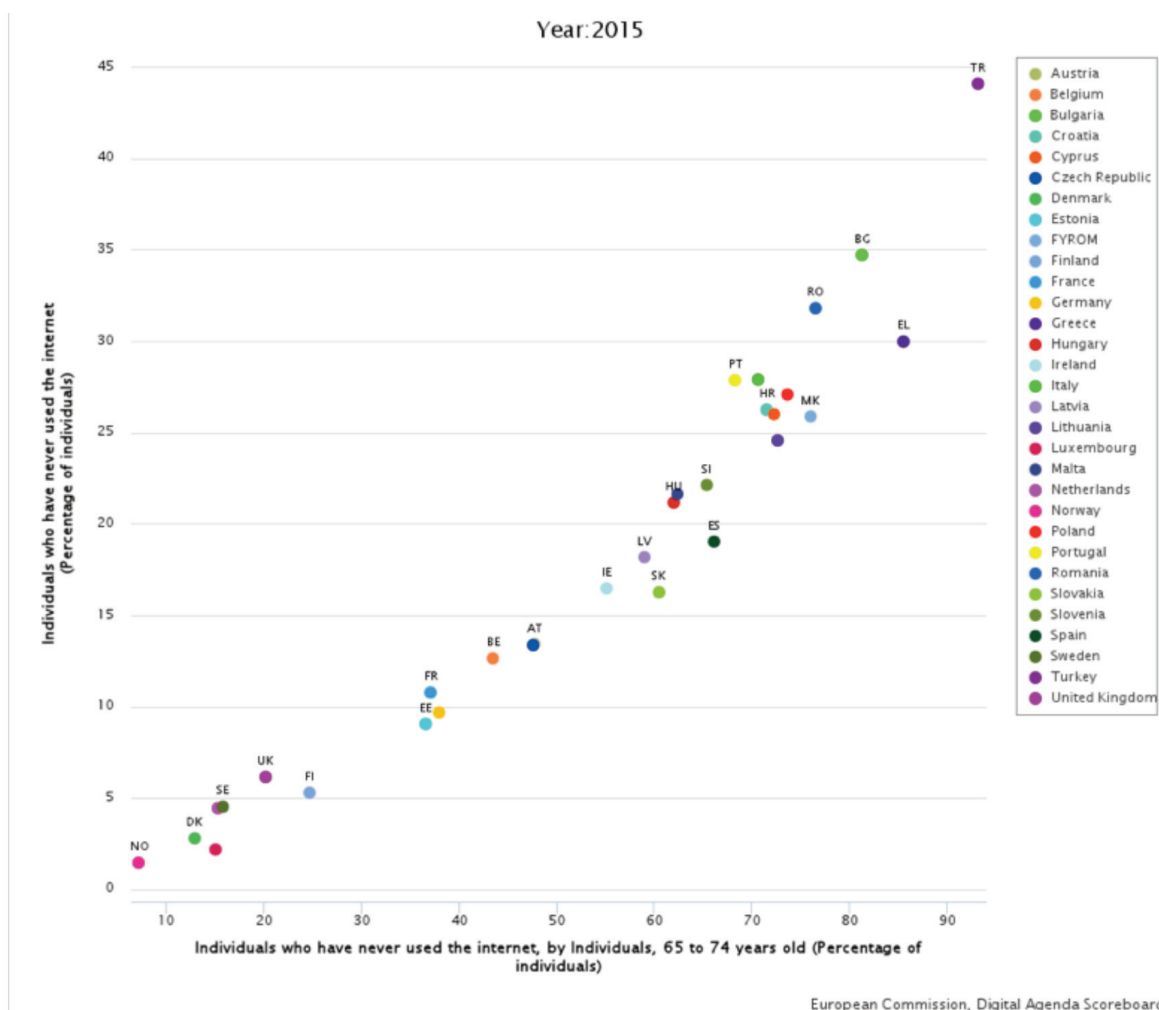
Graph 2.2.

We can geographically check the data previously commented comparing these two maps of Europe, where the intensity of colours goes from a higher percentage of people who have never connected to the Internet, represented by dark colours to a lower percentage of people who have never connected to the Internet, represented by light colours. On the left, we find the map that represents the percen-

tage of the total population that have never connected to the Internet and on the right, the percentages of people between 65 and 74 years old who have neither ever connected to the internet. The change of colour (to a darker one) on the right hand map shows the existence of a certain divide of a generational character.
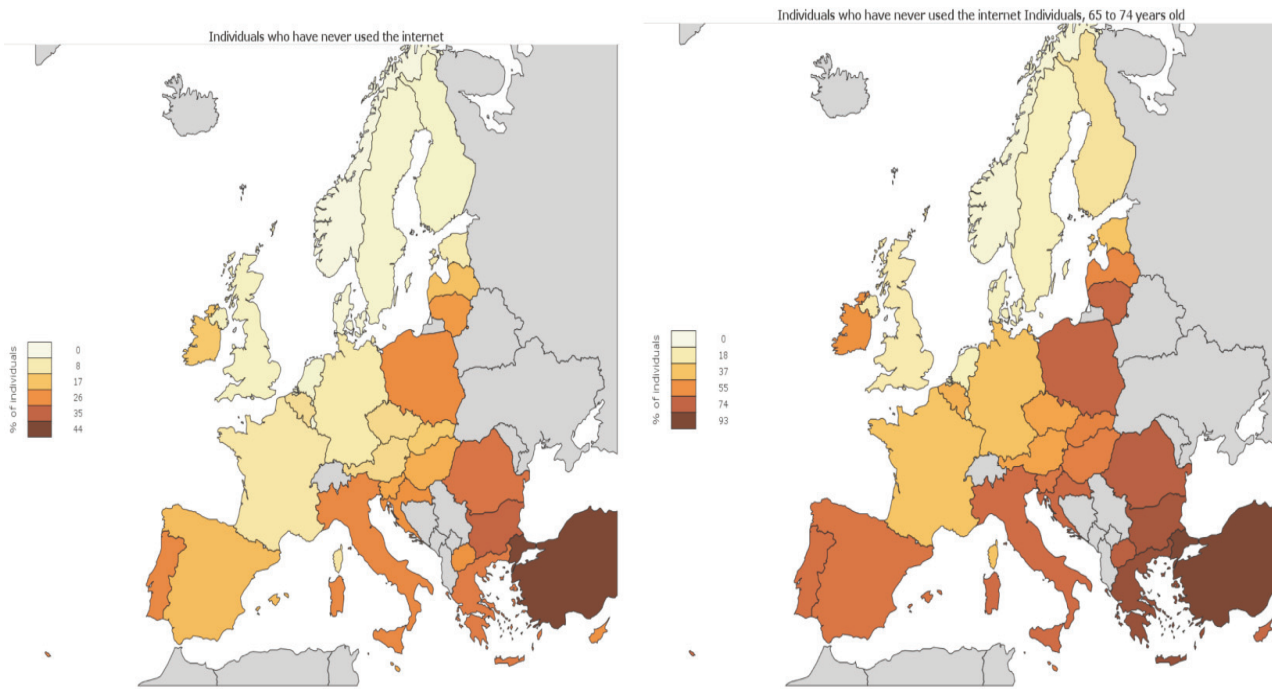
Graph 2.3.

Analysing the percentages by age groups of individuals who have never connected to the Internet, we find a number of data especially significant which are expressively reflected in the graph below. The first thing that attracts attention is the nonexistence of people who have never connected to the Internet in certain age groups in several European countries. Thus, in the age group of people between 16 and 26 years old all the members of this group have connected at some time to the Internet in Denmark, Estonia, Finland, Luxembourg, Norway, Sweden and Slovenia. All members of the age group between 25 and 34 years old have done so in Finland, Norway and Luxembourg, and in these last two countries, all people between 35 and 44 years old have connected at some time to the Internet. Thereupon, we can conclude that in these two countries digital inclusion is complete between the ages of 16 and 44. At the opposite end, we find again Turkey with 93.1% of people between 65 and 74 years old who have never connected to the Internet, 80.2% of people between 55 and 64 years old who have neither done it; while, in this country, the lowest percentage of people who have never connected to the Internet is the age group between 16 and 24 at 17.6%. Greece and

Poland are the countries with the biggest percentage differences amongst the various age groups of people who have never connected to the Internet, where the percentage of youths between 16 and 24 years old who have never connected to the Internet is 1.87% and 0.77% respectively. In Spain, the generational gap in the use of the Internet occurs from the age of 55. In the first four age blocks (from 16 to 24, 25 to 34, 35 to 44 and 45 to 54) the percentages of people who have never connected to the Internet remains at reasonable rates (0.85%, 3.71%, 6.23% and 15.3%), near the EU averages which are 1.77%, 3.26%, 6.92% and 13.7% respectively. The qualitative leap occurs in the age group of 55 to 64 years old, where the number of people who have never connected to the Internet becomes 35.2% (compared to the EU 28.4%) and jumps to 66.1% amongst people between 65 and 74 years old (the EU average being 49.2%). The EU average is largely conditioned by Norway, which in addition to the data seen above, in the age groups 45 to 54, 55 to 64 and 65 to 74 years has percentages of people who have never connected to the Internet of 0.44%, 2.99% and 7.23% respectively.

Individuals who have never used the internet, by Age (6 groups)
Year:2015

Legend
■ Individuals, 16 to 24 years old
■ Individuals, 25 to 34 years old
■ Individuals, 35 to 44 years old
■ Individuals, 45 to 54 years old
■ Individuals, 55 to 64 years old
■ Individuals, 65 to 74 years old

European Commission, Digital Agenda Scorebo
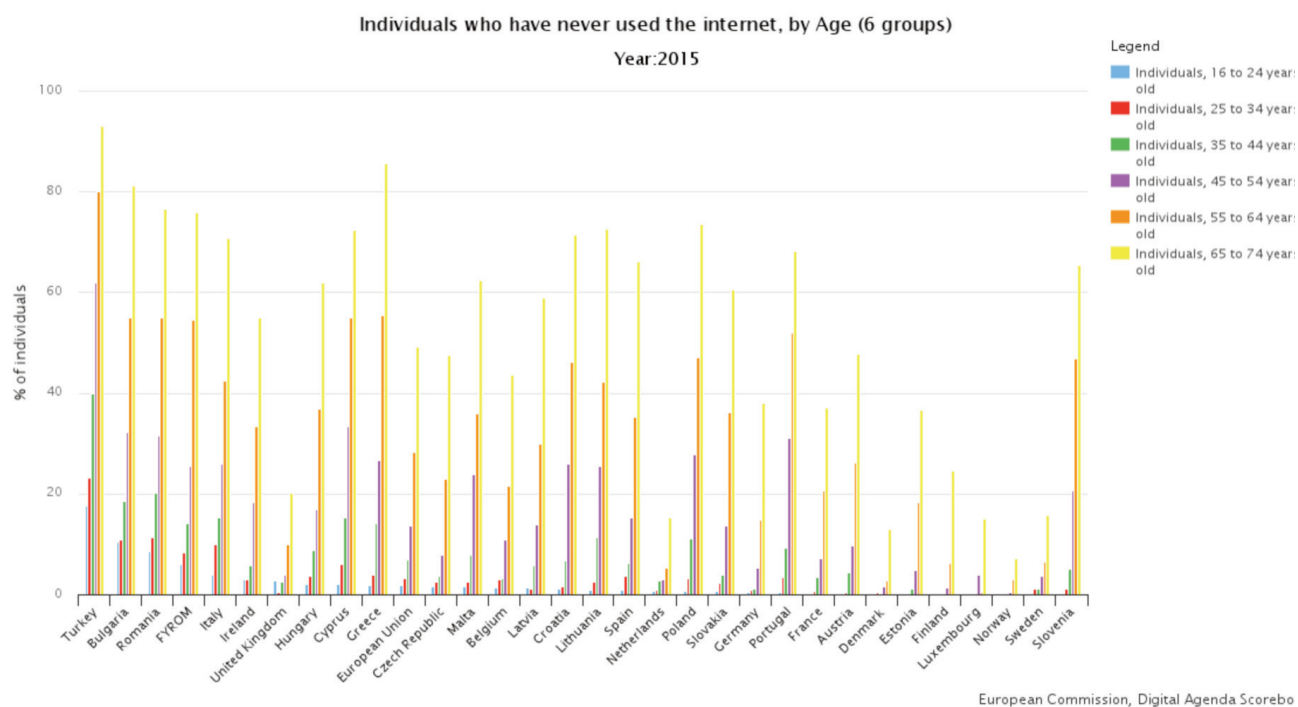
Graph 2.4.

If we compare the percentage of people aged 65 to 74 who have never connected to the Internet amongst some European countries, we realize the important differences that exist, as well as the different development they have had. The EU average in this group of population which has never connected to the Internet has gone from 80.3% in the year 2007, to 64.9% in the year 2011 and to 49.2% in 2015. The most significant cases are probably France, Luxembourg and Great Britain. In France, the reduction in the percentage of people between 65 and 74 who have never connected to the Internet went down by 54.6% between 2006 and 2005 (going from 91.7% to 37.1%), while in the case of Luxembourg, this percentage descended from 73.4% in the year 2006 to 15% in 2015, which has meant a reduction of 58.4 percentage points in people aged 65 to 74 who have never connected to the Internet. The British case is similar in percentage to the French one, since the percentage of this population group who have never connected to the Internet went from 72.2% (2005) to 20.1% (2015), representing a percent reduction of 52.1%. At the opposite end we find Turkey, which has only managed to reduce by 5% the number of people who have never connected

to the Internet, given that from 98.3% in 2006, nine years later, the percentage of people who had never connected to the Internet remained at a percentage of 93.1%. In the case of Romania, Italy, Spain and Portugal we find reductions which are not especially significant in the analysed period of time (2006-2015). The percentages of people who never connected to the Internet between the ages of 65 to 74 were reduced 22.4 percentage points, 21.8 points, 27.7 points and 28.3 points respectively. The percentage of people of this age group who never connected to the Internet in 2015 were, in the Romanian case, 76.5% of the total of this population group, 70.7% in Italy, 68.3% in the Portuguese case and 66.1% of the total of the Spanish population between 65 and 74 years old. If we look at the countries with less proportion of people aged 65 and 74, who have never connected to the Internet, we find two Nordic countries: Denmark and Norway. In the first one, this percentage is 12.9% in 2015, when in the year 2005 it was 58.4%. In the Norwegian case, the current percentage of population between 65 to 74 years old who have never connected to the Internet in 2015 is 7.23%, when in 2005 it was 58%.

Individuals who have never used the internet, by Individuals, 65 to 74 years old

DK
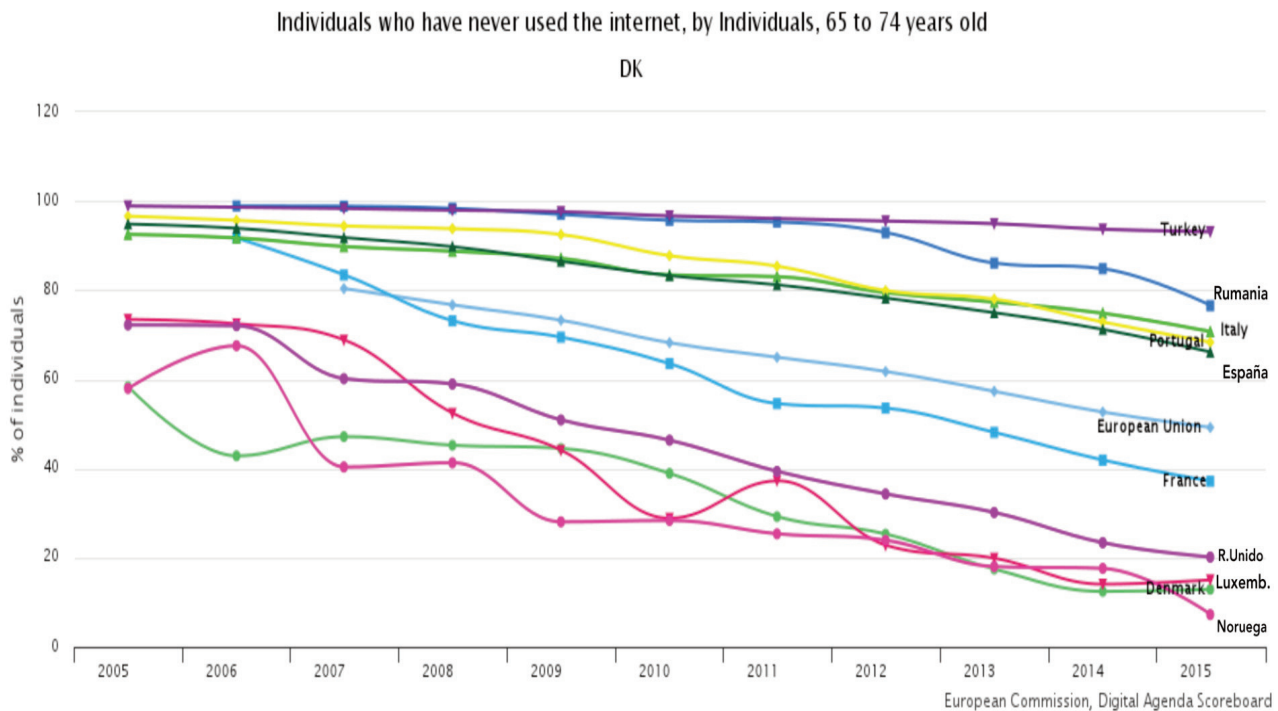
Graph 2.5.

Another criteria that can help us to assess the existence of a digital divide of a generational character is the use of certain devices to connect to the Internet. Analysing the situation of some European countries, we can assess where there exists a greater difference amongst the different age groups, we observe that in a paradigmatic country in the use of ICT by its citizens such as Norway, the difference of population who connect to the Internet by mobile devices (including mobile phones) between the 16 to 24 age group and the 65 to 74 age group is 29.3 percentage points (from 62.5% to 33.2%). In the case of Norway, all the age bands remain at higher percentages than 50% in this section, except people between 55 and 64 years old that comes near it with a percentage of 48.2% and the previously seen group of people aged 65 to 74. Portugal is probably where the digital divide is bigger in this field, given that while young people between 16 to 24 connect to the Internet using tablets and laptops with a percentage of 59.9%, the percentage of use goes down significantly (43.6% in ages between 25 to 34 years, 36.1% in ages between 35 to 44, 21.3% in ages between 45 to 54 and 9% in ages between 55 and 64) until reaching 7.9% in the age band between 65 to 74, implying a percentage difference between the two extreme age bands of more than 52 points. The percentage differences between the two extreme age bands, those who we can consider digital natives (16 to 24 years old) versus older people (65 to 74) are remarkable also in France at 36 points, Spain at 35.2 points, Greece at 34.5 points or Italy at 33.5 points. Amongst the countries analysed with lower technological development we find Romania and Turkey where these generational differences are less, due to that the total number of people who access the Internet through these mobile devices being scant. In the first case, the difference between both groups is 29 points, whilst in the Turkish case this difference amounts to 22.2 points. There exist two circumstances which we can highlight, the case of Germany, where there exist more people aged 25 to 34 (48.9%) that connect to the Internet using these devices than in the rest of population groups (37.08% in people aged 16 to 25, 37.2% in ages between 35 to 44 or 34.6% in ages between 45 to 54). Luxembourg, meanwhile, which is ahead -as we have seen- in the IT introduction of its population, has the highest equilibrium in the use of laptops and tablets amongst all the age groups, the biggest demographic group that uses them is the people aged 55 to 64 (48.2%), while people with ages between 65 and 74 use these devices more (37.8%) than young people between 16 and 24 years (29.7%). In this case, the difference is 8.2 percent points in favour of the oldest group of people. In the rest of the age groups, the percentages are very similar (47.6%- 25 to 34 years old/ 47.05%- 35 to 44 years old/ 43.8- 45 to 54 years old).

Individuals using a laptop/tablet to access the internet, away from home or work , by Age (6 groups)

Year:2015

Legend

- Individuals, 16 to 24 years old
- Individuals, 25 to 34 years old
- Individuals, 35 to 44 years old
- Individuals, 45 to 54 years old
- Individuals, 55 to 64 years old
- Individuals, 65 to 74 years old

European Commission, Digital Agenda Scoreboard
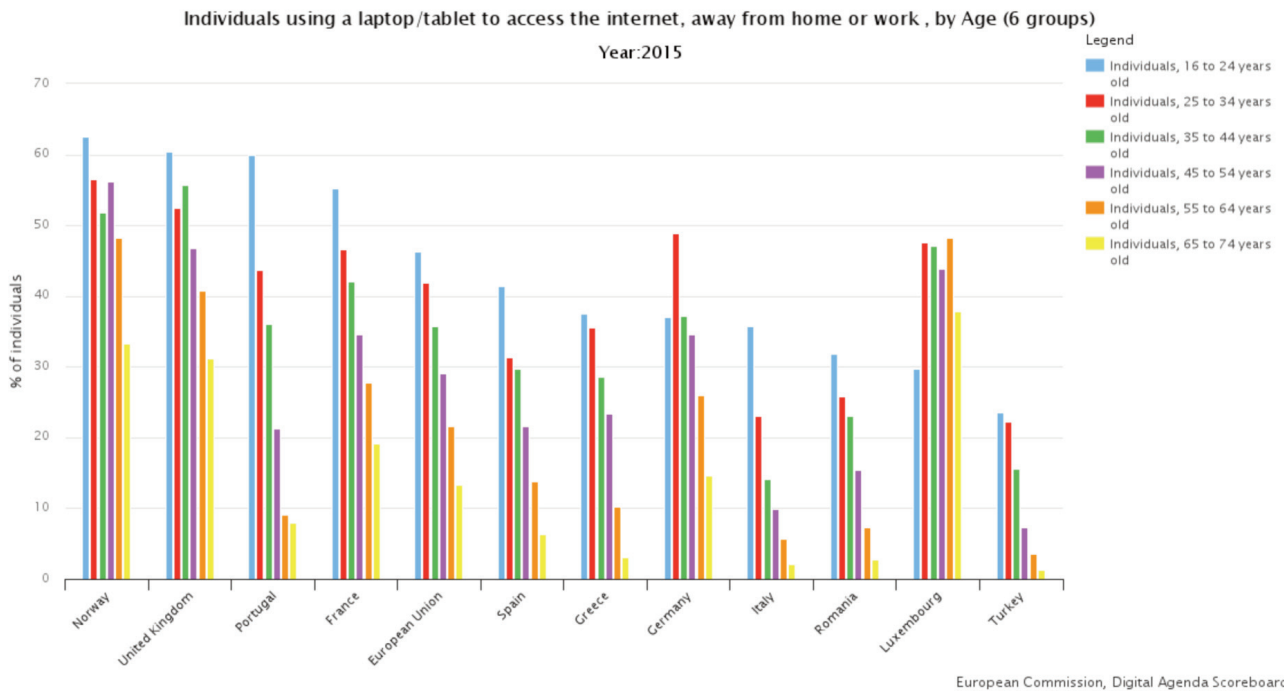
Graph 2.6.

Another illustrative variable of the degree of e-inclusion is the percentage of habitual Internet users (those that connect at least one time per day). In the two following maps, where the percentage of habitual Internet users is reflected by country, we compare the total population with the group of people aged 65 to 74, the darker colours being where the percentage of habitual users is higher and the lighter colours, where this percentage is lower. We find that in some countries (for example, Spain), the number of habitual users in the general population is far higher than in the case of habitual users aged 65 to 74. In countries such as Denmark, Norway, Luxembourg, the United Kingdom or The Low Countries, there is no change of colour, implying a balance between regular users in the total population and in the oldest group.
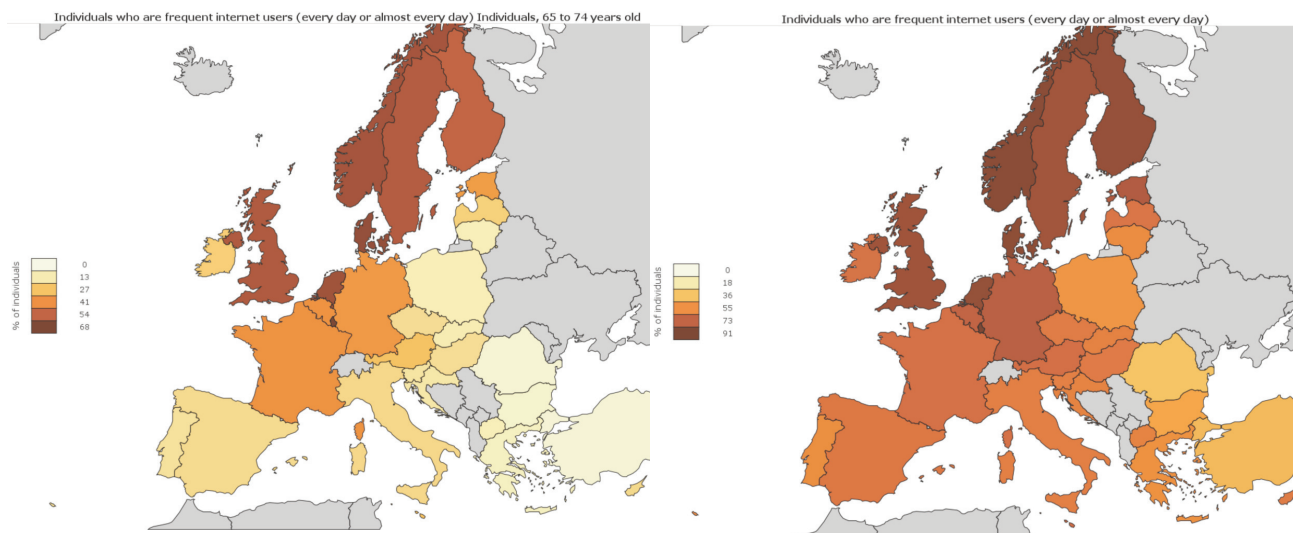
Graph 2.7.

The last aspect that we will analyse to assess the existence of a generational digital divide in the European Union in relation to Spain implies comparing a number of habitual activities conducted through the Internet in the different age groups studied by the European Institutions. These habitual activities will be the following:

- Order goods or services online
- Read or download the press online

- Search for information about goods and services

- Use of online banking

- Participate in social networks (in the last three months)

- Phone or make video calls over the Internet

With reference to the people who have ordered goods or services online, in all the European Union countries, the citizens aged 25 to 34 are the ones who have done it more, in a proportion of 70% (it is logical, if we consider that the people who use the Internet more, are the ones who have greater economic capacity). Compared with people aged 65 to 74, the percentage difference is 45.7 points, which seems to indicate a certain divide in this field. If we compare it with the Spanish case, the difference between both age groups is bigger, as it is 50.7 percent points of difference, as compared to the 60.1% of the first group, only 9.3% of the individuals between 65 and 74 order goods and services online.

Individuals ordering goods or services online, by Age (6 groups)

Year:2015

Legend

- Individuals, 16 to 24 years old
- Individuals, 25 to 34 years old
- Individuals, 35 to 44 years old
- Individuals, 45 to 54 years old
- Individuals, 55 to 64 years old
- Individuals, 65 to 74 years old

European Commission, Digital Agenda Scoreboard
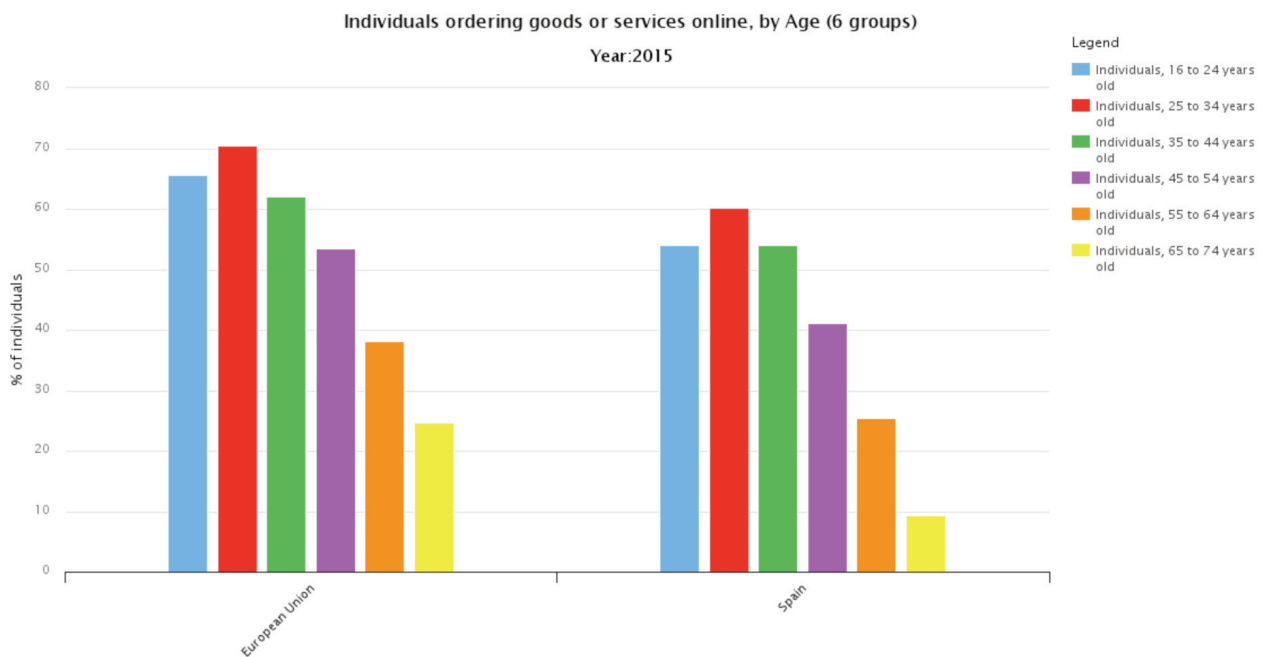
Graph 2.8.

The following online analysed activity is reading or downloading the press online. In this case, the biggest demographic group in the EU scope is still the one formed by individuals between 25 and 34 years old with 68.9 percent, followed by the two adjacent population segments, people aged 16 to 24 with 63.5% and 35 to 44 with 62.8%. 55% of people aged 45 to 54 read or download the press online; while 42.8% of people aged 55 to 64 do so. In the case of the group of people aged 65 to 74, only 28.65 do it, which implies that the difference between the biggest group (25 to 34 years old) and the smallest (65 to 74) is 40.3 percentage points. In the case of Spain, it is noteworthy that the levels of reading or downloading of the press online are higher than the EU average in all the age bands except in the highest, finding percentage differences of almost 10 points in the age band (25 to 34) where this activity is majority: 68.9% in the EU as against 78.4% in Spain. In addition, the age bands close to the majority one have also high percentages in this activity (77.3% in ages between 16 to 24 and 74% in ages between 35 to 44). The only age band where the Spanish percentages are lower than the European average is regarding the people aged 65 to 74 who in Spain reach 24.2% versus 28.6% in the EU. The difference between the majority group and the minority group in Spain reaches 54.2 percentage points, which seems to indicate a certain marginalization of the oldest people group in the participation process in the services of information society.

reading / downloading online newspapers / news magazines, by Age (6 groups)

Year:2015
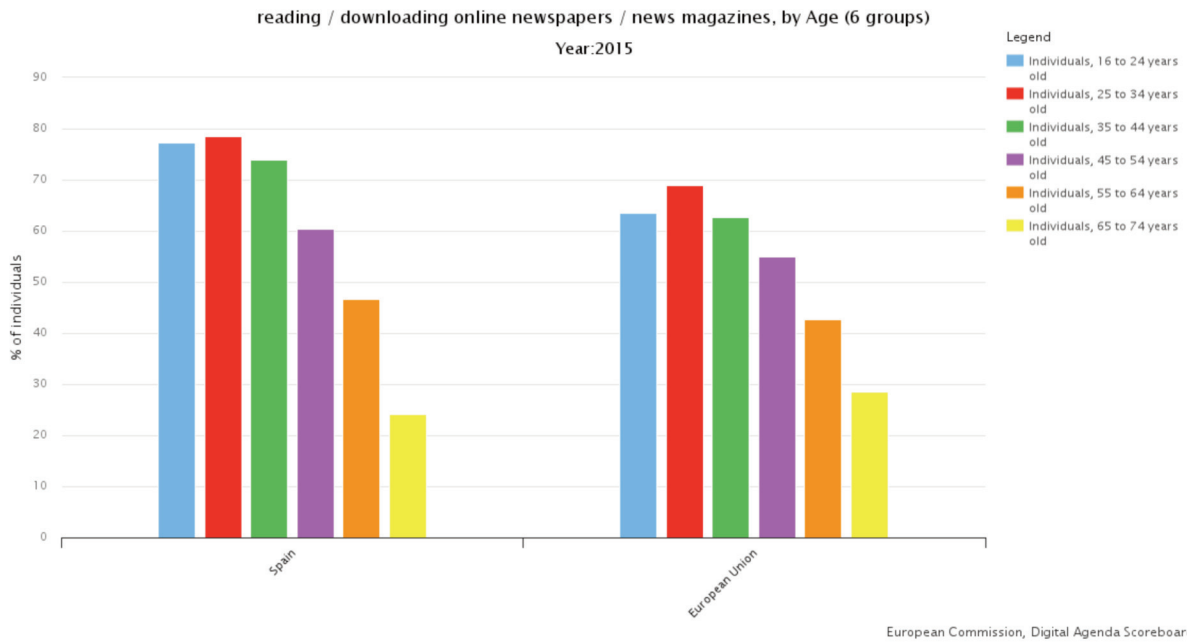
Graph 2.9.

The next activity to be analysed is the search for information on goods and services. In this case, the differences among the various age groups in the European framework are similar to reading and downloading of the press on-line, given that the majority group is the one made up of individuals between 25 and 34 years old (74.9%), followed by the 35 to 44 age group (70.7%), and the age group between 16 to 24 (69.9%). The percentage in the rest of age groups decreases from 63.8% (aged bet-ween 45 and 54) to 50% (aged between 55 and 64), reaching 33.8% in the oldest age group (65 to 74), which means, compared to the majority group, a difference of 41.1 points. In the Spanish case, these differences are much larger, since this difference between the majo-rity group (aged between 25 and 34 years) at 70.3% and the minority group (aged between 65 and 74) amounts to 53 points. The diffe-rence between the EU average and Spain among people aged 65 to 74 who look for in-formation about goods and services online is 16.6 points (33.8% versus 17.2%).

looking for information about goods and services online, by Age (6 groups)

Year:2015
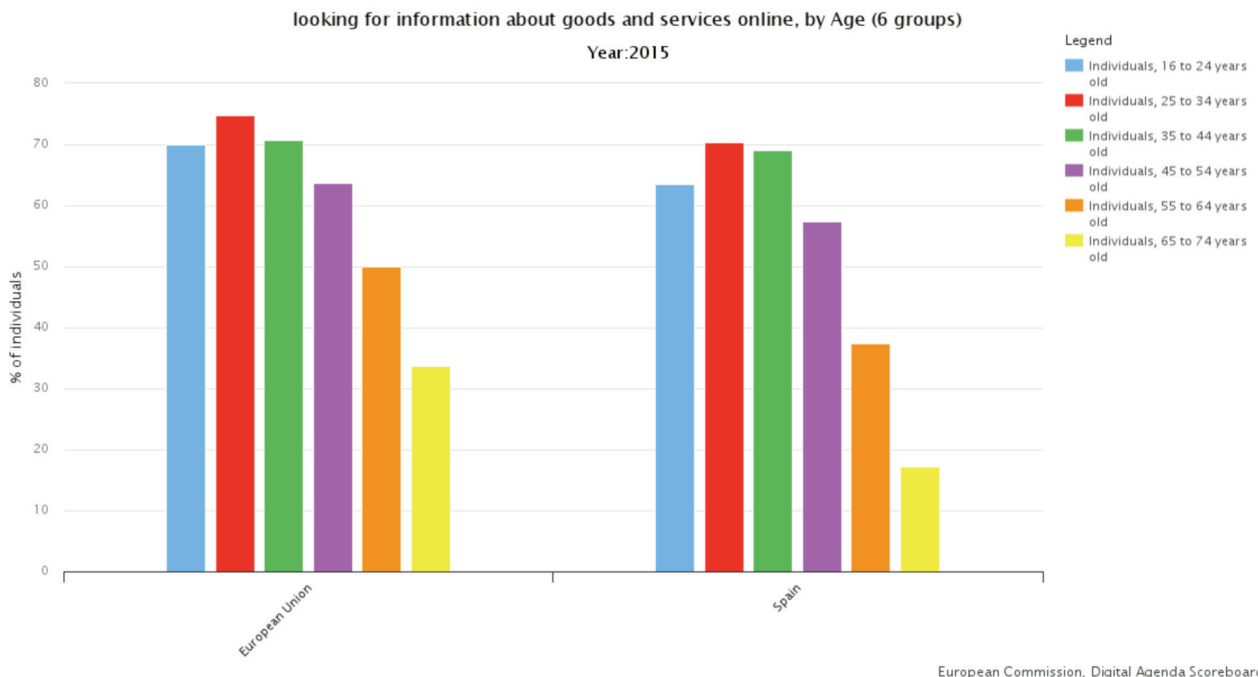
Graph 2.10.

With respect to the use of online banking, the differences between majority and minority population groups are not excessive, given that in the EU case it is 38.6 points (62.2% of people aged 25 to 34 and 23.6% aged between 65 and 74), and in the Spanish case, this difference is 40 points (54.2% in ages between 25 and 34 and 14% in ages between 65 and 74). Appre-

ciable differences, but they do not reach the 54 points that we can find in other activities. The differences between the European average and the Spanish statistics are not excessive, not reaching more than 10 percentage points of difference, except in the lowest age group (16 to 24), where the difference reaches 14.8 points (41.5% EU versus 26.7% Spain).

using online banking, by Age (6 groups)

Year:2015

Legend
- Individuals, 16 to 24 years old
- Individuals, 25 to 34 years old
- Individuals, 35 to 44 years old
- Individuals, 45 to 54 years old
- Individuals, 55 to 64 years old
- Individuals, 65 to 74 years old

European Commission, Digital Agenda Scoreboard
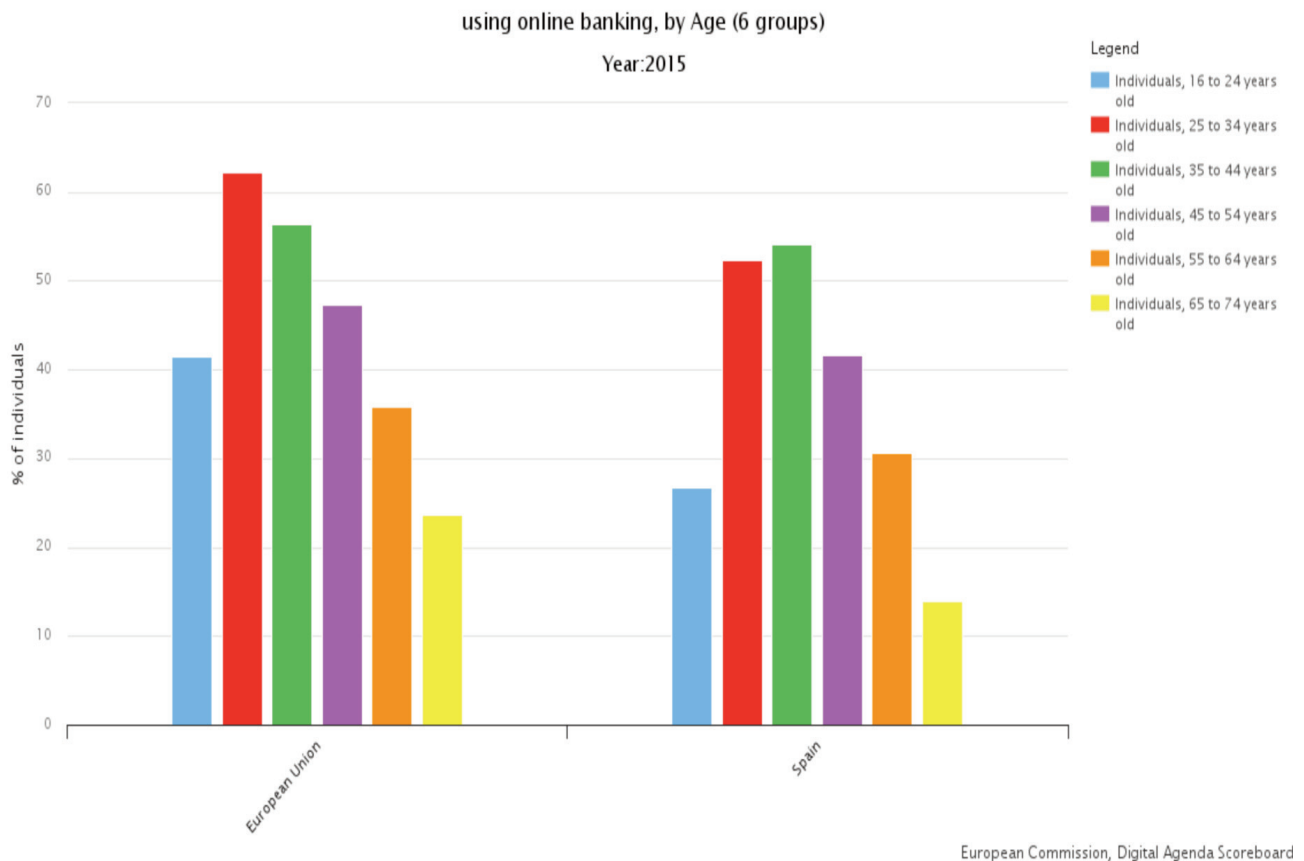
Graph 2.11.

Another activity that we analyse is the participation in social networks through the Internet during the last three months. We can distinguish three significant trends in this activity. On the one hand, the slight difference of percentages in social network participation between Spain and the European average, which does not exceed 4 points in any case. On the other hand, the percentage of people who participate in social networks is higher in Spain than the European average in the lowest three age groups. The difference in the majority and mi-

nority percentages according to age groups are the biggest in any activity, since it is 77.5 in the Spanish case (89.2% of participation in social networks among people aged 65 and 74) and 72.5 points in the European case (86.2% of participation in social networks amongst people aged 16 to 24 versus 13.7% amongst people aged 65 to 74). Finally, it should be noted that the difference between the European and the Spanish percentages in the highest age band is only 2 points (13.7% in the EU versus 11.7% in Spain).

participating in social networks, over the internet, last 3 months, by Age (6 groups)

Year:2015
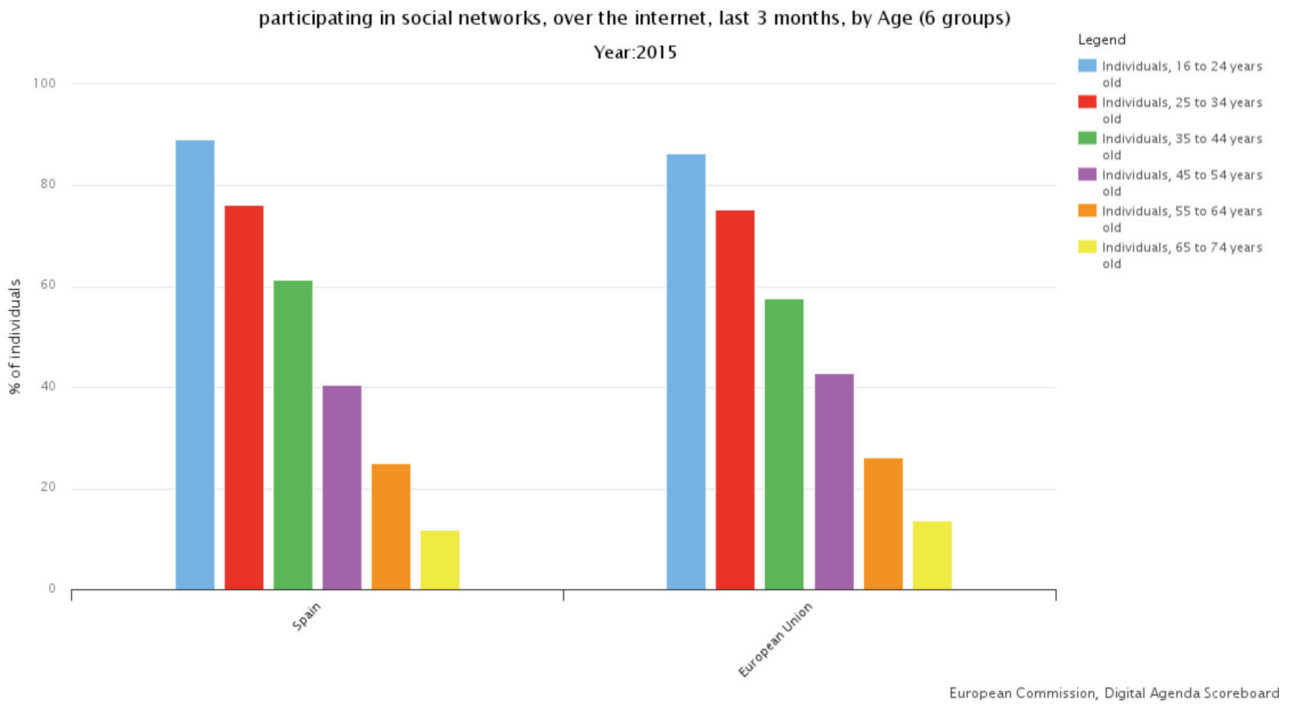
Graph 2.12.

The last online activity we will analyse is phoning or making video calls. In this case, the percentages are not as high as in the previous activity and the generational differences are neither so striking as in previous cases. The difference between the majority group with 46.5% (people aged 16 to 24) and the minority with 12.5% (people aged 65 to 74) is 34 points in the European case. In the Spanish case, this difference is 32.8 points. Likewise, the European percentages decrease in each age group by amounts never higher than 10 points, and this also happens in the Spanish case.

telephoning or video calls (via webcam) over the internet, by Age (6 groups)

Year:2015
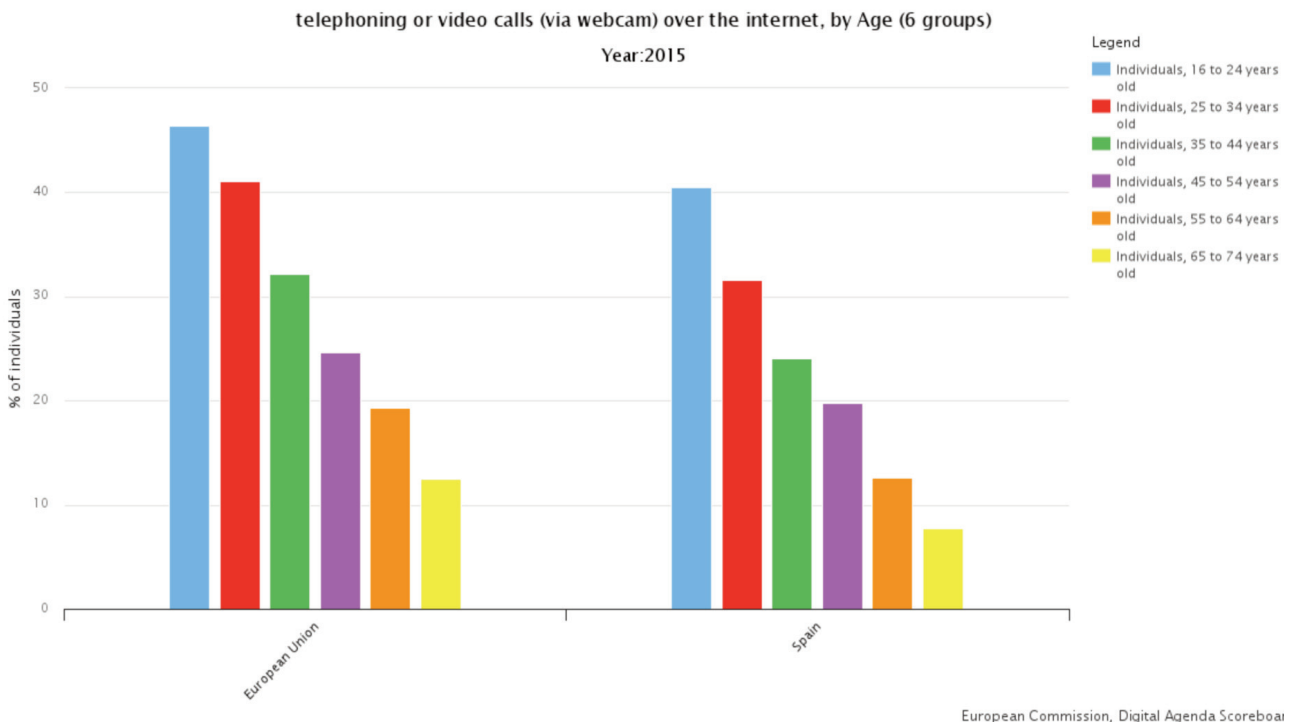
Graph 2.13.

Among the main analyses of Internet use by elderly people, the reports which the Pew Institute regularly makes about the United States should be highlighted. One very specific report on elderly people and the Internet was published in 2004[5]. The main conclusions of the report establish that only 22% of the people older than 65 uses Internet regularly, searching for information and communicative actions being the main uses, and the number of elderly people who buy online or search for health related issues having increased. According to data referred to a study made by the same institute between July, 18th and September, 30th 2013, the conclusions are that the elderly still lag behind in adopting information technology. So while 91% of adults less than 65 use a mobile phone, only 77% of people older than 65 do so, the difference between both groups increases when we refer to the use of the Internet (86% versus 59%) and to the use of broadband (70% versus 47%).

Seniors continue to lag in tech adoption

Seniors vs. all American adults 18+
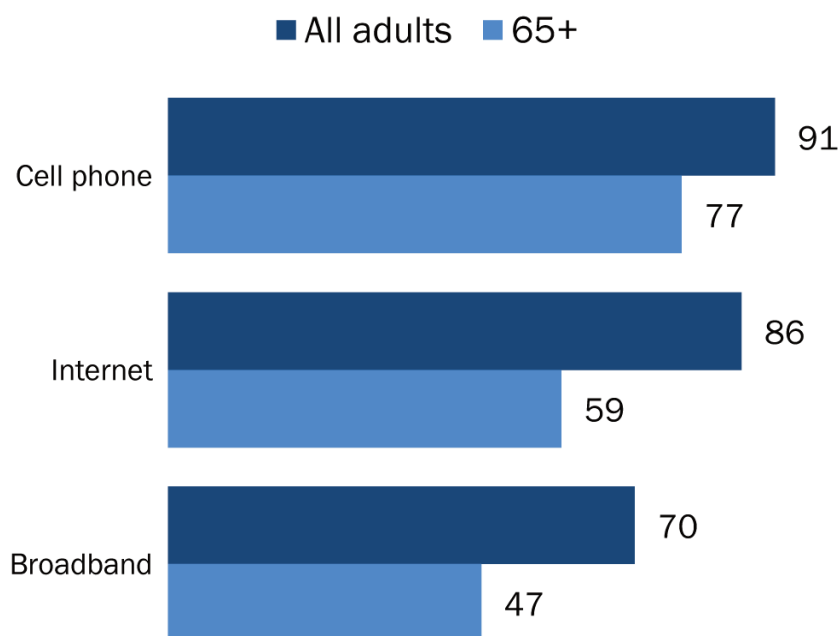
■ All adults ■ 65+

Pew Research Center's Internet Project July 18-September 30, 2013 tracking survey.

PEW RESEARCH CENTER

Graph 2.14.

If we study the use of the Internet and the presence of broadband in households among age groups older than 65, the differences increase with age. If amongst people aged 65 to 69, the use of the Internet is habitual in 74% and the presence of broadband in 65%, in the age group between 70 and 74, these percentages decrease to 68% and 55% respectively, in the age group between 75 to 79, the decrease is more significant, becoming 47% those who use the Internet and 34% who have broadband at home; for people over 80, it becomes 37% and 21% respectively.

5 http://www.pewinternet.org/Reports/2004/Older-Americans-and-the Internet.aspx

Among seniors, internet and broadband use drop off around age 75

% within each age group who ...
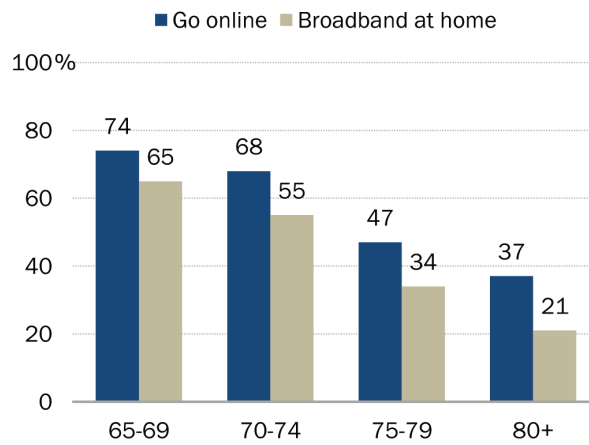
■ Go online ■ Broadband at home

Pew Research Center's Internet Project July 18-September 30, 2013 tracking survey.

PEW RESEARCH CENTER

Graph 2.15.

Another conclusion of the Pew Institute study is how people over 65 prefer to have an e-reader or a tablet rather than a smartphone, unlike the rest of adults. We guess that it can be related to size of the devices.

Seniors are more likely to own a tablet or e-book reader than smartphone

% who own a ...
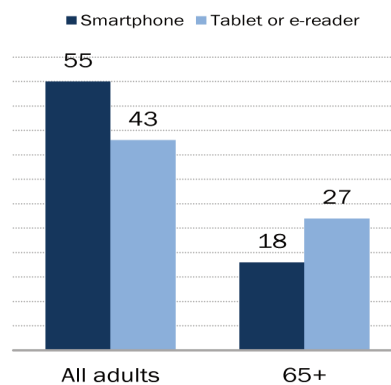
■ Smartphone ■ Tablet or e-reader

Pew Research Center's Internet Project July 18-September 30, 2013 tracking survey.

PEW RESEARCH CENTER

Graph 2.16.

With reference to the adoption of the Internet over time, if we analyse its development between 2000 and 2013, for both people over 65 and the rest of adults over 18, we find that Internet use has significantly increased. In the case of people over 65, this percentage increase in the studied period has been 44 points, while in the rest of adults it has been 36 points. Even so, the rise in the percentage of Internet adoption by the elderly is higher than in the rest of the population, perhaps the reason is because it started from a far lower level.

Internet adoption over time, seniors vs. all adults

% of seniors/all adults who go online, 2000-2013
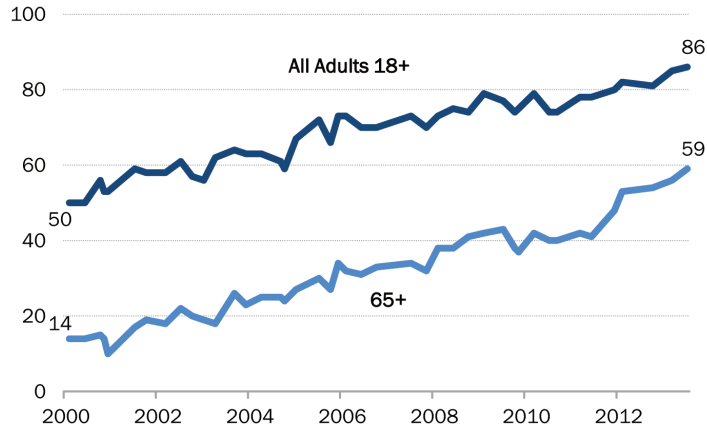
Pew Research Center's Internet Project tracking surveys.

PEW RESEARCH CENTER

Graph 2.17.

Another conclusion that we include from the Pew Institute study makes reference to the perception of access to the Internet. To the question asked to people over 65, about if "people without Internet access have a real disadvantage due to all the information they might not have access to", the difference between internet users and those who are not, is clearly illustrative. Amongst the first group of people, 47% partially agree with the assertion versus 31% who totally agree. These percentages go down to 24% and to 25% amongst those who are not Internet users.

Many older non-internet users don't think they are missing out on much

% of those 65 and older who agree with the statement: "People without internet access are at a real disadvantage because of all the information they might be missing"
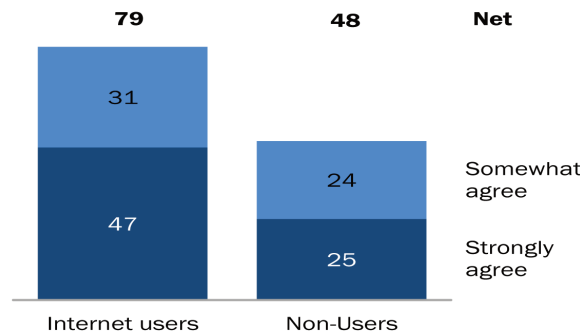
Pew Research Center's Internet Project July 18-September 30, 2013 tracking survey

PEW RESEARCH CENTER

Graph 2.18.

The last study from this US Institute shows the maintenance of this generational digital divide amongst Internet users in 2014, in this case through mobile devices. Therefore, Internet use through these devices based on age shows that 57% of the group of people over 65 uses them, versus 88% of the age group between 50 and 64 years, 93% of people aged 30 to 49, and almost all young people aged 18 to 29 (97%) use mobile devices to connect to the Internet.

Internet users in 2014

Among adults, the % who use the internet, email, or access the internet via a mobile device

		Use internet
All adults		87%
Sex		
a	Men	87
b	Women	86
Race/ethnicity*		
a	White	85
b	African-American	81
c	Hispanic	83
Age group		
a	18-29	97[cd]
b	30-49	93[d]
c	50-64	88[d]
d	65+	57
Education level		
a	High school grad or less	76
b	Some college	91[a]
c	College+	97[ab]
Household income		
a	Less than $30,000/yr	77
b	$30,000-$49,999	85
c	$50,000-$74,999	93[ab]
d	$75,000+	99[ab]
Community type		
a	Urban	88
b	Suburban	87
c	Rural	83

Source, Pew Research Center Internet Project Survey, January 9-12, 2014. N=1,006 adults. Note: Percentages marked with a superscript letter (e.g., [a]) indicate a statistically significant difference between that row and the row designated by that superscript letter, among categories of each demographic characteristic (e.g., age).

* The results for race/ethnicity are based off a combined sample from two weekly omnibus surveys, January 9-12 and January 23-26, 2014. The combined total n for these surveys was 2,008; n=1,421 for whites, n=197 for African-Americans, and n=236 for Hispanics.

PEW RESEARCH CENTER

Graph 2.19.

5. THE DIGITAL DIVIDE IN SPAIN

In the present chapter we pretend to show a series of aspects linked to the use of Information and Communication Technologies by elderly people, especially in relation to the rest of age groups, in the Spanish context. The comparison of this data amongst the different generational groups can offer us a vision about the existence of a generational digital divide character and therefore, have an influence in the idea of the necessary e – inclusion of elderly people in Information Society.

The report "Elderly people in Spain" published by the IMSERSO in 2008 established in its chapter 6 dedicated to "Everyday living, attitudes, values and emotions in old age" a series of very illustrative parameters about the use of ITCs by elder people, highlighting, with respect to the Internet, that only 50.5% of people aged 65 to 74 connected every day, 31.5% weekly; 8.3% monthly and un 9.8% not every month. The Internet services predominantly employed were "Searches for information" (79.9%), "Receive or send emails" (78.7%) and Others (62.7%). Well below remain functions that we can consider useful for this social group such

as "Searching for information about health topics" (37.9%), "Obtaining information from Public Administration Web sites" (30.1%), "The purchase of goods and services" (20.2%) or "Downloading official forms" (16.8%). If we stick to the Ways of acquiring computer skills, we find that 75.5% were self-taught, 60.6% have learned from other people in their social environment and 30.9% in learning courses for adults. Nevertheless, if we stick to the data published in the report entitled "A profile of old people in Spain, 2011. Basic statistical indicators" (Abellán y Esparza, 2011) , the percentage of people aged between 65 and 74 who had used the Internet in the last three months had descended to 15.6%.

This criteria of exclusion of elderly people in the access to the Internet also becomes evident in the Annual report Society in The Network 2010 of the National Observatory of the Telecommunications and Information Society referred to 2010 (Urueña & al, 2011), where it is indicated that if we centre the analysis on the age variable, we observe how it clearly differentiates the use of the Network, the lower the age the greater the Internet use and the inverse, the higher the age the lower the percentage of netizens. 96.3% of young people aged between 16 and 24 have connected to the Internet on some occasion and even though the percentages of the people aged between 25 and 34 are slightly lower, they are also high, reaching almost 90% of penetration. Another interval situated at higher levels than the total is the one formed by the people aged between 35 and 44 slightly exceeding the 81% of netizens, well above the 68.5% of the average of the total population.

If we stick to this data from the Survey on Information and Communication Technologies Equipment and Use in Households in 2014 only 25.8% of the people aged between 65 and 74 have used a computer in the last 3 months, raising this percentage to 26.2 % among those who, in this age group, have used the Internet in that same period, those who used it at least once per week in the last three months rise to 22.8%; however, while only 4.5% of the people aged between 65 and 74 have bought online in the last three months. These figures amount to 9.1% between those who have bought at some time online (INE 2015).

For a more detailed approach to the situation of elderly people with regard to ITCs, we will rely on the document held by IMSERSO based on survey made by National Statistic Institute about equipment and the use of information technology and communication in Spanish households in the year 2012 (IMSERSO, 2014), which is the most detailed survey published on the matter, with the purpose of assessing the existence or not of a generational divide related to the use and usage of this type of equipment. This survey has the particularity that it tackles age ranges beyond 74, which is the age limit normally employed by the INE in its surveys.

If we evaluate the use of the personal computer amongst people older than 65 and we divide this population segment into age groups between 65 and 69, 70 and 74, 75 and 79, and 80 and beyond, we verify that the use of the computer decreases as age increases, shifting from 32.8% (65 – 69 years old), to 21,7% (70 - 74 years old), dropping to 12.1% (75 - 79 years old) and to 5.8% (80 years old or more).

Utilización de ordenador personal (mayores de 65) según la edad
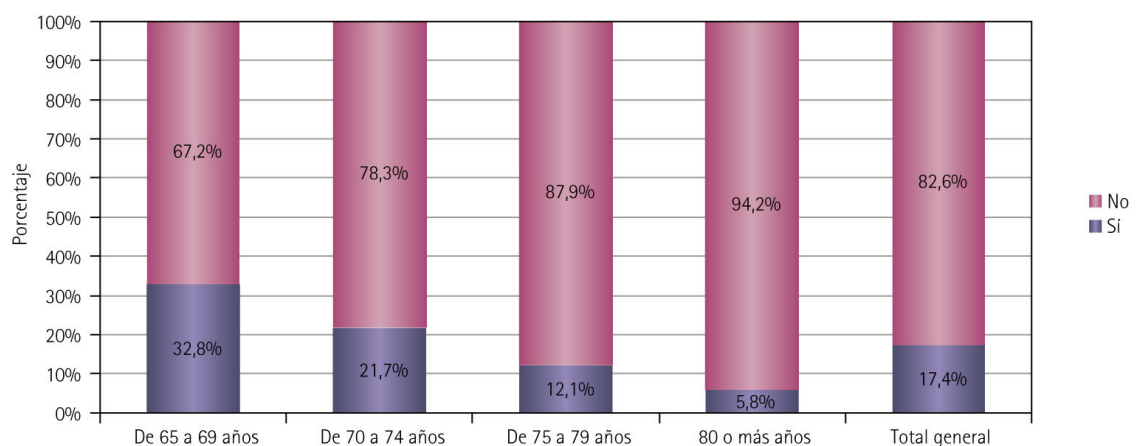
Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.1. Personal computer use (older than 65) depending on age

The inclusion of the criteria of household income to assess the use of a personal computer in people over 65 also gives us guidance on the profile of the user, showing how the hypothesis confirms that the higher the income, the greater is the use of the computer, shifting from 8.5%, in the case of incomes inferior to 1,100 euros per month, to 6.8%, on the assumption of monthly incomes higher than 2,700 euros.

Utilización de ordenador personal (mayores de 65) según el nivel de ingresos del hogar

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.2. Personal computer use (older than 65) depending on household income level

About the use of a personal computer in the last three months by elderly people, 58.5% have used it daily or at least, 5 days per week, which implies that more than half of this age group is closely linked to the use of ITCs, and if we add that 25.3% use it weekly versus 9.8%, who use it once per month and 6.4%, that don't use it on a monthly basis, we can conclude, at least, with reference to the use of the personal computer, no special great divide is observed.

Frecuencia de uso de los mayores que han utilizado el ordenador en los últimos tres meses
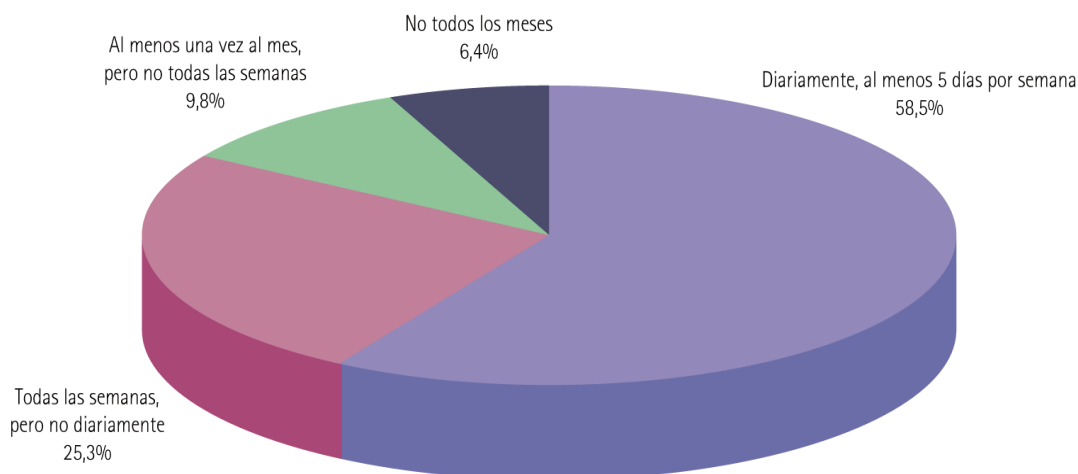
Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.3. Frequency of senior citizens who have used a computer in the last three months

Concerning what communication and information access tasks elderly people have carried out, we can observe that 81.3% have used e-mail, 75.1% to search for information about goods and services, 74.7% have used information technology to read the press online, 23.7% have used social networks and 22.2% have phoned via the Internet.

Tareas de comunicación y acceso a la información realizadas por los mayores que han utilizado internet en los últimos tres meses
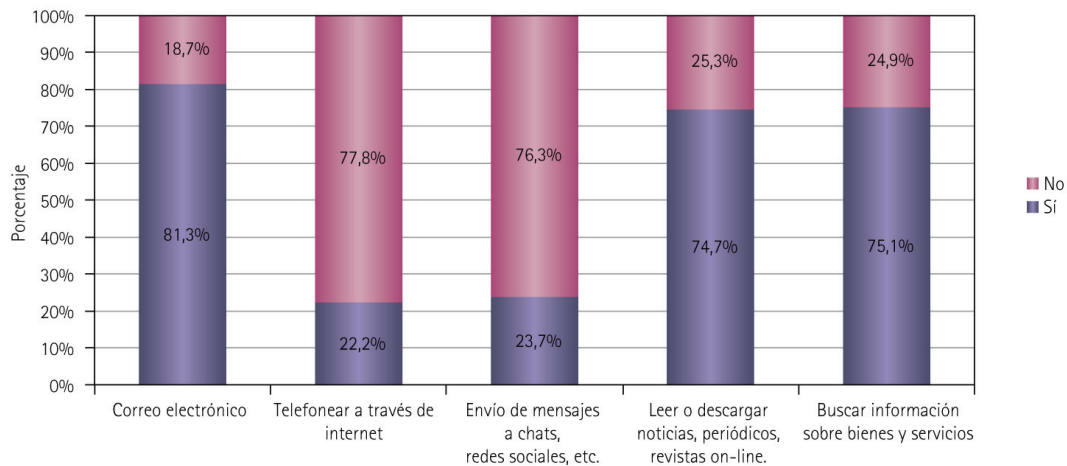
Graph 3.4. Communication tasks and access to information performed by older people who have used the Internet in the last three months

With regard to the tasks related to entertainment and creativity carried out by elderly people on the Internet in the last three months, the principle activities were listening to the radio or watching the TV 25.1%, 22.2% used the Internet to play or download games, images, films or music, 12.6% to upload their own contents and 3.7% to create websites or blogs.

Tareas relacionadas con el entretenimiento y la creatividad realizadas por los mayores que han utilizado internet en los últimos tres meses
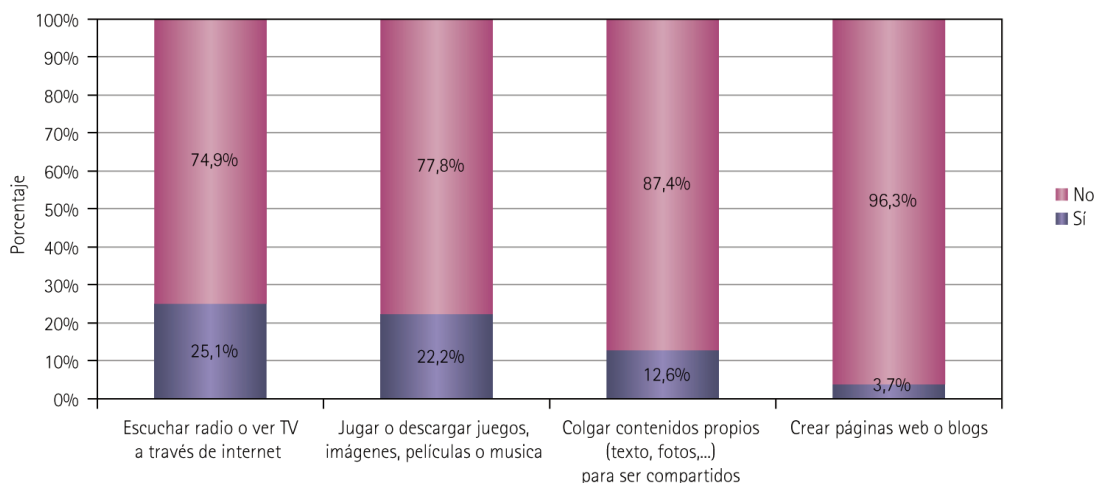
Graph 3.5. Tasks related with entertainment and creativity performed by senior citizens who have used the Internet in the last three months

Other aspects that show the degree of the generational divide is the relation with the Public Administration by elderly people. As we can note, the main usage of the electronic Administration is linked to the searching for information in web pages which is performed by 38.7% of the total. Additionally, we see that the downloading of official forms is only carried out by 21.5%, whereas the percentage of elderly people who send these completed forms drops to 15.3%. This seems to indicate a decrease in the activities which are related to the Public Administration according to the complexity of the necessary competencies needed to interact with it.

Mayores que han utilizado internet para relacionarse con la administración en los últimos tres meses
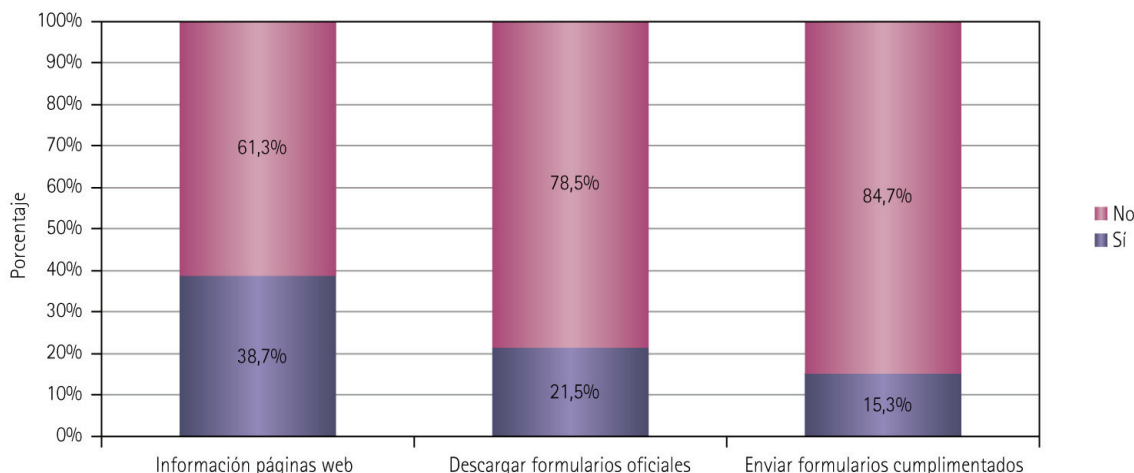
Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.6. Senior citizens who have used the Internet to interact with the public administration in the last three months

If we stick to the ways elderly people connect to the Internet through portable devices, laptops or tablets, people over 65 use it at a percentage lower than 16%, while, in the case of people aged between 45 and 64, the use of portable devices increases to 24.6% reaching 39.7% in the population group of people under 45.

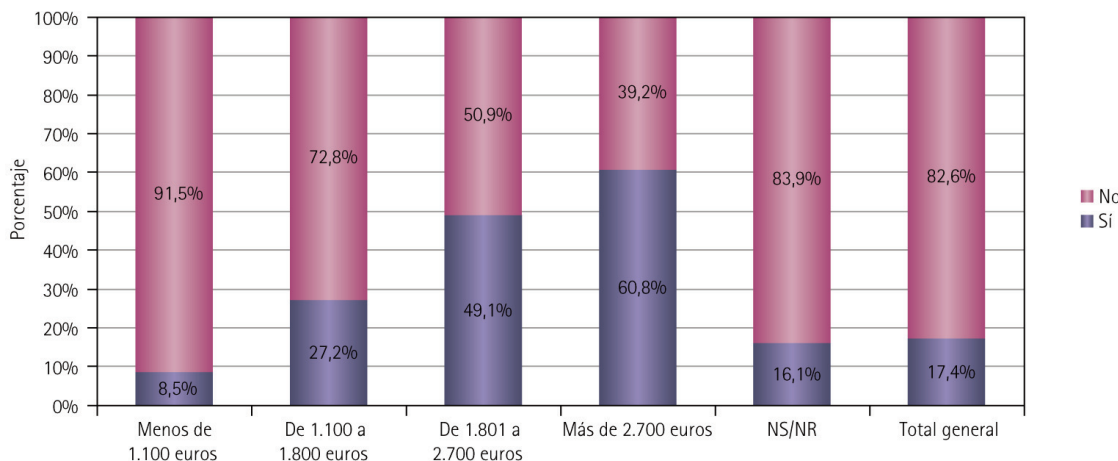**Conexión a internet por medio de portátil o tablet según la edad**
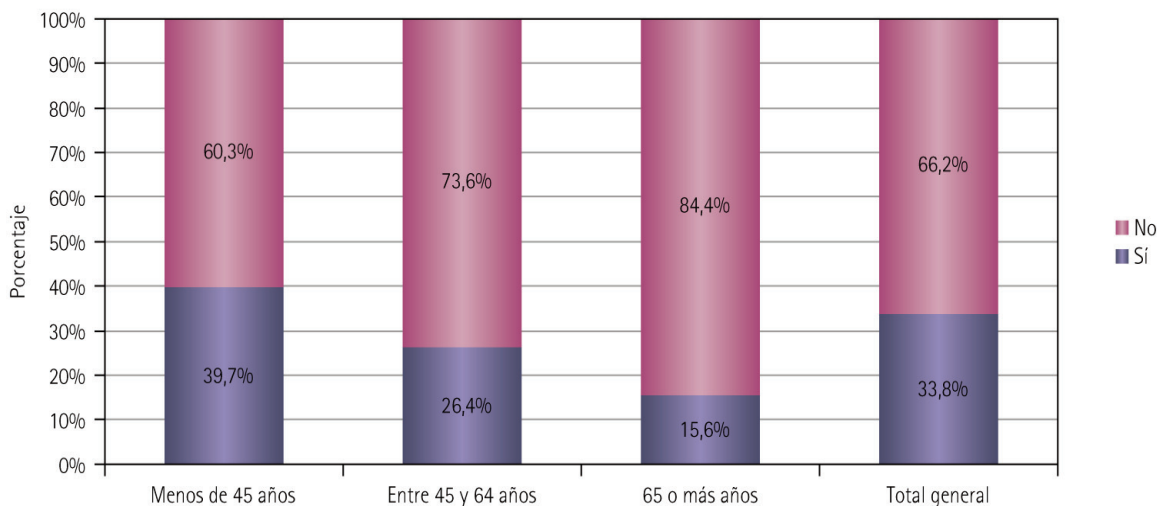
Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.7. Internet connection via laptop or tablet depending on age

The introduction of the level of studies variable in the connection to the Internet through portable devices (excluding mobile phones) amongst people over 65 gives very significant conclusions, since, the greater the level of education, the greater the use of these types of devices. The difference between those who possess Primary Education and those with higher education (university studies) is 19.1 percentage points. This difference is lower between the latter and those who have a Secondary Education which is reduced to 7.3 percentage points.

Utilización de portatil o tablet para conectar a internet (mayores de 65)
según el nivel de estudios
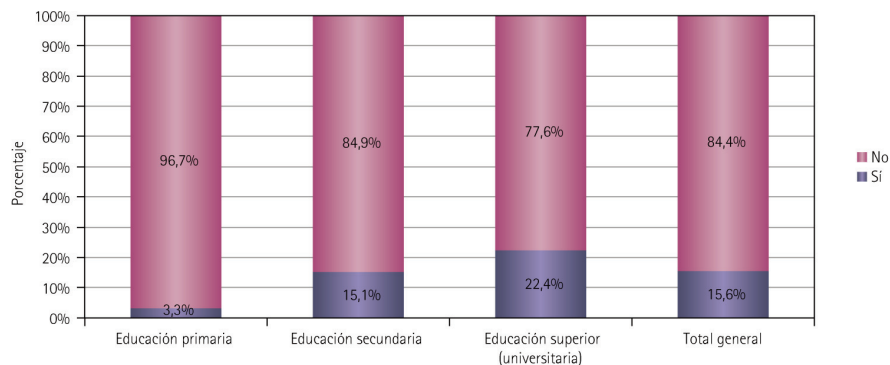
Graph 3.8. Use of laptop or tablet to connect to the Internet (older than 65) depending on the level of studies.

When we analyse the use of smartphones or similar items to connect to the Internet according to various demographic variables in people over 65, we observe some significant data. If we focus on the gender criteria, men are the ones who use smartphones more frequently in comparison to women with 13.3% from the total versus 4.8% of women. If we value the age variable, it would seem evident that an increase in age would imply a decrease in the use of this type of device. This is what happens between the age group 65-69 where it is used by 11.8% versus 10.9% inside the age group from 70 to 74, with a not very significant percentage difference of less than one point. A remarkable qualitative leap occurs between this last age group and the next one (75 to 79), since the use of smartphones or similar devices becomes 2.6%, with a reduction of 8.3 percentage points. The surprising thing occurs with reference to the highest age group (80 years old and above) whose use of this device increases again to 4.3% of the total. The reasons for this increase in this population segment haven´t been studied, all the more as reasons of a mainly physical character (loss of sight, hearing, manual dexterity) would mean less use of smartphones. Another subject that needs to be mentioned is the use of smartphones and similar items among people older than 65 according to habitat. The greater the population size, in principle should mean a greater use of these devices. In such a way it seems to indicate that the greatest use occurs in provincial capitals of more than 500,000 inhabitants with 12.2% of the total population. But the second type of population, where greater use is made of these devices, is neither the rest of provincial capitals (with 9.6%) nor municipalities, which are not provincial capitals, with more than 100,000 inhabitants, whose percentage of usage drops to 5.4%. They are the municipalities which are not provincial capitals with a population between 50,000 and 100,000 inhabitants which follow with a smartphone usage percentage with 11.5% of the total, followed by the municipalities between 10.000 and 20.000 habitants with 10.8%. Even the municipalities with less than 10,000 inhabitants make a greater use of these devices (with 6.6%) in comparison to the municipalities with more than 100,000 inhabitants. The possible reasons are also unknown, but it can be attributed to the degree of development of telecommunications infrastructure or to the effectiveness of the training initiatives of the community social services in the medium-sized population towns. For its part, the use of these devices is conditioned by the level of studies, as in the case of laptops and tablets. In the case of smartphones their usage passes from 1.1% of those who have primary education to 8.4% among those who have secondary studies and 15,3% between those who possess university studies. The income variable is probably the one that most determinedly influences the use of these mobile devices, and the greater the income the greater the usage rate. The differences in this respect are significant. In such a way, those who have an income lower than 1,100 euros per month, use it in a percentage inferior to 5%, moving to 5.8% among those who have an income between 1,100 and 1,800 euros per month. The quantitative leap occurs in the following monthly income range, whose rate of use becomes 13.9% of the total among earners between 1,800 and 2,700 euros per month, raising the usage rate of smartphones to 20.3% between those who are placed in the highest income band exceeding 2,700 euros per month.

Utilización de smartphone *o similar para conectar a internet según variables demográficas del encuestado (mayores de 65)*

|		Sí	No
Total		9,5%	90,5%
Sexo	Hombre	13,3%	86,7%
	Mujer	4,8%	95,2%
Edad	65 a 69 años	11,8%	88,2%
	70 a 74 años	10,9%	89,1%
	75 a 79 años	2,6%	97,4%
	80 años y más	4,3%	95,7%
Hábitat	Estrato 0 : Capitales de provincia con más de 500.000 habitantes.	12,2%	87,8%
	Estrato 1 : Resto de capitales de provincia.	9,6%	90,4%
	Estrato 2 : Municipios (no capitales de provincia) con más de 100.000 habitantes.	5,4%	94,6%
	Estrato 3 : Municipios (no capitales de provincia) con más de 50.000 y menos de 100.000 habitantes.	11,5%	88,5%
	Estrato 4 : Municipios con más de 20.000 y menos de 50.000 habitantes.	8,9%	91,1%
	Estrato 5 : Municipios con más de 10.000 y menos de 20.000 habitantes.	10,8%	89,2%
	Estrato 6 : Municipios con menos de 10.000 habitantes.	6,6%	93,4%
Nivel de estudios	Educación Primaria	1,1%	98,9%
	Educación Secundaria	8,4%	91,6%
	Educación Superior Universitaria	15,3%	84,7%
Nivel de ingresos del hogar	Menos de 1.100 euros	4,8%	95,2%
	De 1.100 a 1.800 euros	5,8%	94,2%
	De 1.801 a 2.700 euros	13,9%	86,1%
	Más de 2.700 euros	20,3%	79,7%
	NS/NR	8,4%	91,6%

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.9. Use of smartphone or similar to connect to the Internet depending on the respondent's demographic variables (older than 65)

Amongst those who use smartphones to connect to the Internet, we can see how within the group of people older than 65, a significant percentage (28.6%) do it on a daily basis or at least five times per week. Comparing this percentage with the people aged between 45 and 65 , the difference is 14.7 percentage points, increasing this difference in relation to the age group of younger than 45 to 29.7%. Between the age group of older than 65 and the age group of between 45 and 65,the percentage difference of those who connect less than once per week is only of 1.7 points.

Frecuencia de conexión a internet utilizando smartphone *o similar (mayores de 65)*

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.10. Frequency of internet connection using smartphone or similar (older than 65)

One of the aspects that can serve us most for this investigation about the training contents of courses for elderly people is to know the main use that they make of smartphones when they connect to the Internet. The major use, very prominently, is email checking (85.7%), followed by the reading of on-line media (63.3%) and of a hotchpotch denominated other activities (57.1%). The same percentage (22.4%) of people older than 65 "Read or download electronic books" and "Participate in Social Networks". Amongst the less performed tasks are the downloading of games, images, films and music (8.2%) and the least used is the use of podcast services (6.1%). It is surprising the inclusion of this task and not of others more logical like the consultation of web pages different to those of the media, for example, in the survey.

Tareas realizadas en internet con el smartphone *o similar (mayores de 65)*

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.11. Tasks performed on the Internet via smartphone or similar (older than 65)

It is also significant, regarding the objectives of the present project, to know the principle reasons given by the people older than 65 for not using smartphones. Nevertheless, the majority answer "They don´t need it" (82.1%) should be linked with another question that challenges the knowledge of the various utilities that offer such devices. The answer "They don´t know how to use it or it's too complicated" (22.5%) may offer more clues about the reasons for the low use, among people older than 65, of these devices to connect to the Internet. For this part, the inconvenience of the small screen (12.3%) makes sense respect to smartphones (or even with respect to tablets, although to a lesser extent) but it is not understood with respect to laptops. The economic aspect ("Device or connection too expensive - 9.4 %") or access to infrastructure ("The availability of broadband" - 1%) do not seem to be a determining criteria. Just as with "Privacy or security" with a percentage of 4.6% of the total that indicates it as a barrier, which perhaps, makes more sense when buying on the Internet or any other task that involves the transmission of personal data. However, this graph combines different types of causes, such as attitude, knowledge, economic of technical availability or physical limitations, which doesn´t allow us to have a real idea of the underlying reasons that limit access to the Internet with a laptop or a handheld device for people over 65. It would be very interesting to reveal the true reasons that can be found in the majority response "They don´t need it" as they can include a lack of knowledge of their potential, hiding of their physical limitations or competencies, or even economic reasons that they don't want to be recognised.

Barreras para el acceso a internet con un portátil o dispositivo de mano (mayores de 65)

Graph 3.12. Internet access barriers with a laptop or hand devices

Along with the use of the Electronic Administration, making purchases through the e- mail is another indicator of the existence of a generational digital divide. In this regard, although we are going to analyse more up-to-date data afterwards, in the report regarding elderly people from the INSERSO from 2012, it is shown how the percentage of people older than 65 that have bought online is 24.6%, versus 40.9% among the age group from 45 to 65 and 54% among those under 45.

Realización de compras a través de comercio electrónico según la edad

Graph 3.13. Making purchases through e-commerce depending on age

More representative of the buyer profile of the people over 65 through the use of e-commerce is the introduction of demographic variables. In this regard, it is significant that if we analyse habitat, the main percentage of buyers through the e-mail occurs in the municipalities between 20,000 and 50,000 inhabitants (37.9%) and in the municipalities which are not provincial capitals between 50,000 and 100,000 inhabitants. The reasons may be diverse, but a possible explanation may be the absence of certain types of businesses (retail clothing chains, for example) in these municipalities combined with a demand for the types of products that are usually available in such stores. The education variable, as well as, the income variable does show a logical correlation. The greater the level of studies, the greater the online buyers and the higher the income, the higher the purchases as well; both variables could be interrelated. In the variable "Level of income" the significant percentage leap occurs between the income range of 1,100 to 1,800 euros (19.4%) and between 1,801 and 2,700 euros (35.7%) with 16.3 points of difference.

Compras a través de comercio electrónico según variables demográficas del encuestado (mayores de 65)

		Sí	No
Total		**24,6%**	**75,4%**
Hábitat	Estrato 0 : Capitales de provincia con más de 500.000 habitantes.	25,0%	75,0%
	Estrato 1 : Resto de capitales de provincia.	22,9%	77,1%
	Estrato 2 : Municipios (no capitales de provincia) con más de 100.000 habitantes.	17,5%	82,5%
	Estrato 3 : Municipios (no capitales de provincia) con más de 50.000 y menos de 100.000 habitantes.	33,3%	66,7%
	Estrato 4 : Municipios con más de 20.000 y menos de 50.000 habitantes.	37,9%	62,1%
	Estrato 5 : Municipios con más de 10.000 y menos de 20.000 habitantes.	27,3%	72,7%
	Estrato 6 : Municipios con menos de 10.000 habitantes.	16,9%	83,1%
Nivel de estudios	Educación Primaria	12,0%	88,0%
	Educación Secundaria	21,5%	78,5%
	Educación Superior Universitaria	36,3%	63,7%
Nivel de ingresos del hogar	Menos de 1.100 euros	11,2%	88,8%
	De 1.100 a 1.800 euros	19,4%	80,6%
	De 1.801 a 2.700 euros	35,7%	64,3%
	Más de 2.700 euros	45,7%	54,3%
	NS/NR	23,1%	76,9%

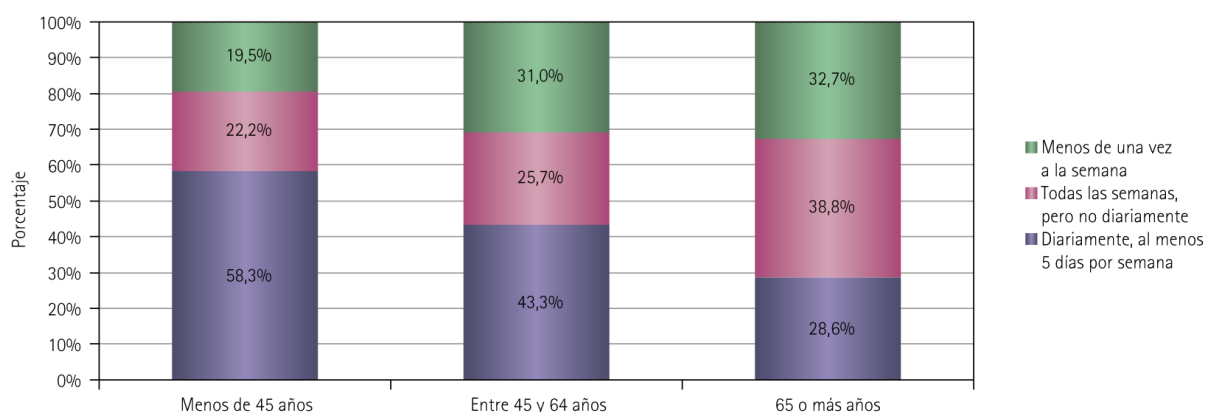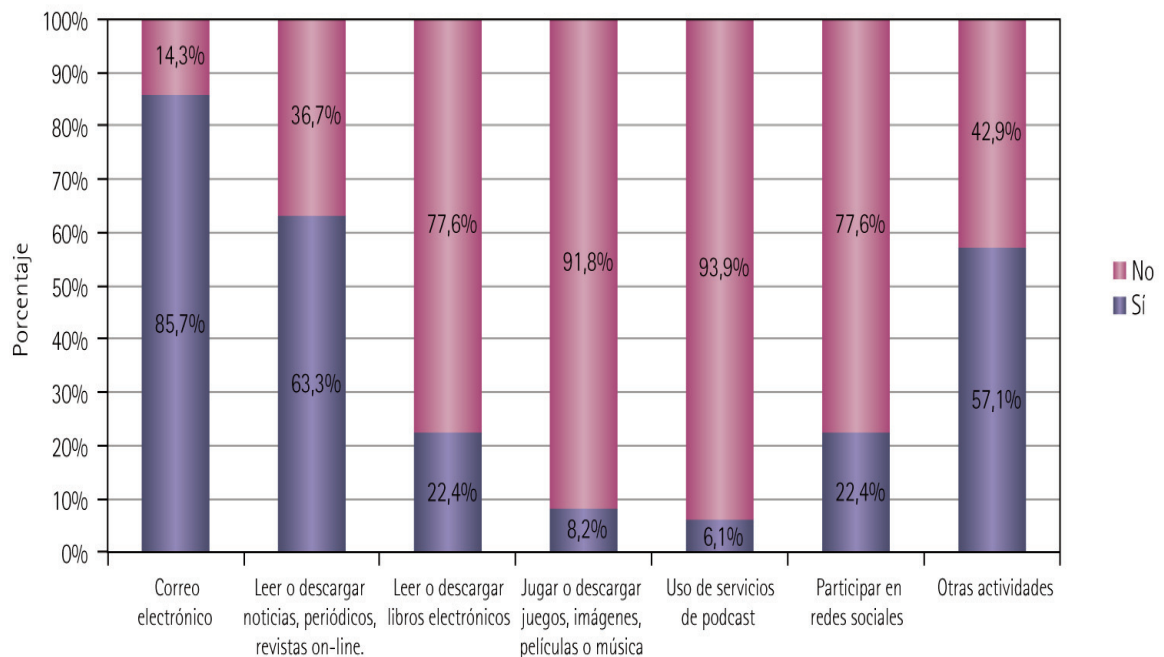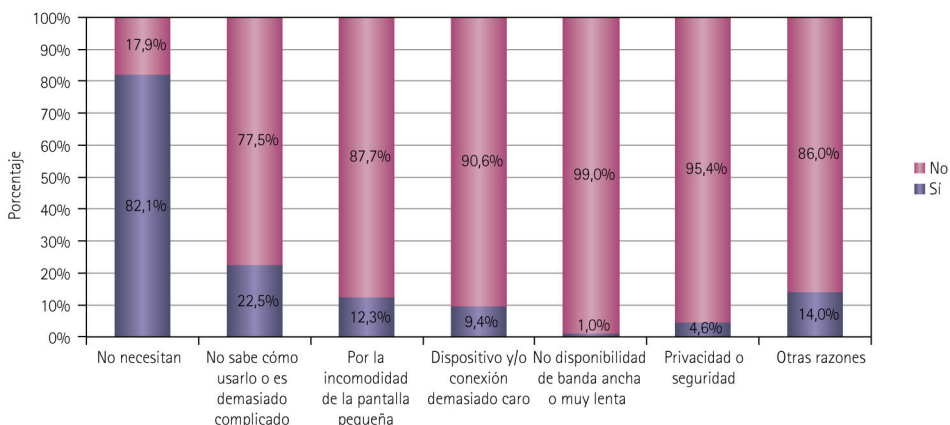*Fuente*: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.14. Purchases through e-commerce depending on the respondent's demographic variables (older than 65)

The table above must be completed with the following one to have an overall picture of the buyer profile older than 65, which shows the type of product or service that is normally bought by this population group. The largest percentage of purchases is made, of what in the survey is named as "Other services for trips" with 52.9%. Taking for granted that the other item about purchases linked to the trips is "Holiday Accommodation" with a percentage of 43.6%, it is seems logical to deduce that the previous one refers to the purchase of transport tickets (plane or train primarily), which confirms to a large extent, the conclusions of the discussion groups carried out in the current project framework. The next product type acquired by elderly people in percentage terms are tickets for events (38.7%), followed by books, newspapers, and magazines (21%), including in this section, e-books, that can indicate the reason for this percentage. The following percentage is the purchase of food products and other non- consumer durables with 20.2% and household goods (furniture, toys – we assume for their grandchildren – with 16.8%. Curiously, the lowest rate is for medicines (with 1.7%) and, as is logical, computer software games and video game consoles (2.5%). The medicines percentage can respond to various reasons, but the principal one might be the insecurity about their quality or the necessity to buy them in pharmacies that allow them to obtain the discounts associated to the personal situation of each one of the elderly people concerned.

Compras de distintos productos a través de comercio electrónico (mayores de 65)

	Sí	No
Productos de alimentación y otros de consumo no duraderos (limpieza, higiene,...)	20,2%	79,8%
Bienes para el hogar (de tipo duradero, p. ej. muebles, juguetes,...)	16,8%	83,2%
Medicamentos	1,7%	98,3%
Películas, música	4,2%	95,8%
Libros, revistas, periódicos (incluye libros electrónicos)	21,0%	79,0%
Material formativo on line	5,0%	95,0%
Material deportivo, ropa	11,8%	88,2%
Software de juegos de ordenador y de videoconsolas y sus actualizaciones	2,5%	97,5%
Otro software de ordenador y sus actualizaciones	12,6%	87,4%
Equipo informático (ordenadores y accesorios)	8,4%	91,6%
Equipamiento electrónico (excluido el informático)	10,9%	89,1%
Servicios de telecomunicaciones (p. ej., contratos de banda ancha, tarjetas prepago...)	6,7%	93,3%
Compra de acciones, pólizas de seguros u otros servicios financieros	9,2%	90,8%
Alojamiento de vacaciones (hotel, apartamento,...)	43,7%	56,3%
Otros servicios para viajes	52,9%	47,1%
Entradas para espectáculos	38,7%	61,3%
Otros productos o servicios	11,8%	88,2%

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.15. Purchases of different products through e-commerce (older than 65)

The use of the various possibilities that Information and Communication Technologies offer people over 65 is conditioned by the level of access and availability of such technologies. In this regard, the following graph indicates to us how television continues to be the predominant technology at home with 99.5% penetration of households followed by, telephone land lines with 88% and the radio with 74.5%. This is about the prevailing technologies in the past century whose implementation was carried out on a massive scale. If we stick to technologies that have multimedia communication capacities, the owning of a mobile phone by a member of the family is present in 72.3% of the households with people older than 65, while a computer can only be found in 26.1% of households with people older than 65.

Disponibilidad de tecnologías en el hogar (mayores de 65)
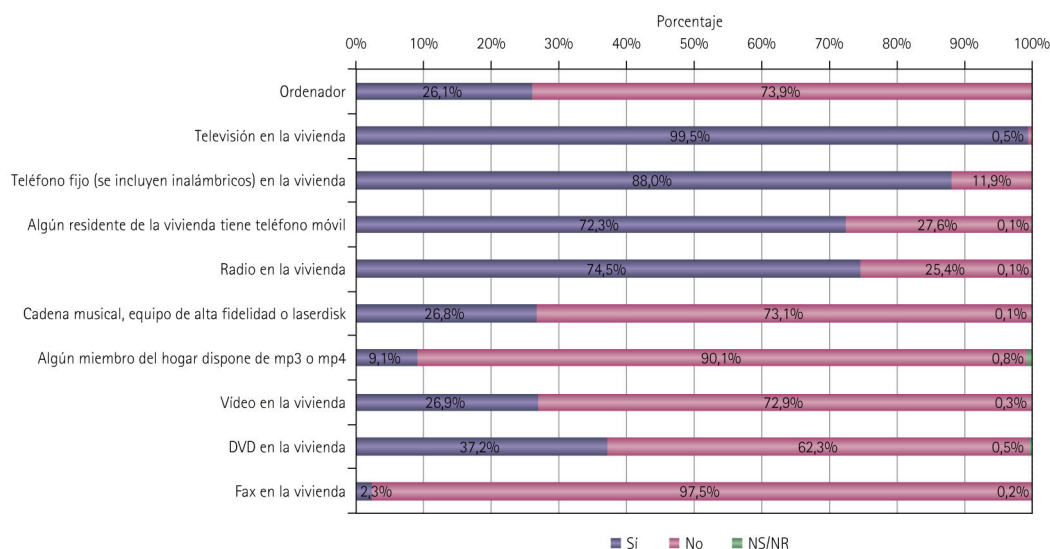
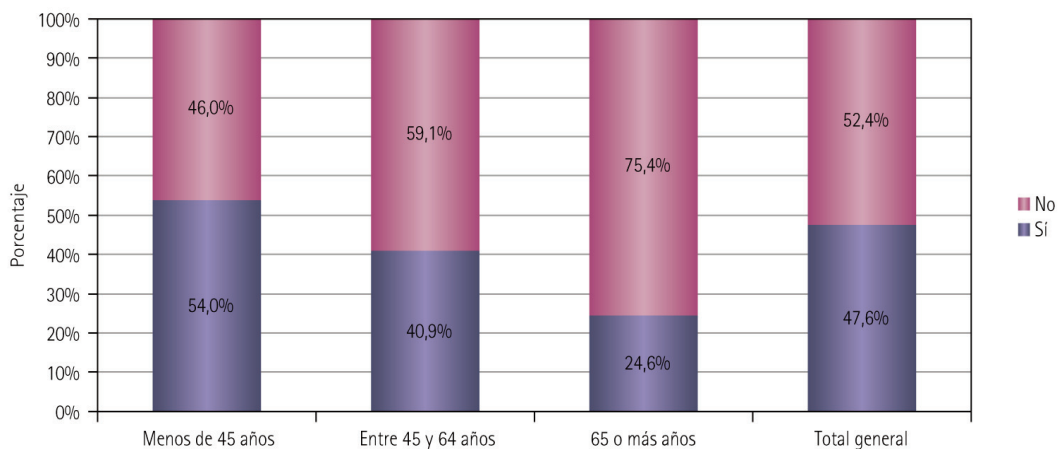*Fuente*: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.16. Availability of technology in the household (older than 65)

The availability of an Internet connection according to demographic variables of those surveyed, aged over 65, also shows us a series of indicators that allow us to know the Internet user profile. If we confine ourselves to gender, the difference between men and women is not particularly significant since, the percentage difference doesn´t reach 6 points. In the case of age, as the population groups advance, the availability of connecting to the Internet decreases, the greatest leap occurring among people aged between 65 and 69 (37.9%) to people aged 70 to 74 (26.2%). In the case of the habitat variable there exists a certain direct correlation between the population's size and the Internet availability, except, once again, in the case of the municipalities between 20,000 and 50,000 inhabitants, where the connection availability is 37%, versus 24.1% of the municipalities which are not provincial capitals with more than 50,000 inhabitants and less than 100,000 and 20.8% of the municipalities which are not provincial capitals with more than 100,000 inhabitants. Where there is the greatest availability of Internet connection is in provincial capitals with more than 500,000 inhabitants (31.4%) and in the rest of provincial capitals (30.8%). The level of studies is also a decisive criterion in the availability of an Internet connection since illiterates have it at only 8%, for those who have primary education it rises to 16.4%, shifting to 39% among those who have secondary education and reaching 67.9% among those who possess university studies. The level of household income is also a defining criteria regarding connection availability as the difference between the different income bands (less than 1,100 euros; from 1,100 to 1,800 euros; from 1,801 to 2,700 euros; and more than 2,700 euros) passing from 9.9%, to 35.8%, to 63.4% and to 83.8%, respectively.

Disponibilidad de conexión a internet según variables demográficas del encuestado (mayores de 65)

|		Sí	No	NS/NR
Total		23,9%	75,7%	0,4%
Sexo	Hombre	27,1%	72,6%	0,3%
	Mujer	21,8%	77,7%	0,5%
Edad	65 a 69 años	37,9%	61,7%	0,4%
	70 a 74 años	26,2%	73,4%	0,4%
	75 a 79 años	18,2%	81,4%	0,4%
	80 años y más	15,1%	84,4%	0,5%
Hábitat	Estrato 0 : Capitales de provincia con más de 500.000 habitantes.	31,4%	68,3%	0,3%
	Estrato 1 : Resto de capitales de provincia.	30,8%	68,7%	0,5%
	Estrato 2 : Municipios (no capitales de provincia) con más de 100.000 habitantes.	20,8%	79,2%	0,0%
	Estrato 3 : Municipios (no capitales de provincia) con más de 50.000 y menos de 100.000 habitantes.	24,1%	75,5%	0,4%
	Estrato 4 : Municipios con más de 20.000 y menos de 50.000 habitantes.	27,0%	72,6%	0,4%
	Estrato 5 : Municipios con más de 10.000 y menos de 20.000 habitantes.	22,1%	77,5%	0,4%
	Estrato 6 : Municipios con menos de 10.000 habitantes.	15,6%	83,9%	0,6%
Nivel de estudios	Analfabetos	8,0%	91,8%	0,3%
	Educación Primaria	16,4%	83,0%	0,6%
	Educación Secundaria	39,0%	60,8%	0,2%
	Educación Superior Universitaria	67,9%	32,1%	0,0%
	No se puede codificar	11,1%	88,9%	0,0%
Nivel de ingresos del hogar	Menos de 1.100 euros	9,9%	89,7%	0,4%
	De 1.100 a 1.800 euros	35,8%	63,9%	0,3%
	De 1.801 a 2.700 euros	63,4%	36,6%	0,0%
	Más de 2.700 euros	83,8%	16,2%	0,0%
	NS/NR	28,2%	71,0%	0,7%

Fuente: INE. Encuesta sobre equipamiento y uso de tecnologías de la información y comunicación en los hogares (2012).

Graph 3.17. Internet connection availability depending on the respondent's demographic variables (older than 65)

Another approach that might be interesting we obtain from the report conducted by The National Observatory for Telecommunication and Information Society (ONTSI in Spanish) about the socio-demographic profile of Internet users according to the INE[6] data of 2015 (Urueña et al., 2015b). We can see how the percentage of Internet users aged between 65 and 74 who access the Internet on a weekly basis is 28%, far from the 56.8% of those who access the Internet aged between 55 and 64, 76% of people aged between 45 and 54 and of course, the age groups 35 to 44, 25 to 34 and 16 to 24, with weekly connecting percentages of 87.7%, 91.7% and 96.8%, respectively.

Porcentaje de internautas en cada categoría por edad (%)
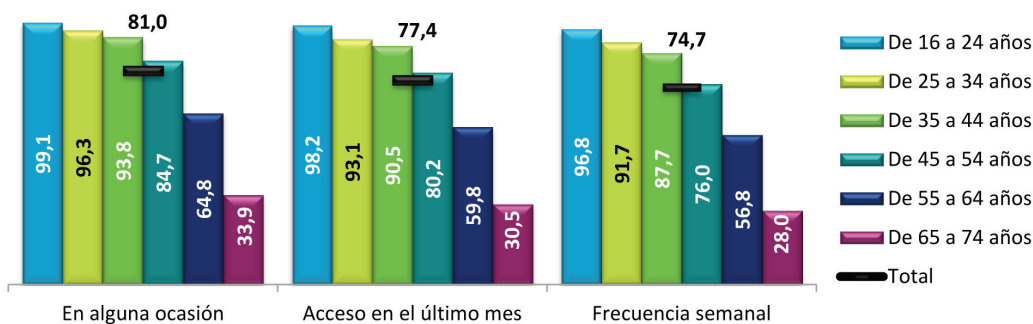
Graph 3.18. Rate of internet users in each age group (%)

In the same report previously cited, we can find an analysis of the percentage of Internet users who connect on a weekly basis linked to the variation of these percentages between 2005 and 2015 according to the variables of gender, age, employment situation, completed studies and habitat. The lowest percentage variations occur between students and university graduates, followed by people aged between 16 and 24 and people between 65 and 74 years old.

The three first groups, because Internet use was already widespread, whereas in the case of the elderly aged between 65 and 74 for the opposite reason, as their incorporation to Internet use hasn´t been as widespread as expected. Among those who have experienced a greater percentage growth as Internet users we find the age group between 35 and 54, the unemployed and those who possess studies not higher than 1st grade of Secondary School.
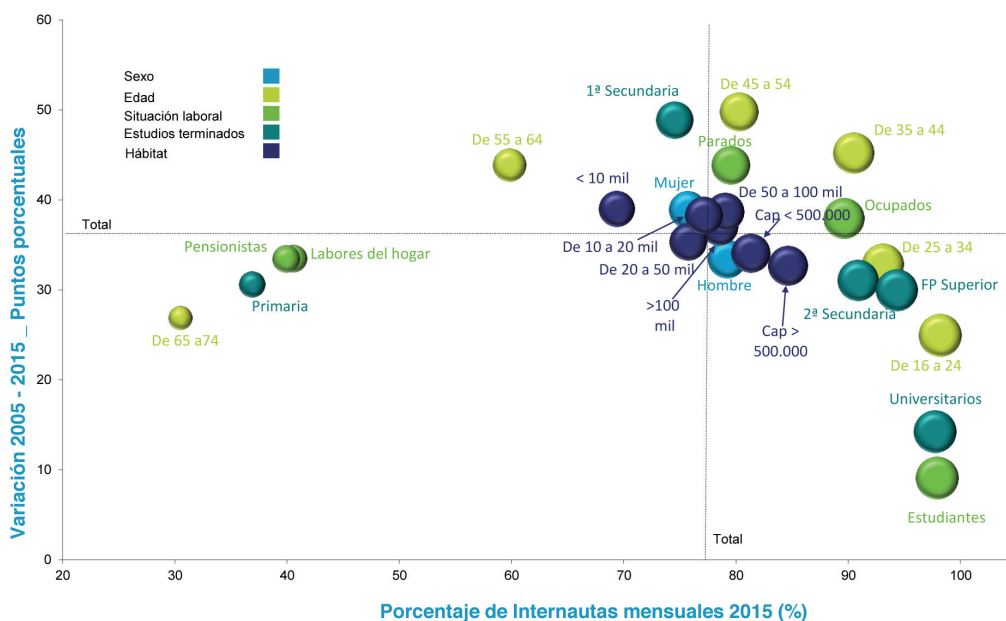
Graph 3.19.

6 http://www.ontsi.red.es/ontsi/sites/default/files/perfil_sociodemografico_de_los_internautas._analisis_de_datos_ine_2015.pdf

If we analyze the same variables in the same period of time with regard to those who have connected to the Internet weekly, we notice that the groups who are more resistant to the use of Internet are the people aged 65 to 74, those with primary studies, pensioners and people dedicated to housekeeping. Meanwhile, as in the case of the weekly Internet users who connect monthly, amongst those who have increased a greater percentage as Internet users, we find the age group of people between 35 and 54, the unemployed and those who have lower secondary education and who have increased less are university students.
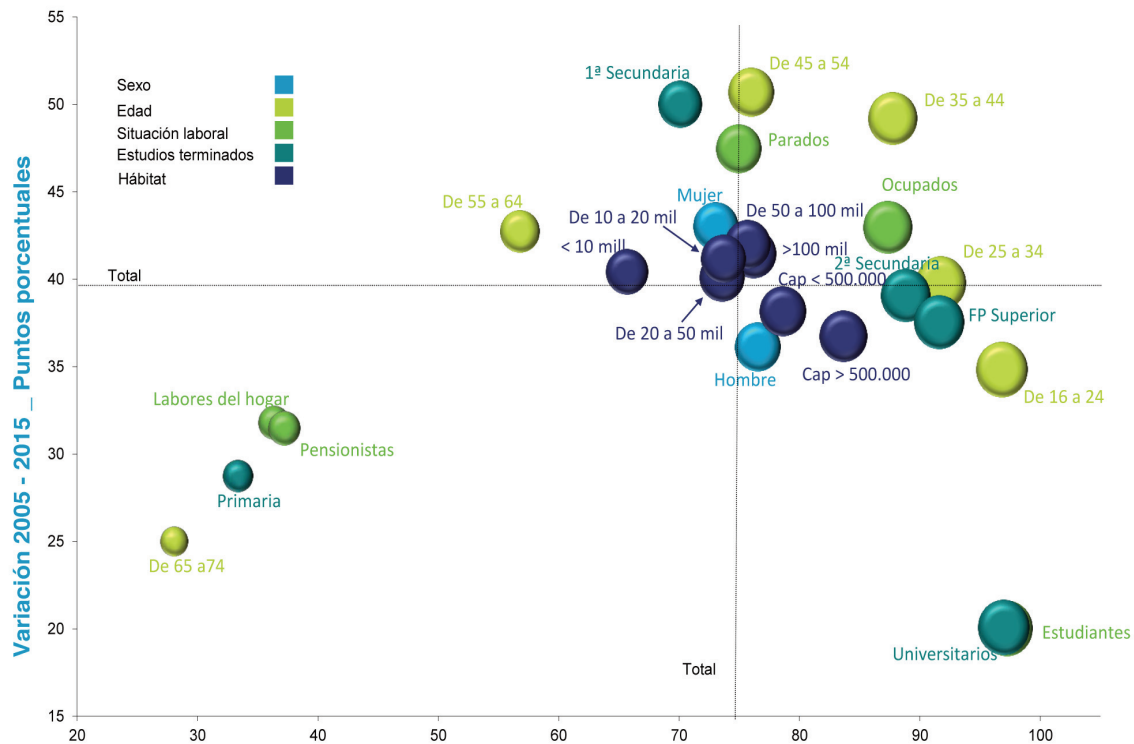
Graph 3.20.

If we analyse the last survey of the National Institute of Statistics of 2015 on the use of ITC products by people, we can observe how an evident reduction in the digital divide has taken place, as we will see in the data that we will analyse below[7]. Specifically, on the use of the different ITC products according to demographic characteristics we find that an inverse relation in the use exists, between the increase in age and the complexity of the device or activity. The use of mobile phones is where there is less difference as, while those who use it to a greater extent 98,9% are people aged between 16 and 24, this difference is lower regarding the later age group (65 to 74) using it 82.3%. In reference to the use of computers, the people in age groups between 16 and 44 use it in a greater proportion to 90%, whereas among people aged between 45 and 54 the proportion lowers to 84.9%, to 66.4% among those aged between 55 and 64 and to 38.1% for people aged between 65 and 74. The proportions of people that have used the Internet are similar in percentage, although in the case of people aged between 65 and 74 it´s use decreases to 33.9%. Finally, the people who have ever bought online, in the case of people over 65, the proportion drops to 11.3%, far from the 29.9% of the age group between 55 and 64, from the 46% of people aged between 45 and 54 and from the rest of younger age groups (61.4% in the age group from 35 to 44, 68.2% in the age group from 25 to 34 and 59.6% in the age group from 16 to 24)

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7 The graphs below have been made by the author based on the data published by the National Statistics Institute on October 1, 2015 on its website http://www.ine.es/dynt3/inebase/es/index.htm?padre=2246&capsel=2250

Uso de productos TIC por características demográficas y tipo de producto

	Edad: De 16 a 24 años	Edad: De 25 a 34 años	Edad: De 35 a 44 años	Edad: De 45 a 54 años	Edad: De 55 a 64 años	Edad: De 65 a 74 años
■ Personas que han utilizado el teléfono móvil en los últimos 3 meses	98,9	98,5	98,2	97,9	92,8	82,3
■ Personas que han utilizado alguna vez el ordenador	98,8	96,1	93,1	84,9	66,4	38,1
■ Personas que han utilizado alguna vez Internet	99,1	96,3	93,8	84,7	64,8	33,9
■ Personas que han comprado alguna vez a través de Internet	59,6	68,2	61,4	46,0	29,9	11,3

Graph 3.21. Use of ICT products by demographic characteristics and type of product

If we focus on the moment of use of computers by demographic characteristics, one of the key elements, its use in the last month, is especially significant since it shows us that the generational digital divide exists, but not in the dimension that we could expect. In the group of young people between 16 and 24 it is used by 93.7%, whereas the age groups between 25 and 54 have higher percentages of use at 85%. 75.2% of people aged between 65 and 74 used it in the last few months, in a per-centage not far from the 82.5% of people between 55 and 64 who used a computer in the last month. Probably, the most remarkable figure is the percentage of people between 65 and 74 who used a computer more than a year ago, as it rises to 17.1%, far from the 10.5% of the age group between 55 and 64, and from the rest of age groups (5.4% between 45 and 54, 4.1% between 35 and 44, 5.9% between 25 and 34, and just 2.1% among those between 16 and 24).

Uso de ordenador por características demográficas y momento último de utilización. Año 2015

■ En el último mes   ■ Hace más de 1 mes y menos de 3 meses   ■ Hace más de 3 meses y menos de 1 año   ■ Hace más de 1 año
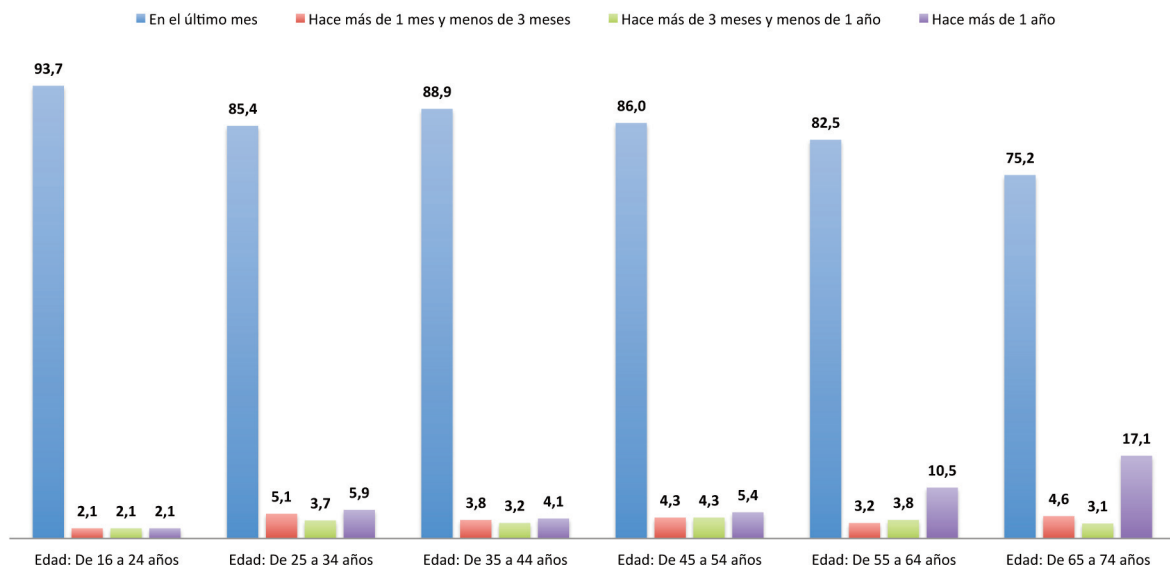
Graph 3.22. Use of computer by demographic characteristics and last time of use Year 2015.

If we apply the preceding temporary criteria to Internet use, we can verify that the demographic differences in the use of the Net are far less than if we stick to computer use, which seems to indicate that there is a use of other type of devices, tablets and mobiles principally, to connect to the Internet. From the following graph we can obtain, in addition, other conclusions. Such as, that the percentage differences between those who connected more frequently to the Internet in the last month (people between

16 and 24) and those who least did (people between 65 and 74) doesn´t reach 10 points, the difference between both groups being just 5 points in the case of those who connected more than a year ago. Or, if we compare those who used a computer more than a year ago with those who connected to the Internet more than a year ago in the age group between 65 and 74, we can verify that the difference in percentage points is almost 12.

Uso de Internet por características demográficas y momento último de utilización. Año 2015

╳ Hace más de 1 año   ▲ Hace más de 3 meses y menos de 1 año   ■ Hace más de 1 mes y menos de 3 meses   ● En el último mes
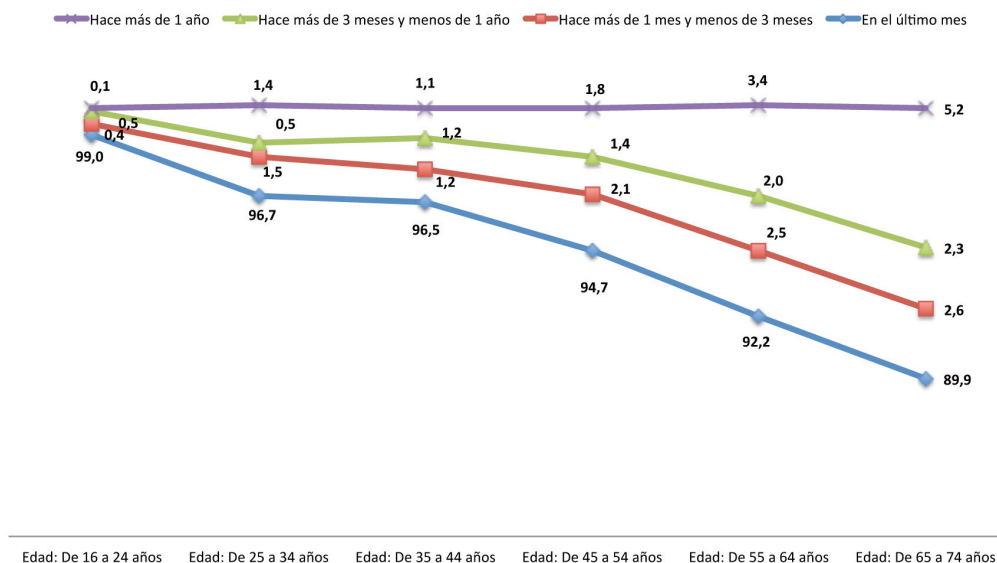
Graph 3.23. Internet use by demographic characteristics and last time of use

On the existence of a digital divide, one of the most significant data is the frequency in Internet use in the last three months, based on the consideration that this data refers to those who are Internet users. In this sense, the percentage differences are similar to the ones related to computer use. The everyday use of the Internet gradually decreases its percentage as age increases since, in people aged 16 to 24 , 92.8% use it daily, this quantity reduces to 89.1%

(ages 25 to 34), 83.1% (ages 35 to44), 74.7% (ages 45 to 54), 71.7% (ages 55 to 64), to reach 65% of the people aged between 65 and 74. The percentage of those who connect less than once per week reaches 10.5% in the elderly aged over 65, but in the previous two age groups it is between 7.4% (ages 45 to 54) and 7.5% (aged 55 to 64). In the rest of age groups, this percentage doesn´t reach 4.3% and 1.8% for people aged between 16 and 24.

Uso de Internet en los últimos 3 meses por características demográficas y frecuencia de uso. Año 2015

■ Diariamente, al menos 5 días por semana   ■ Todas las semanas, pero no diáriamente   ■ Menos de una vez a la semana

	Edad: De 16 a 24 años	Edad: De 25 a 34 años	Edad: De 35 a 44 años	Edad: De 45 a 54 años	Edad: De 55 a 64 años	Edad: De 65 a 74 años
Diariamente	92,8	89,1	83,1	74,7	71,7	65,0
Todas las semanas	5,4	8,0	12,6	17,9	20,7	24,4
Menos de una vez	1,8	2,9	4,3	7,4	7,5	10,5
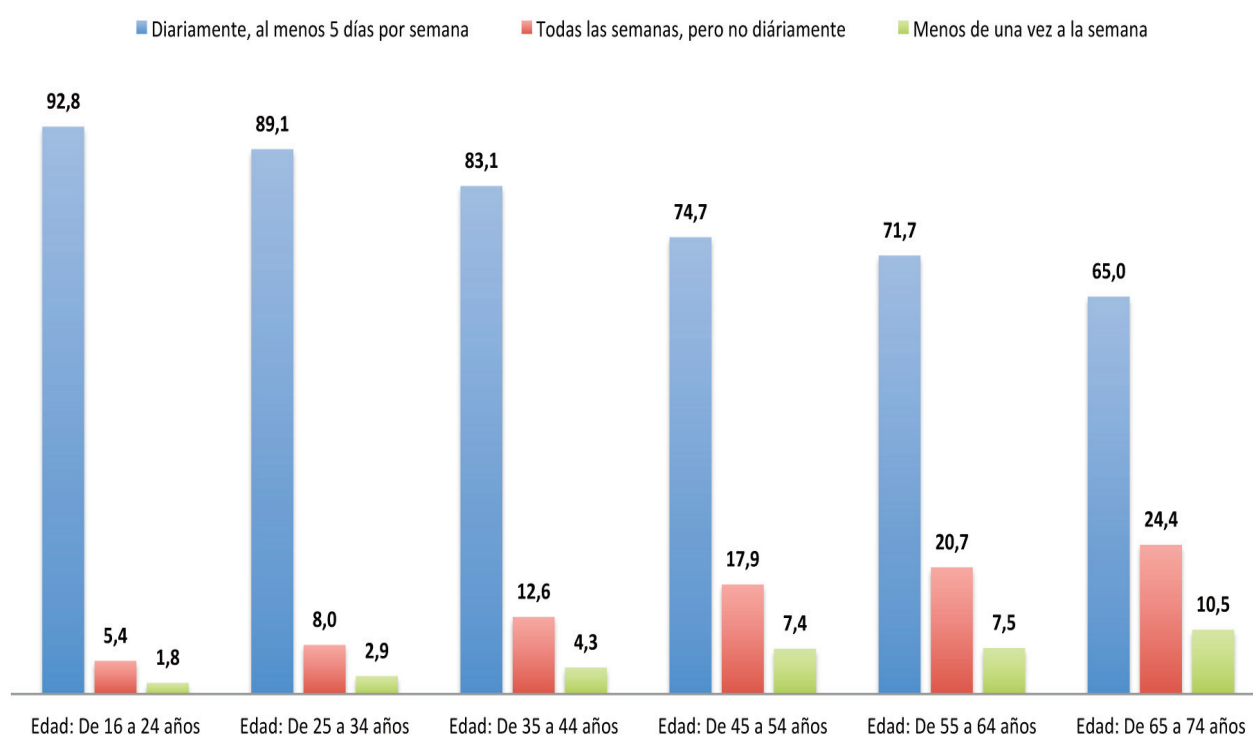
Graph 3.24. Use of the Internet in the last three months by demographic characteristics and frequency of use. Year 2015

In order to assess the existence of a generational digital divide, we will analyze below the latest data published by the National Institute of Statistics (INE)[8] about the use and activities made in the scope of information technology, published on October 1st, 2015. If we observe the services related with the access to information according to the different age groups (the INE points out that the statistical operation follows the methodological recommendations of the statistical office of the European Union –EUROSTAT-), we can conclude that there

exist two activities where the generational digital divide is nonexistent: "reading news, newspapers or current affairs magazines on line" and "looking for information about health topics", since the age group between 65 and 74 performs this activity at even higher percentages than younger age groups. Where we can find this generational divide is, as it seems logical based on leisure habits according to age and necessities, in software downloading (excluding games), the search for information about education and watching videos and films online.

8 http://www.ine.es/inebmenu/mmu_tic.htm

Servicios relacionados con el acceso a la información en Internet usados por motivos particulares en los últimos 3 meses por características demográficas y naturaleza del servicio . 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años

Servicio	16-24	25-34	35-44	45-54	55-64	65-74
Servicios relacionados con el acceso a la información: Ver vídeos o películas por Internet	83	72	61,4	44,6	36,4	32,6
Servicios relacionados con el acceso a la información: Escuchar la radio emitida por Internet	33,1	43,7	38,3	31,5	25,6	17,6
Servicios relacionados con el acceso a la información: Descargar software (excluido el de juegos)	51,6	45,5	33,5	26,2	17,9	14
Servicios relacionados con el acceso a la información: Búscar información sobre bienes y servicios	64,4	74,4	0	69,9	60,8	54,9
Servicios relacionados con el acceso a la información: Consultar wikis (como Wikipedia) o enciclopedias on line para obtener conocimientos sobre cualquier tema	84	72	66,2	61,5	56,2	52,4
Servicios relacionados con el acceso a la información: Buscar información sobre educación, formación u otro tipo de cursos	77,7	70,5	69,5	59,8	49,3	35,9
Servicios relacionados con el acceso a la información: Buscar información sobre temas de salud (p.ej. lesiones, enfermedades, nutrición, etc.)	62	67,2	71,2	64	61,9	62,8
Servicios relacionados con el acceso a la información: Leer noticias, periódicos o revistas de actualidad on line	78,4	83	80,8	73,7	76,1	77,2

Graph 3.25. Services related to information access on the Internet used for personal reasons in the last three months by demographic characteristics and nature of the service. 2015.

The generational divide is almost nonexistent with respect to social and political participation, except with regard to downloading games, images, films or music". Nevertheless, there exist two types of services that elderly people have not used (as it seems logical in terms of their social and labour peculiarities): "participa-tion in networks of a professional type" and "looking for a job or sending a job application". In the case of the use of "online banking" or "services related to travel and accommodation", people aged between 65 and 74 use them in similar percentages as the rest of age groups.

Servicios relacionados con la participación política y social otros servicios en Internet usados por motivos particulares en los últimos 3 meses por características demográficas y naturaleza del servicio. Año 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años

Servicio	16-24	25-34	35-44	45-54	55-64	65-74
Otros servicios: Jugar o descargar juegos, imágenes, películas ó música	89,9	81,1	70,2	54,9	43,7	44,5
Otros servicios: Banca electrónica	27,1	55,4	59,1	50,8	49,8	44,6
Otros servicios: Vender bienes o servicios (venta directa, mediante subastas, etc.)	13,3	17,0	14,3	10,0	8,9	7,4
Otros servicios: Utilizar servicios relacionados con viajes y alojamiento	44,7	60,6	55,4	50,2	50,1	47,3
Servicios relacionados con la vida profesional: Participar en redes de tipo profesional (creando o manteniendo un perfil de usuario o enviando mensajes, etc. a sitios como Linkedin, etc.)	11,5	24,4	18,2	15,4	10,3	2,2
Servicios relacionados con la vida profesional: Buscar empleo o enviar una solicitud a un puesto de trabajo	31,7	42,4	26,8	19,9	8,7	0,9
Servicios relacionados con la participación política y social: Tomar parte en consultas on line ó votaciones sobre asuntos cívicos y políticos (p.ej. sobre planificación urbana, firmar una petición)	12,6	15,7	13,4	10,1	9,3	10,9
Servicios relacionados con la participación política y social: Emitir opiniones sobre asuntos de tipo social o político en lugares de la Red (p.ej. en blogs, redes sociales, etc.)	22,5	22,6	19,2	14,0	13,7	12,5

Graph. 3.26. Services related to political and social participation and other Internet services used for personal reasons in the last three months by demographic characteristics and nature of the service. 2015

With reference to the services related to Internet learning during the last three months, its use decreases according to increasing age. It seems logical that young people aged between 16 and 25 (those at a school age) are those who use this kind of services more, the majority use of this group being: "the use of online learning material that is not a complete course" (41.4%) and "communicating with monitors or students, using educational portals or websites" (35.6%). In the case of people between 65 and 74, the percentages are less, in all categories, than 9%.

Realización de actividades de aprendizaje en Internet en los últimos 3 meses por características demográficas y naturaleza del servicio. Año 2015

- Realización de actividades de aprendizaje a traves de Internet con fines profesionales o privados: Realizar algún curso on line

- Realización de actividades de aprendizaje a traves de Internet con fines profesionales o privados: Utilizar material de aprendizaje on line que no sea un curso completo on line (material audiov., software de aprendizaje on line, libros de texto electr.)

- Realización de actividades de aprendizaje a traves de Internet con fines profesionales o privados: Comunicarse con monitores o alumnos utilizando portales o sitios web educativos

- Realización de actividades de aprendizaje a traves de Internet con fines profesionales o privados: Otras actividades de aprendizaje por Internet

	Curso on line	Material	Comunicarse	Otras
Edad: De 65 a 74 años	6,1	8,7	3,5	4,9
Edad: De 55 a 64 años	10,4	12,7	7,7	9,3
Edad: De 45 a 54 años	11,8	19,5	11,0	11,6
Edad: De 35 a 44 años	15,2	24,2	13,0	12,8
Edad: De 25 a 34 años	16,9	26,2	15,2	14,3
Edad: De 16 a 24 años	12,8	41,4	35,6	17,2

Graph 3.27. Performing learning activities on the Internet in the last three months by demographic characteristics and nature of the service. 2015

Another aspect which can be evaluated and can be significant with respect to the existence of a generational digital divide, are those Internet users who did not send completed forms to the public Administrations, having the necessity to submit such documents and the declared reasons not to do so. The majority reason alleged by all the age groups is "because another person transacted it via internet on my behalf", 63.7% of people aged between 55 and 64, 51.9% of people aged between 45 and 54, and 48.7% of people aged between 65 and 74. We can see therefore that the older population group is not the majority group amongst those who allege such reason. They are, when the alleged reason for not submitting documentation to the public Administration is "the lack of skills or knowledge" (32.6%). This age group is not the majority in the other alleged reasons.

Usuarios de Internet en los últimos 12 meses que no enviaron formularios cumplimentados a las AA.PP. a través de Internet, teniendo necesidad de presentar tales documentos, por características demográficas y razones declaradas. Año 2015

■ Edad: De 16 a 24 años   ■ Edad: De 25 a 34 años   ■ Edad: De 35 a 44 años   ■ Edad: De 45 a 54 años   ■ Edad: De 55 a 64 años   ■ Edad: De 65 a 74 años
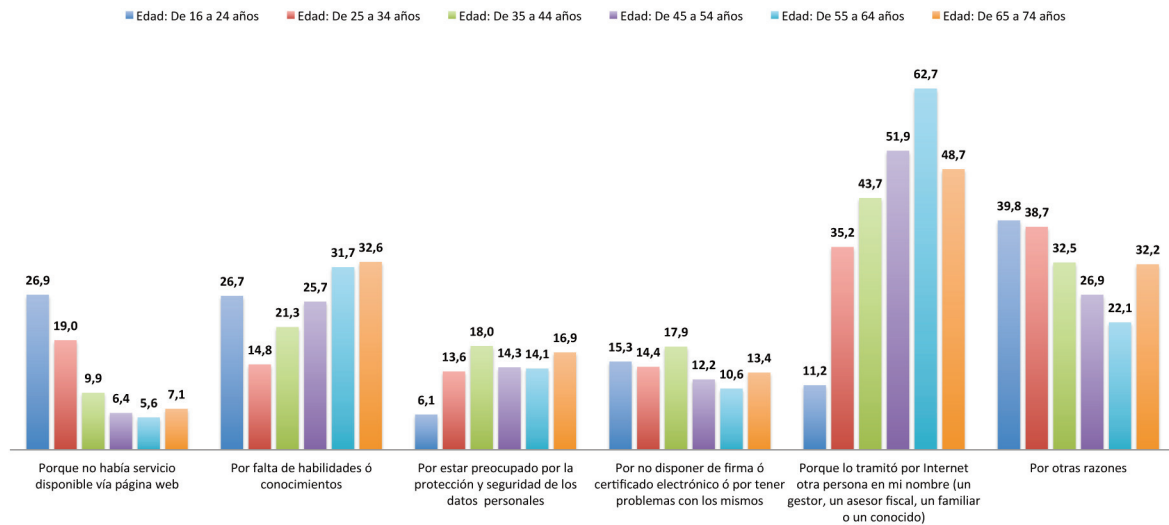
Graph. 3.28. Internet users in the last 12 months who did not send filled-in forms to the public administrations via Internet, having the necessity to submit those documents, by demographic characteristics and declared reasons. 2015

One of the reasons that can greatly condition citizens' participation in the services of Information Society is the "Degree of confidence in the Internet" according to demographic characteristics. In this respect, it does not seem that the generational differences in this case are especially significant, since, although it is true that distrust increases with age, the greatest differences do not reach 13 points (age group between 16 and 24, 25% have "little or no trust in the Internet" and the age group bet-

ween 65 and 74, 37.8%). A fair level of confidence in the Internet is declared majoritarily by all the groups. Nevertheless, the differences between those who declare little or no trust in the Internet and the ones who declare a lot of trust, is very broadly in favor of the first one, in some population groups the difference reaches 31.3 percentage points (in the eldest age group). This data shows certain distrust on the Internet, which can be a hindrance for a further use of the utilities and services that it provides.

Usuarios de Internet en los últimos 12 meses por características demográficas y grado de confianza en Internet. Año 2015

■ Grado de confianza en Internet declarado: Poco o nada   ■ Grado de confianza en Internet declarado: Bastante
■ Grado de confianza en Internet declarado: Mucho
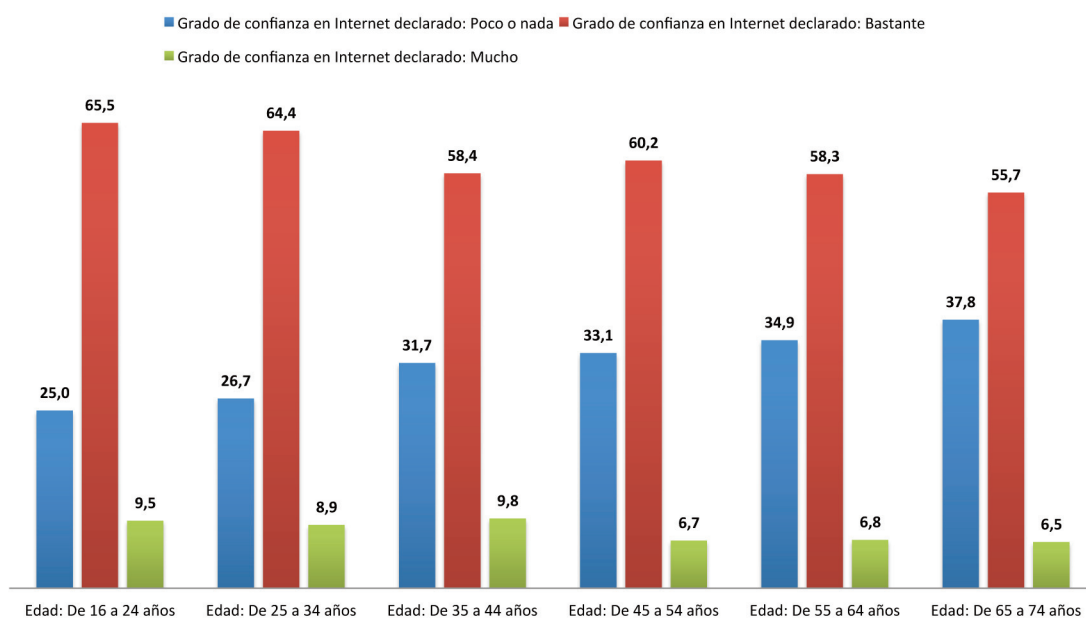
Graph 3.29. Internet users in the last 12 months by demographic characteristics and degree of confidence in the Internet. 2015.

One criterion that indicates the degree of depth in the use linked to Information and Communications Technology is whether to backup or not your files and we confirm that as people get older the tendency is not to backup files. In the first four age groups those who backup files are the majority, with the percentage decreasing between these and those who do not backup files until being practically equal at the age group between 45 and 54 (50.4% who backups files versus 49.6% who do not do it). From that age group on, those who do not backup files are the majority, reaching, in the age group of people between 65 and 74, a difference of 20.6 percent points.

Internautas en los últimos 12 meses por características demográficas y realización de copias de seguridad de sus ficheros. Año 2015
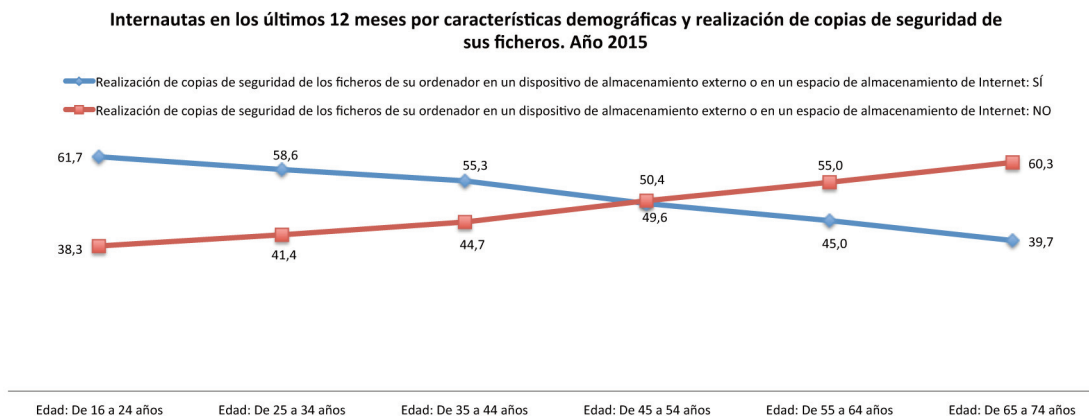
Graph 3.30.Internet users in the last 12 months by demographic characteristics and the backing up of their files. 2015.

Another piece of data that can also show the grade of technological implication is the performance of tasks which link mobiles phones to computers that, because of their complexity, can be significant respect with to the technological capacity of each age group. In this case, the generational differences are appreciable and we can see that there exists an inverse relation between the tasks carried out and age. The task most performed by all age groups is "transferring files between computers and other devices", which is carried out by 86.1% of individuals aged between 16 and 24, decreasing to 42.2% amongst people aged 65 to 74. It also decreases with age The percentage of people who " install software or applications (apps)" also decreases with age which goes from 78.5% (in ages between 16 and 24 years) to 23.6% (in ages between 65 and 74 years). The least performed task is "changing the configuration of any software", which is only carried out by 40% of the youngest age group versus 8.7% of the eldest age group.

Usuarios de Internet en los últimos 12 meses por características demográficas y tareas relacionadas con los móviles y ordenadores realizadas en ese periodo. Año 2015
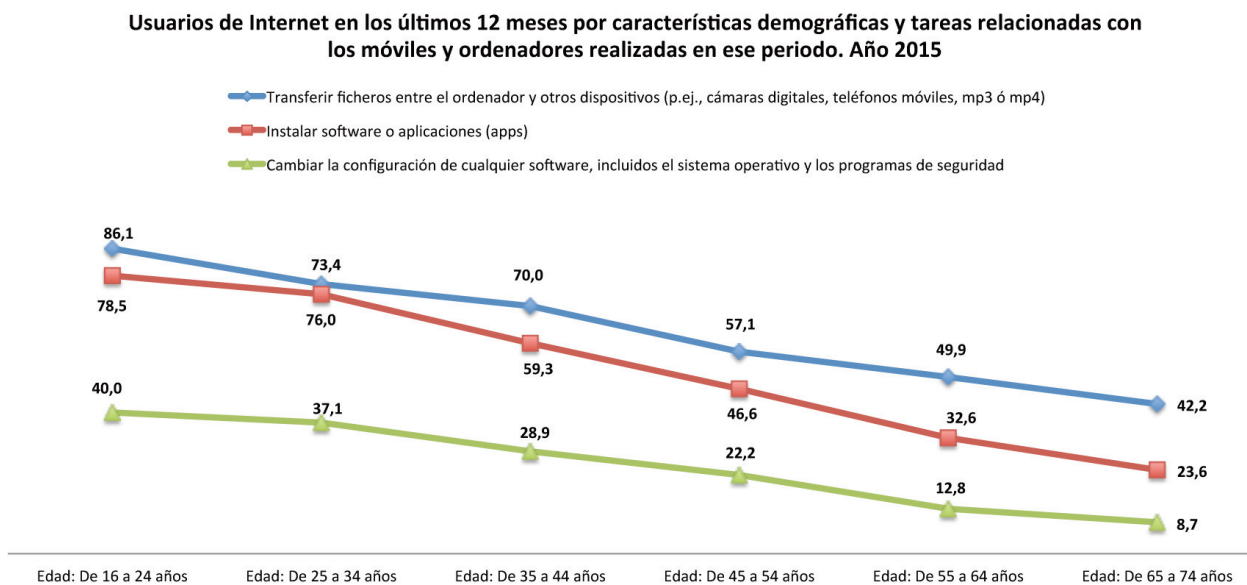
Graph 3.31. Internet users in the last 12 months by demographic characteristics and tasks related to mobile phones and computers performed in that period of time. 2015.

Another reference that can show the level of knowledge and implication in computer tasks in different generations is the use of security software. In this case, the differences are not at all ostensible amongst the different age groups; the eldest age group updates security software even more than the youngest age group (although the difference is less than 2.5 percentage points). Notwithstanding, the hig-

hest ratio of people who never update security software is in the age group between 65 and 74, with 17.3%, followed by the age group between 55 and 64 with 13.7%. These percentages go down as the age decreases, reaching ratios around 11% in the rest of age groups, except amongst people between 25 and 34 years old, whose ratio of individuals who never update security software is 8.1%.

Internautas en los últimos 12 meses que han utilizado algún software de seguridad informática por características demográficas y actualización de ese software. Año 2015

Graph 3.32. Internet users in the last 12 months who have used some kind of computer security software by demographic characteristics and update of that software. 2015.

In the same way as in the previous graph, the types of computer tasks carried out by the different age groups in the last twelve months can show us whether there is a digital divide. In each one of the tasks, the rate of individuals who performs it decreases in direct relation to the increase of age. The majority task in all age groups is "copying or moving files or folders", which is carried out by 89.6% of young people between 16 and 24 years old, a percentage that decreases to 50.4% amongst people aged 65 to 74. In the case of "using a word processor", the differences between both groups remains at a similar proportion, given that the percentage is 40.8% points, while in the previous task it was 39.2 points of difference. The task where there exists a greater difference between both groups is "creating presentations and documents that integrate text, images and tables or graphs"; the difference is

60.3 points (79.9% in people aged 16 to 24 versus19.6% in people aged 65 to 74). Notwithstanding, the difference between the youngest population group and the rest of groups is significant, since the difference with the next older group (25 to 34) is 24 percentage points. The task with the lowest percentage difference between the majority and the minority group is "using advanced spreadsheet functions", whose differences do not exceed 28.4 points (40.1% in ages between 16 and 24, and 11.7% in ages between 65 and 74). The least performed task by the whole of the population is "to program with a programming language", as you can understand, with percentages of 15.1% in ages between 16 to 24, 10.8% between 25 and 34, decreasing to 7.2% (ages between 35 and 44), 4.7% (between 45 and 54 years old), 2.1% (between 55 and 64), reaching only 0.5% in ages between 65 and 74.

Usuarios de Internet en los últimos 12 meses por características demográficas y tareas relacionadas con la informática realizadas en ese periodo. Año 2015
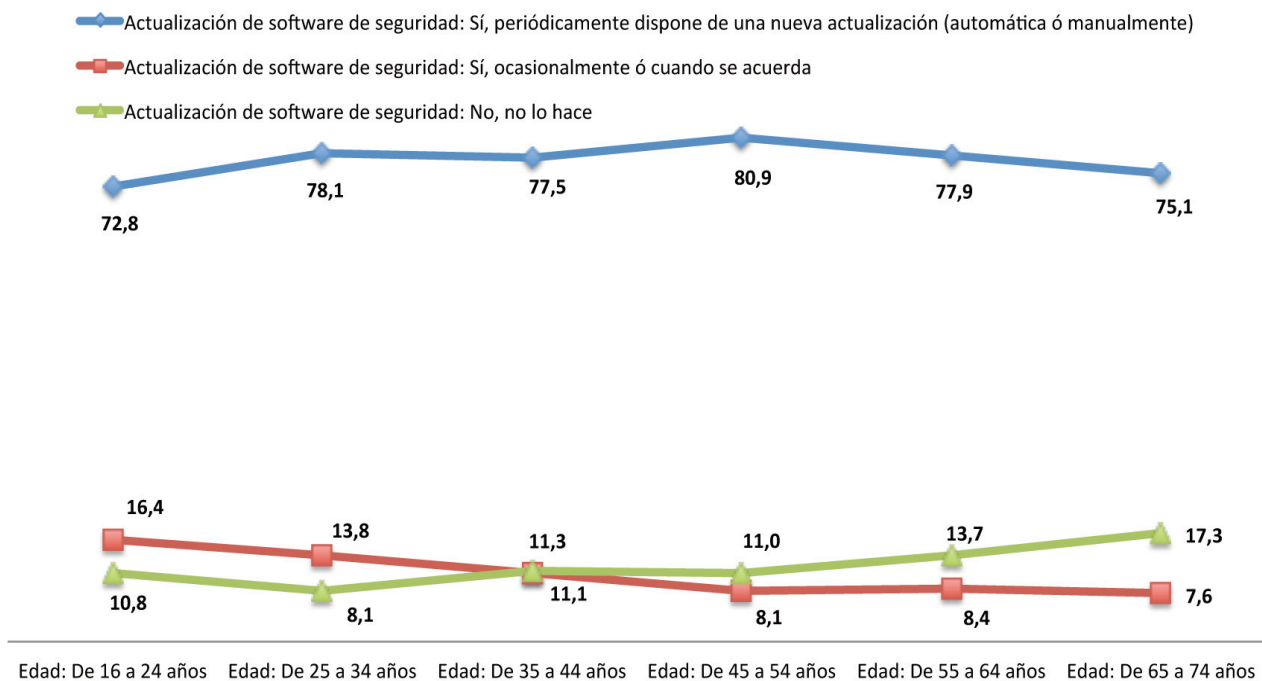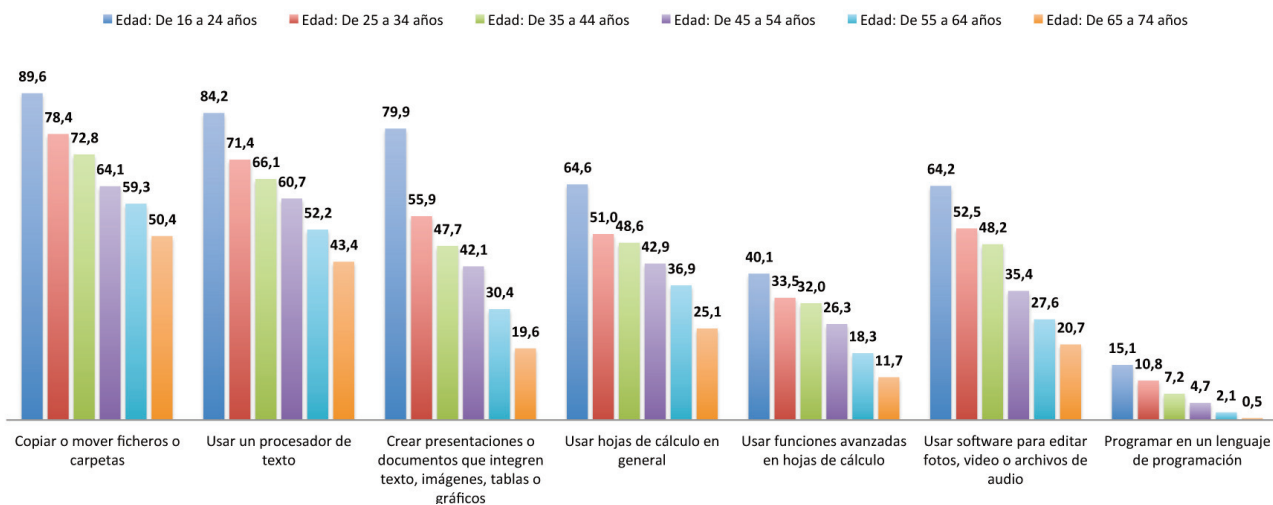

Graph 3.33. Internet users in the last 12 months by demographic characteristics and tasks related to computers performed in that period of time. 2015.

A significant aspect is the non-performance of certain activities on the Internet and the adduced reasons. In this case, the people aged between 65 and 74 are the ones who have alleged to a lesser extent this kind of reasons; we do not know if this is due to the ignorance of the risk involved or that they do not understand the depth of these questions. The activities whose percentages are similar to the rest of age groups are: "buying or ordering goods or services for private use", "performing online banking activities", "carrying out online bank activities, such as bank account management" and "communicating with the public Administrations online".
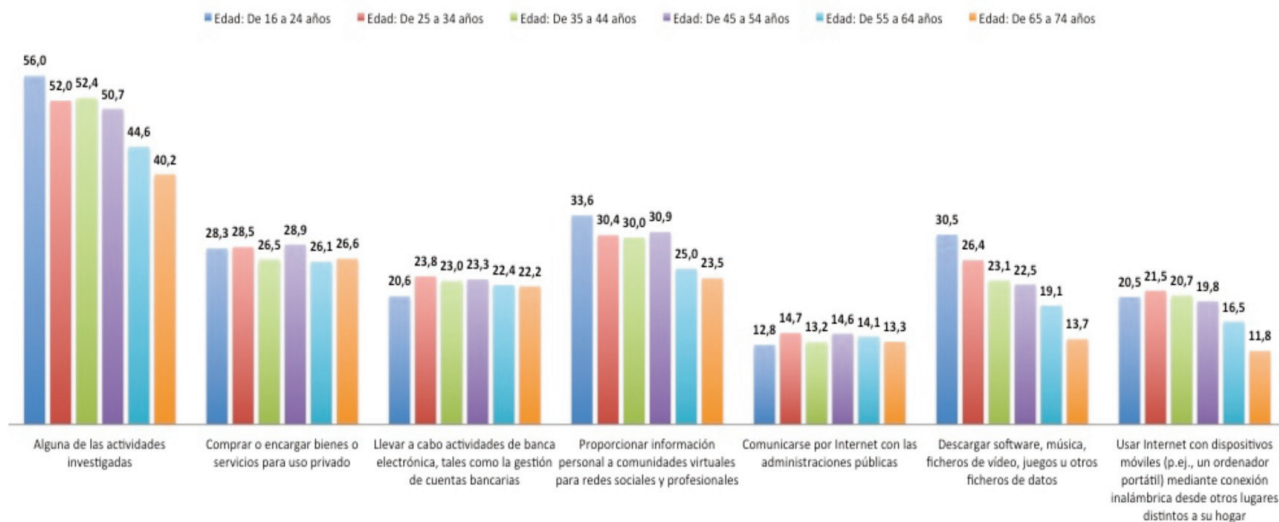
Graph 3.34. Internet users in the last 12 months and limitation or non-activity performance for security reasons by demographic characteristics and type of affected activities. 2015.

Another piece of data which can serve to show the level of the generational digital divide is "the communication services used during the last three months" depending on age categories. The communication services where we find the greatest differences between the 65 to 74 age group and the rest of majority groups are :"uploading specific contents of a webpage to be shared", with a difference of 46.1 points (66.4% in ages between 16 and 24 and 20.3% in ages between 65 and 74 -not far from 21.2% in ages between 55 and 64); and "participating in social networks during the last three months", in which the difference is 53.1 percentage points (90.5% in ages between 16 and 24, and 37.4% in ages between 65 and 74).

Servicios de comunicación en Internet usados por motivos particulares en los últimos 3 meses por características demográficas y naturaleza del servicio . 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años
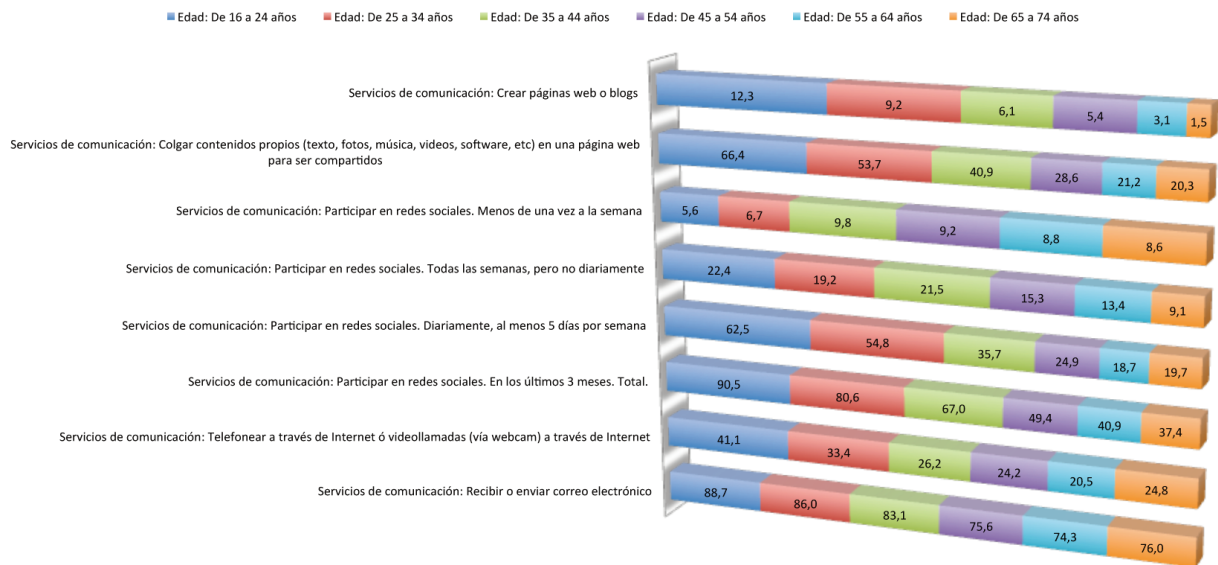
Graph 3.35. Communication services on the Internet used for personal reasons in the last three months by demographic characteristics and the nature of the service. 2015.

If we analyse "Type of incidents when using the Web", we can also see how people aged 65 to 74 are not in percentage terms far from the rest of age groups, although they are a minority in the more cited incidents, such as "to be infected with a virus or another computer infection in such way that information and time were lost" (18.9% versus 29.8% of the age group between 16 and 24) or "receiving spam emails" (47.1% versus 65.3% of the 25 to 34 age group). The rest of the cited incidents have very low percentages and the differences do not reach 3 percentage points.

Usuarios de Internet en los últimos 12 meses y presentación de incidentes de seguridad al usar la Red por características demográficas y tipos de incidentes. Año 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años
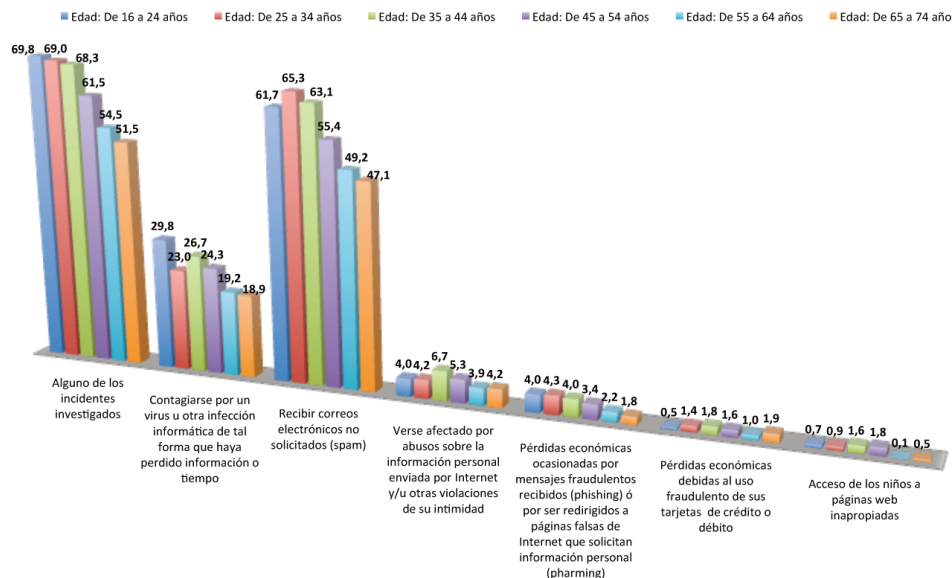
Graph 3.36. Internet users in the last 12 months and security incidents occurring when using the Net by demographic characteristics and types of incidents. 2015.

In the field of e-commerce, regardless of when was the last time you bought online, other data that may be illustrative about participation in Information Society is the "number of times you bought online during the last three months" by groups of age. This data shows us how the oldest individuals are those who have bought most, between 3 and 5 times... and the third group which has bought between 1 or 2 times, not being far in percentage terms from the rest of age groups regarding the highest level of purchases.

Personas que han comprado por Internet en los últimos 3 meses por
características demográficas y número de veces que han comprado por Internet en ese
periodo. Año 2015

■ 1 ó 2 veces ■ De 3 a 5 veces ■ De 6 a 10 veces ■ Más de 10 veces
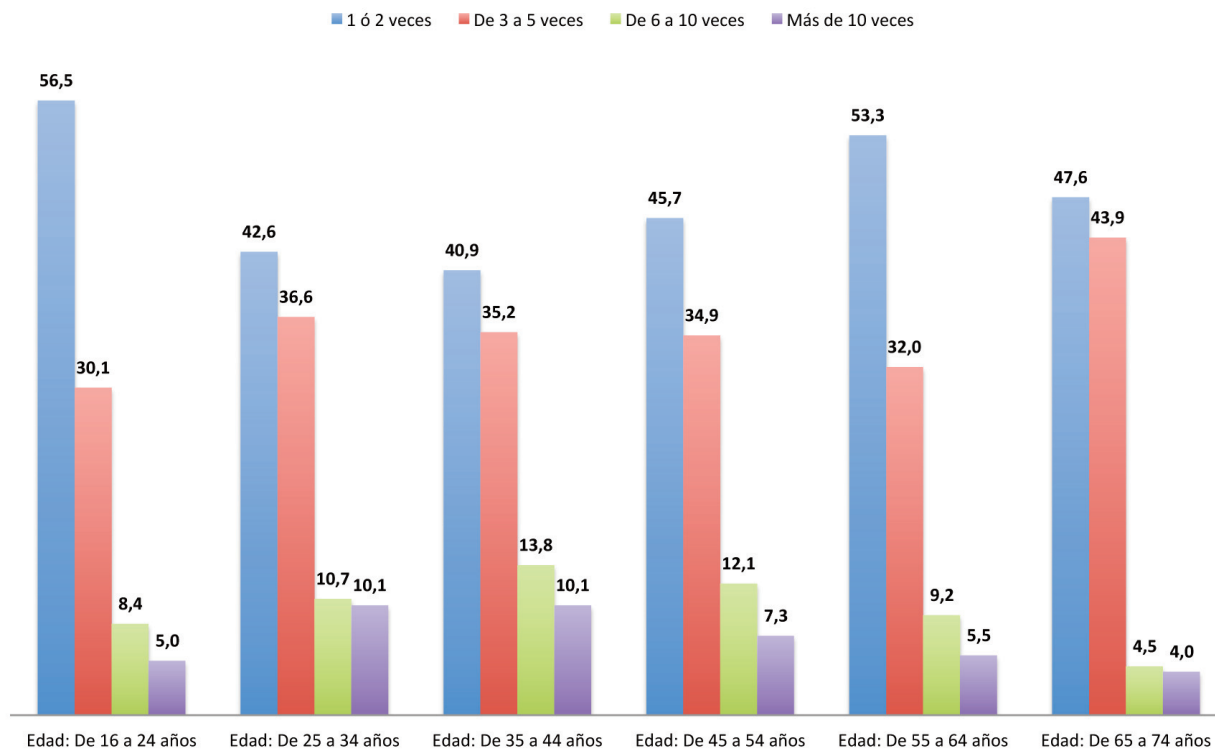
Graph 3.37. People who have shopped online in the last 12 months by demographic characteristics and the number of times they have shopped online in that period of time. 2015.

Also in the field of e-commerce, the analysis of the "Types of problems when buying" is interesting, where the percentages of the 65 to 74 age group are especially a minority, although the differences with other age groups are not excessive, in many cases failing to overcome a percentage point, and where the difference is higher in "Delayed delivery", which is 3.6 percentage points, and in "Products or services delivered with defects or different from the ones ordered", with a difference with the majority group (4.9% in ages between 25 and 34 of 7.7 points). The percentages of people who have had any problem when buying online during the last 12 months are above 8% in all age groups except in the oldest people group, which is 3.5%.

Personas que han comprado por Internet en los últimos 12 meses por características demográficas y tipos de problemas presentados al comprar. Año 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años
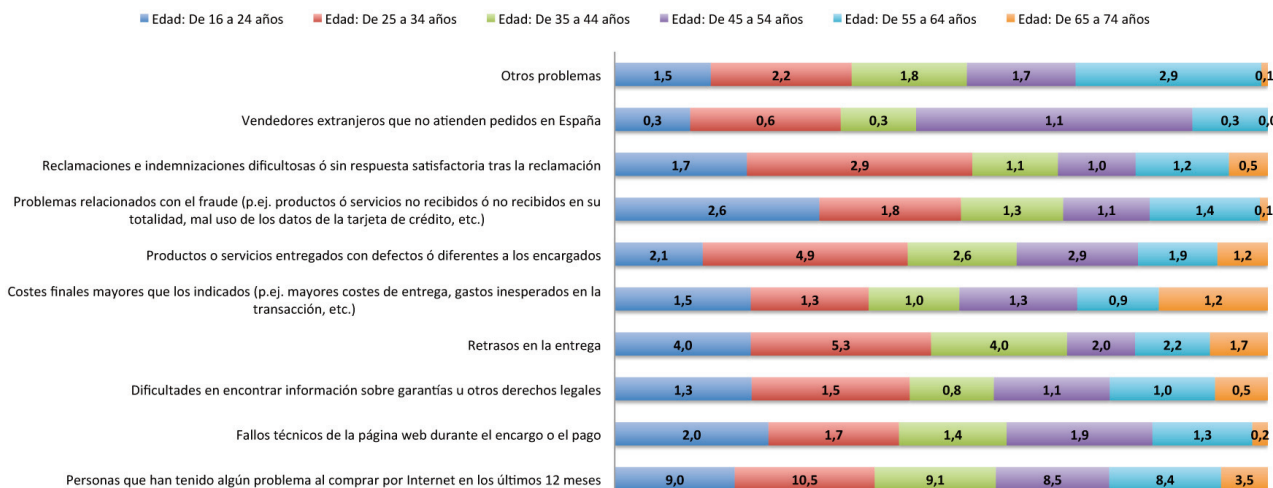
Graph 3.38. People who have shopped online in the last 12 months by demographic characteristics and types of problems arising when buying. 2015.

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If we consider "the value of articles bought online" amongst all the users we can confirm that the 65 to 74 age group is the majority in purchases amounting to between 100 and 500 euros, with 4.6%, far from the 27.1% of people aged 16 to 24 who do so. If we consider the purchases worth over 1000 euros, people aged 65 to 74 (1.9%) versus 8.7% of people aged 55 to 64, or 6.1% of people aged between 35 and 44 and 45 to 54. In purchases of less than 50 euros, the individuals aged between 15 and 24 are the majority with 34.1%, while in the rest of age groups, the percentages are between 18.2% (ages between 25 and 34) and 12.8% (ages between 35 and 44), being 14.3% the percentage of people aged between 65 and 74 who buy at a value below 50 euros.

Personas que han comprado por Internet en los últimos 3 meses por características demográficas y valor de las compras realizadas en ese periodo. Año 2015

■ Menos de 50 euros ■ De 50 a menos de 100 euros ■ De 100 a menos de 500 euros ■ De 500 a menos de 1.000 euros ■ 1.000 o más euros
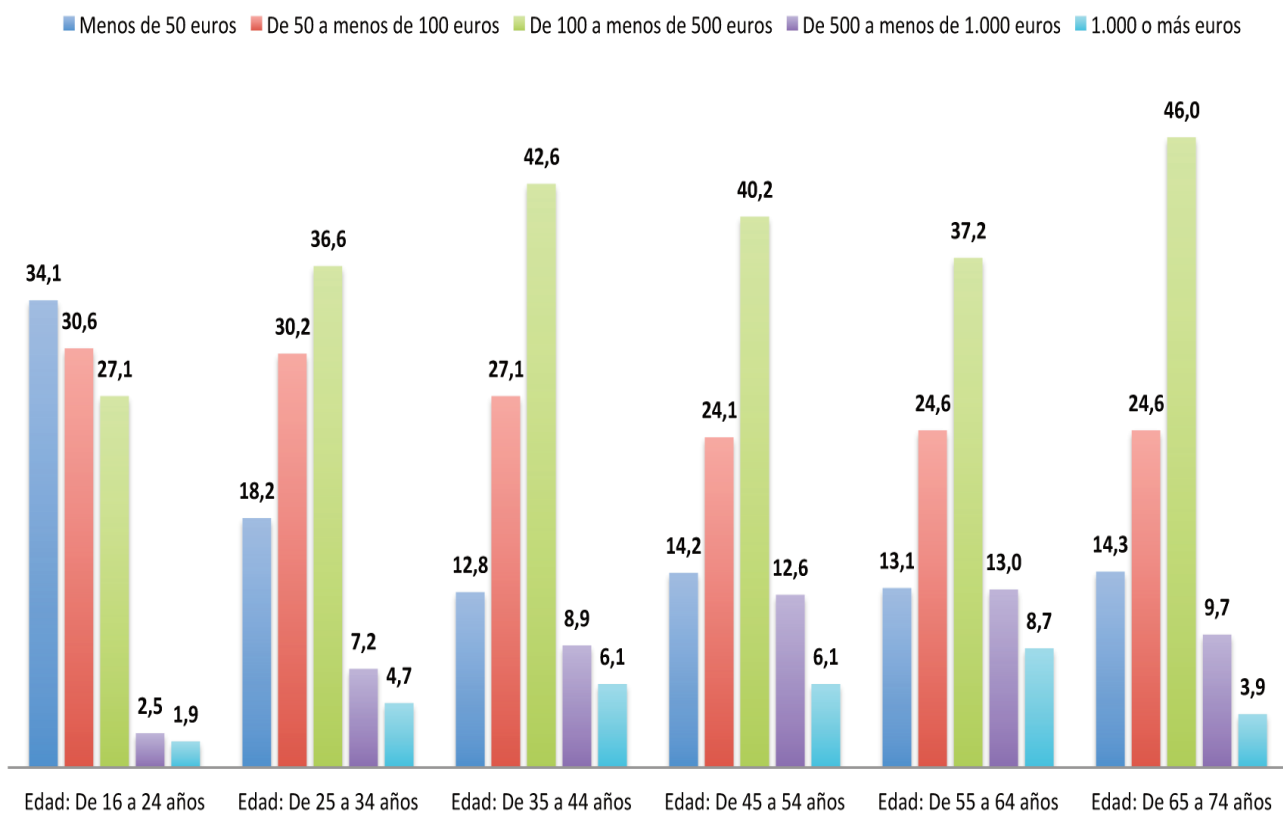
Graph 3.39. People who have shopped online in the last three months by demographic characteristics and the value of purchases made in that period of time. 2015.

What can also give us a picture about the generational differences in the use of Information Society services are the reasons mentioned by the Internet users who have not bought online during the last 12 months. The reason, which reaches the highest percentage, is "preferring to buy in a shop in person", with around 80% in all age groups (except the youngest with 72.8%), "The lack of skills or knowledge" is the reason cited by 45.8% of people aged between 65 and 74, with this reason descending as age decreases. A reason where the percentages by age groups are similar is "Concern for privacy and security of payment", with differences that do not pass 13 points, being curious that the oldest age population group is which less alleges this cause (36.8%). In the rest of the alleged motives for not buying online, the percentages are always a minority amongst people aged 65 to 74.

Usuarios de Internet que en los últimos 12 meses no han comprado por Internet por características demográficas y motivos declarados. Año 2015

■ Edad: De 16 a 24 años   ■ Edad: De 25 a 34 años   ■ Edad: De 35 a 44 años   ■ Edad: De 45 a 54 años   ■ Edad: De 55 a 64 años   ■ Edad: De 65 a 74 años

	Porque prefiere comprar personalmente en una tienda (para poder ver los productos, por fidelidad a la tienda, por la fuerza de la costumbre)	Por falta de habilidades ó conocimientos	Porque la entrega de productos encargados por Internet es problemática (p.ej., tiempo de entrega demasiado largo, distribución complicada, etc)	Porque le preocupa la privacidad o la seguridad en el pago (p. ej. dar datos personales o de la tarjeta de crédito a través de Internet)	Por falta de confianza en la recepción ó devolución de los productos, en las reclamaciones e indemnizaciones	Porque no dispone de una tarjeta que le permita pagar por Internet	Porque los vendedores extranjeros no atienden pedidos en España	Por otras razones
De 65 a 74 años	84,6	45,8	12,0	36,8	26,8	5,3	1,0	16,2
De 55 a 64 años	80,3	40,6	10,4	42,7	30,6	8,2	2,0	17,6
De 45 a 54 años	79,8	41,1	16,1	49,0	36,3	13,5	2,4	20,8
De 35 a 44 años	79,6	33,1	13,8	45,6	34,6	14,4	2,0	22,3
De 25 a 34 años	83,9	20,8	20,4	44,4	38,2	14,2	3,4	20,8
De 16 a 24 años	72,8	16,3	21,4	43,7	43,3	35,8	5,8	26,4

Graph 3.40. Internet users who have not shopped online in the last 12 months by demographic characteristics and declared motives. 2015.

Going on in the e-commerce field, we can observe the percentage of each age group by product type bought. Thereby, we can see how people aged between 65 and 74 are a majority buying "books, magazines and newspapers, including books" with 27.7% and "Food products and other perishables" with 16.3%, although in this case very closely followed by the rest of age groups with percentages above 15% (except the 16 to 24 age group, with 5.6%, we understand that because the majority are not yet emancipated). The oldest age group, together with the next age group, majoritarily "Buy other travel services (public transport tickets, car rental, etc.)" 52.8%. They (the oldest age group) are also near to the rest of generational groups in buying "Electronic equipment", since the differences amongst all age groups do not exceed in any case 5 percentage points. Meanwhile, the product least acquired by people aged 54 to 74, with respect to the rest of population groups, is "Sports material and sports clothes", as only 16.4% do it, versus 31.1% of the previous population group (55 to 64) or versus 57.9% of young people aged between 16 and 24.

Uso de comercio electrónico con fines privados o para el hogar en los últimos 12 meses por características demográficas y tipo de producto. Año 2015

■ Edad: De 16 a 24 años ■ Edad: De 25 a 34 años ■ Edad: De 35 a 44 años ■ Edad: De 45 a 54 años ■ Edad: De 55 a 64 años ■ Edad: De 65 a 74 años
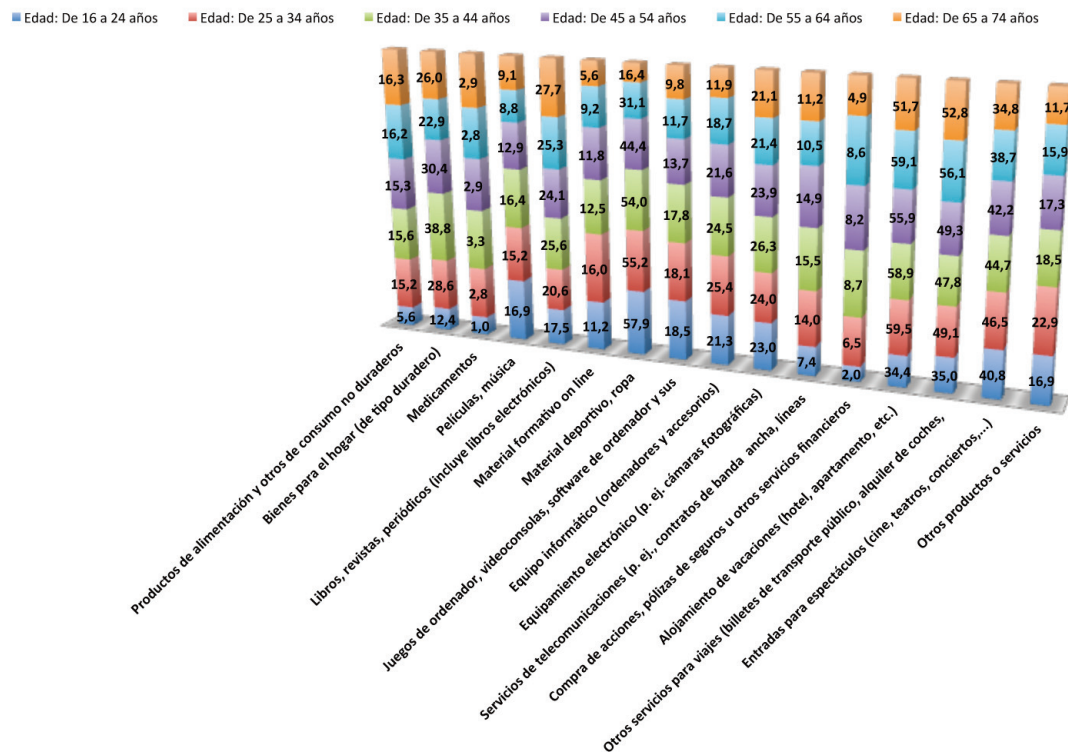
Graph 3.41. E-commerce for private or home use in the last 12 months by demographic characteristics or type of product. 2015.

The "Moment of the last purchase online" can be another criterion that shows the e-inclusion of the diverse Spanish generations. In this sense, if we analyse the percentage of people who have bought online during the last month, the oldest people are in a comparable situation to the rest of people, with differences of no more than 9 percentage points (45.6% in ages between 35 and 44 and 37.3% in this age group). At the other end of the assiduity in buying, those who bought online a year ago, we find the biggest percentage in the oldest age group at 16.8%, but not far from other age groups.

Uso de comercio electrónico por características demográficas y momento último de compra. Año 2015

◆ En el último mes ■ Hace más de 1 mes y menos de 3 meses ▲ Hace más de 3 meses y menos de 1 año ✖ Hace más de 1 año

	Edad: De 16 a 24 años	Edad: De 25 a 34 años	Edad: De 35 a 44 años	Edad: De 45 a 54 años	Edad: De 55 a 64 años	Edad: De 65 a 74 años
En el último mes	37,9	45,0	45,6	44,0	34,5	37,3
Hace más de 1 mes y menos de 3 meses	29,7	22,8	21,7	24,2	27,7	20,9
Hace más de 3 meses y menos de 1 año	23,0	20,4	20,9	21,2	22,6	25,1
Hace más de 1 año	9,4	11,8	11,8	10,6	15,2	16,8

Uso de comercio electrónico por características demográficas y momento último de compra. Año 2015

■ En el último mes   ■ Hace más de 1 mes y menos de 3 meses   ■ Hace más de 3 meses y menos de 1 año   ■ Hace más de 1 año

	En el último mes	Hace más de 1 mes y menos de 3 meses	Hace más de 3 meses y menos de 1 año	Hace más de 1 año
Edad: De 16 a 24 años	37,9	29,7	23,0	9,4
Edad: De 25 a 34 años	45,0	22,8	20,4	11,8
Edad: De 35 a 44 años	45,6	21,7	20,9	11,8
Edad: De 45 a 54 años	44,0	24,2	21,2	10,6
Edad: De 55 a 64 años	34,5	27,7	22,6	15,2
Edad: De 65 a 74 años	37,3	20,9	25,1	16,8

Graph 3.42. E-commerce use by demographic characteristics and the time of the last purchase. 2015.

6. SURVEY RESULTS ON THE USE OF ICT AND VALUATION OF THE ICT FORMATIVE COURSES

In the framework of the research project "Digital Divide and Elderly People: media literacy and e-inclusion", funded by the Secretary of State for Research, Development and Innovation of the Ministry of Economy and Competitiveness under the national plan of R+D+I, the development of quantitative research on ICT use was included, as well as the valuation of ICT training courses done by older people.

A structured survey questionnaire based on debate groups performed with older people who have done ICT training courses was designed and carried out on 985 people, of which 632 were debugged. The sample was selected amongst people who had done or were doing an ICT training course in senior citizen centres in its broadest sense. The interviews were conducted in social-community centres of Galicia, in the Universitas Semioribus CEU of Madrid, in the Arapiles Social Centre, Social Work Foundation La Caixa Bank and the Senior citizens' Association OFECUM of Granada. The surveys were conducted during the months of November and December of 2015, with the data processing being carried out during the months of January and February 2016. After data processing, we obtain a margin of error of the sample of +/-3.90% for a confidence level of 95.5%, being P=1=0.5.

Technical research	Self-administered interviews on paper (PAPI) with structured questionnaire.
Universe	People 40 and older who have made ICT training
Ambit	Socio-community ICT centers where courses are taught
Theorical sample	632 interviews debugged. 985 recorded.
Sampling error	+/- 3.90% for a confidence level of 95.5% and being p = 1 = 0.5
Fieldwork date	November– December 2015

Graph 4.1.

Within the framework of the research project: "Digital divide and elderly people: In the respondents' survey profile women predominate (60%) versus men (40%), following the predominant demographic profile in the studied ages. These ages are framed in a margin between 41 and 91 years old, the majority group being the people aged between 55 and 69. The average survey participants' age is 67 years old.

Sex

Age Groups

40-54 years	55-69 years	70 and more
5%	58%	37%

40% **60**%

67 años
(averege)
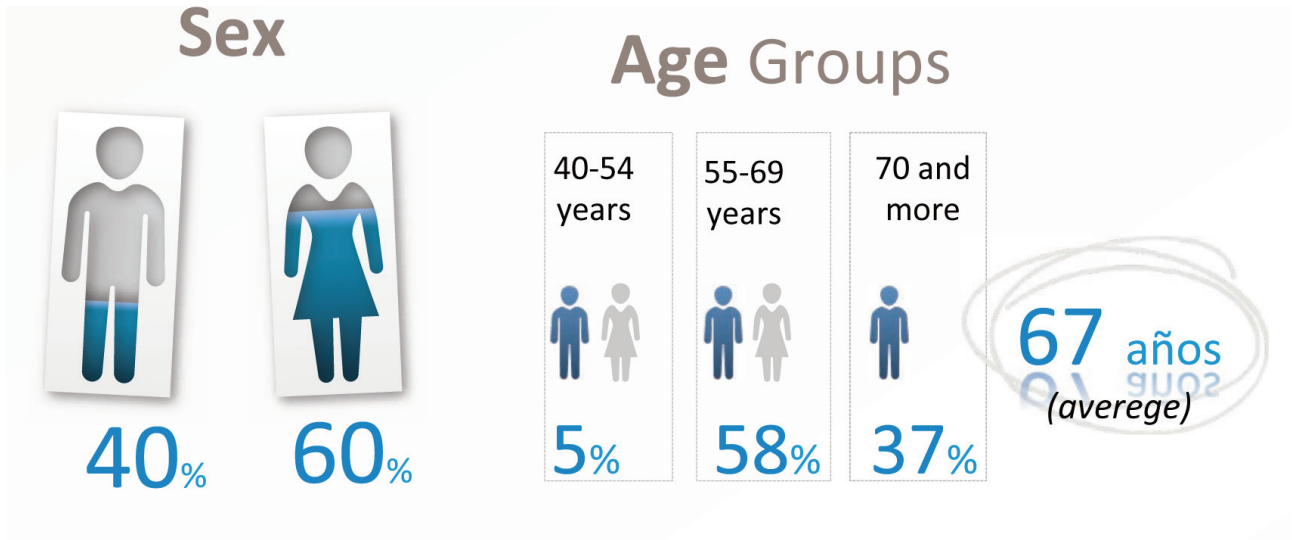
Graph 4.2.

Of all the respondents, 71,5% are retired people or pensioners, and it is noteworthy that people who are working at the moment, are unemployed or who are engaged in housework coincide in percentages of around 7%.

Current Employment Situation

7,4%
7,4%
6,8%
0%
6,6%
71,5%

- Currently working
- Retired/Pensioner/Disabled
- Unemployed: you have previously worked
- Unemployed: you are looking for your first job
- Not in labor force
- DK/NA
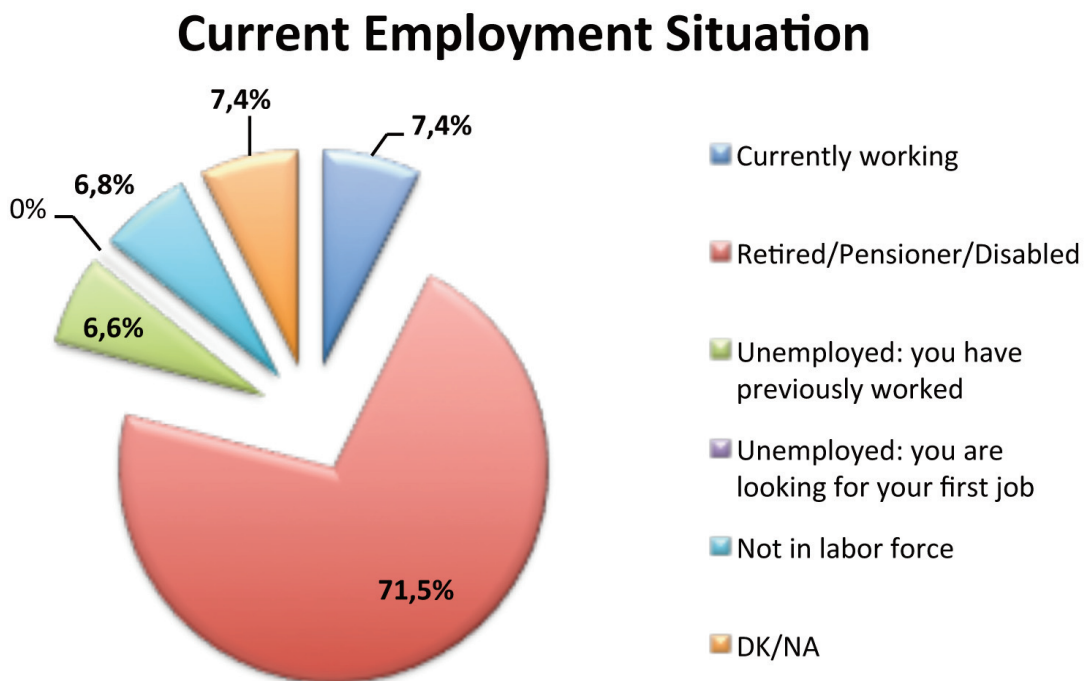
Graph 4.3.

If we focus in the time period from retirement, we find that 23.9% retired between 2 and 5 years ago, and 31% more than 6 years ago. The percentage of those who retired less than 2 years ago is 13.6%.

Time from your retirement

Category	Value
DK/NA	17,9 %
I have never worked	3 %
I am not retired yet	10,6%
More than 11 years	13,8 %
Between 6 and 10 years	17,2 %
Between 2 and 5 years	23,9 %
Less than 2 years	13,6 %
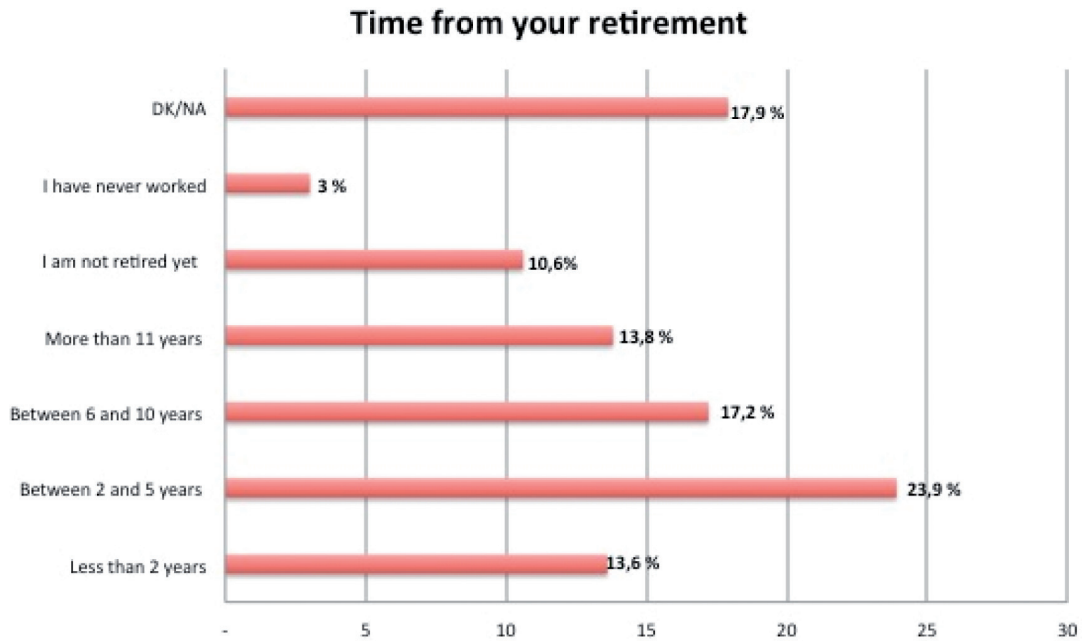
Graph 4.4.

Regarding the level of studies, it is significant that the majority group is the one that has "completed primary education", followed by those who have "lower secondary education". People who have university education are 24.1% of the total.

Highest level of completed studies

- Incomplete primary education: Less than 5 years
- Complete primary education: up to 10-12 years. (Previous to the beginning of Lower secondary education. Primary education
- Lower secondary education: from 12 up to 16 years old. Vocational studies
- Upper secondary education: from 16 up to 18 years old. Post-secondary non-tertiary education
- Short-cycle tertiary education
- Bachelor or equivalent/ Master degree or equivalent
- DK/NA

Values shown: 6,8%%, 8,7% %, 11,9 %, 12,2 %, 30,4%, 10,8 %, 19,3%

Graph 4.5.

Another piece of data that can help to complete the respondents' survey profile is the declared level of household income. Eloquently, one out of every three-survey respondents "Is not sure or prefers not to say it". From the declared income, 33.5% are in a margin of household income between 1000€ and 2000€, although it is significant that 23% of respondents' households have incomes below 1000€[9].

9 According to the Ais Group report (http:// www.ais-int.com/los-hogares-españoles-ingresaron-en-2014-una-media-de-1-880e-mensuales.html) the average household income in 2014 reached 1880€ per month.

Level of household income

600 € or less	7,0
Between 601 and 1.000 €	16,0
Between 1.001 and 1.600 €	18,2
Between 1.601 and 2.200 €	15,3
Between 2.201and 2.800 €	6,8
Between 2.801 and 3.600 €	4,4
Between 3.601 and 5.000 €	1,7
5.001 € or more	0,5
I am not sure or I prefer not	30,1
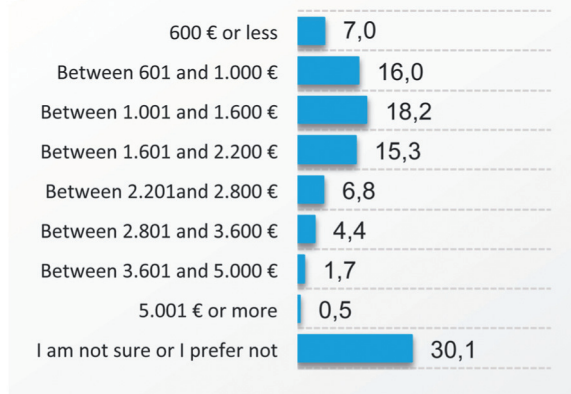
Graph 4.6.

In terms of the average amount of time that older respondents dedicate to connect to the Internet, it amounts 2.2 hours a day and the main reasons for connection are to send/receive emails (64%), followed by online newspaper reading (61%), looking for useful information (59%) or leisure (54%). These four tasks coincide with the mentioned tasks average, which is 3.6%. The low percentages of conducting online paperwork is noteworthy (28%) and online buying (10%), which coincide with data of the previous chapter, not the online banking use with 26%, which according to the previous chapter data is majoritarily used by older people (percentages over 40%).

What do you connect habitually to the Internet for?

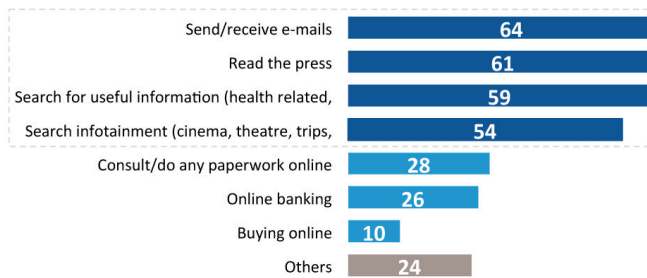|	
Send/receive e-mails	64
Read the press	61
Search for useful information (health related,	59
Search infotainment (cinema, theatre, trips,	54
Consult/do any paperwork online	28
Online banking	26
Buying online	10
Others	24

Mentions Average

3,6

How many hours do you connect to the Internet per day?

2,2 Averege

Graph 4.7.

The places where older respondents declare to connect to the Internet are mainly at home (80%), followed by public places (30%) where probably libraries and senior citizens´centres are included. It is noteworthy that to do so, they use equally mobile phones, desktop or laptop computers with percentages of around 50%. The fact that tablets are used less than expected draws our attention (16%) and it surprises that smart televisions (4%) are used more than e-books (3%). The influence of grandchildren can be seen in the 1% that connects through video game consoles.

Where do you connect habitually to the internet from?

At honme	80
From a public place	30
From the street/public transport	8
At work	4
From a University/School	3
Buying	2
Others	15
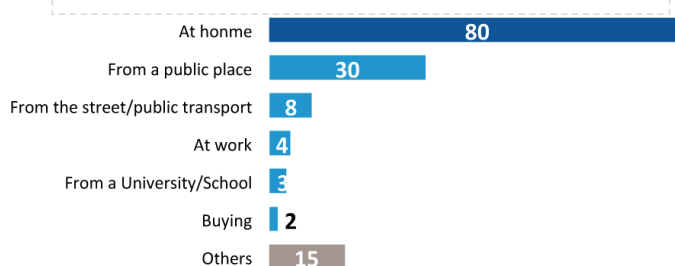
Which device do you connect from?

Mobile telephone	51
Desktop computer	49
Laptop computer	49
Tablet	16
Smart TV	4
E-book	3
Video game console	1
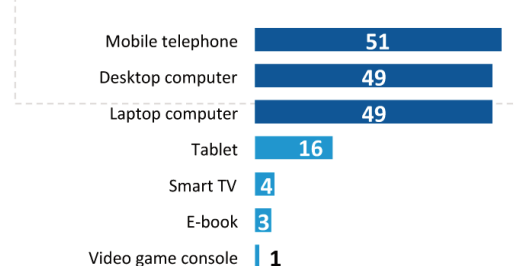
Graph 4.8.

From the next table we can conclude that those people who do not find it difficult to learn how to use ICT use all of the devices far more, except mobile telephones to receive/make calls and traditional television, which are used majoritarily by all respondents. In terms of age, the youngest respondents use more, with respect to the average, the following technological devices: smartphone, tablet, smart TV, video game console and audio/video player/music player. Nevertheless, the use of desktop and laptops computers increases with the age of respondents.

Devices use frequency- Profile

| | Total | Gender | | Age | | | Degree of difficulty learning ICT | | |
		Men	Women	40-54	55-69	70 and more	Very difficult	Medium difficulty	No difficulty
% Use	632	251	381	30	345	220	38	334	224
Landline Telephone	87,1	84,6	88,8	80,0	87,6	88,4	83,8	86,3	90,5
Mobile telephone to make/receive calls	97,8	97,2	98,2	100,0	97,4	97,7	100,0	97,5	98,2
Mobile phone connected to the internet (Smartphone)	62,5	61,5	63,2	73,1	65,5	56,6	47,0	59,4	72,8
Desktop computer	69,0	73,1	66,0	53,6	68,5	70,5	59,9	66,8	72,6
Laptop computer	66,9	63,7	68,9	55,6	68,9	65,3	65,7	61,6	75,5
Tablet	30,5	32,6	29,1	37,0	30,4	29,3	17,6	28,2	34,1
E-book	16,9	13,0	19,5	15,4	17,1	15,5	9,7	13,0	24,5
Smart TV	17,2	19,6	15,3	21,4	17,0	16,8	9,4	16,4	20,1
Tradicional television	91,8	91,5	92,1	100,0	90,6	92,3	91,9	93,0	91,7
Video game console	10,1	8,2	11,6	19,2	8,9	8,2	3,2	9,5	11,3
Video and audio player/music player	49,6	52,8	47,3	59,2	50,5	46,5	30,3	50,8	52,6
Others	19,2	25,6	14,2	29,3	19,4	16,0	12,4	18,8	20,5

Graph 4.9.

The most used applications are Internet browser (86%), email (81%) and WhatsApp (74%). It is significant that spreadsheets, databases and design and photograph ic processing applications are used by 25%. Meanwhile, the most frequently used application (daily use) is WhatsApp (66%), followed by Internet browser (55%) and email (48%). At the other end (not used), we find spreadsheets (77%), databases (75%) and design and photographic processing applications (70%).

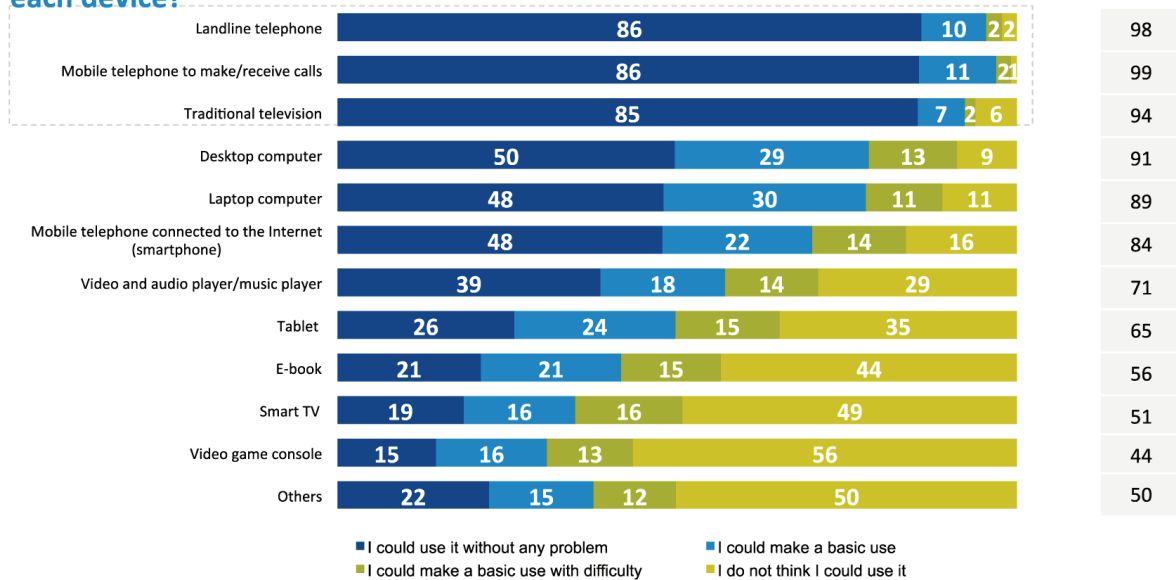### How often do you use Information and communications technology?
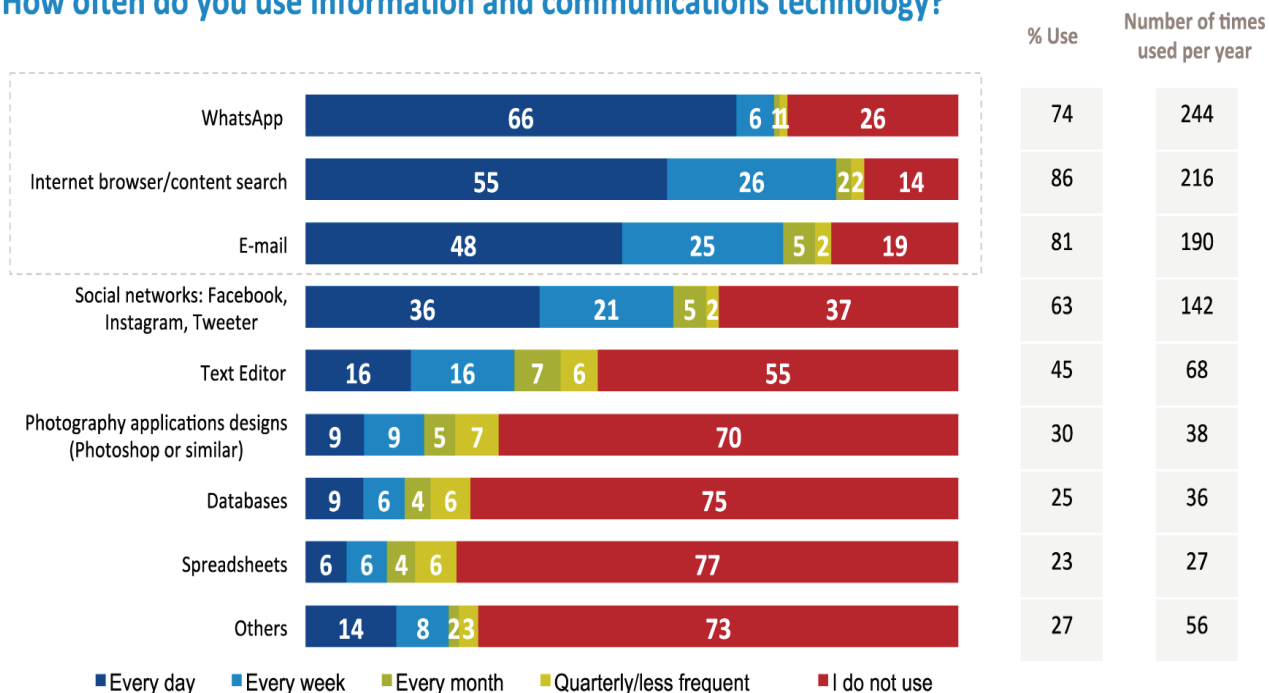
Graph 4.10.

Nearly all respondents could make a basic use of mobile telephones to call (99%), landline telephones (98%) and traditional television (94%). The devices considered most difficult to use are the video game console (44%) and the smart TV (51%). EBooks standout as 44% of respondents consider they would not be able to use them in a basic way, versus 16% who answer that they could not make a basic use of smartphones or 35% with a tablet.

If necessary, to which extent, do you think you would be able to use each device?

% People could make at least one basic use

Device	I could use it without any problem	I could make a basic use	I could make a basic use with difficulty	I do not think I could use it	%
Landline telephone	86	10	2	2	98
Mobile telephone to make/receive calls	86	11	2	1	99
Traditional television	85	7	2	6	94
Desktop computer	50	29	13	9	91
Laptop computer	48	30	11	11	89
Mobile telephone connected to the Internet (smartphone)	48	22	14	16	84
Video and audio player/music player	39	18	14	29	71
Tablet	26	24	15	35	65
E-book	21	21	15	44	56
Smart TV	19	16	16	49	51
Video game console	15	16	13	56	44
Others	22	15	12	50	50

- I could use it without any problem
- I could make a basic use
- I could make a basic use with difficulty
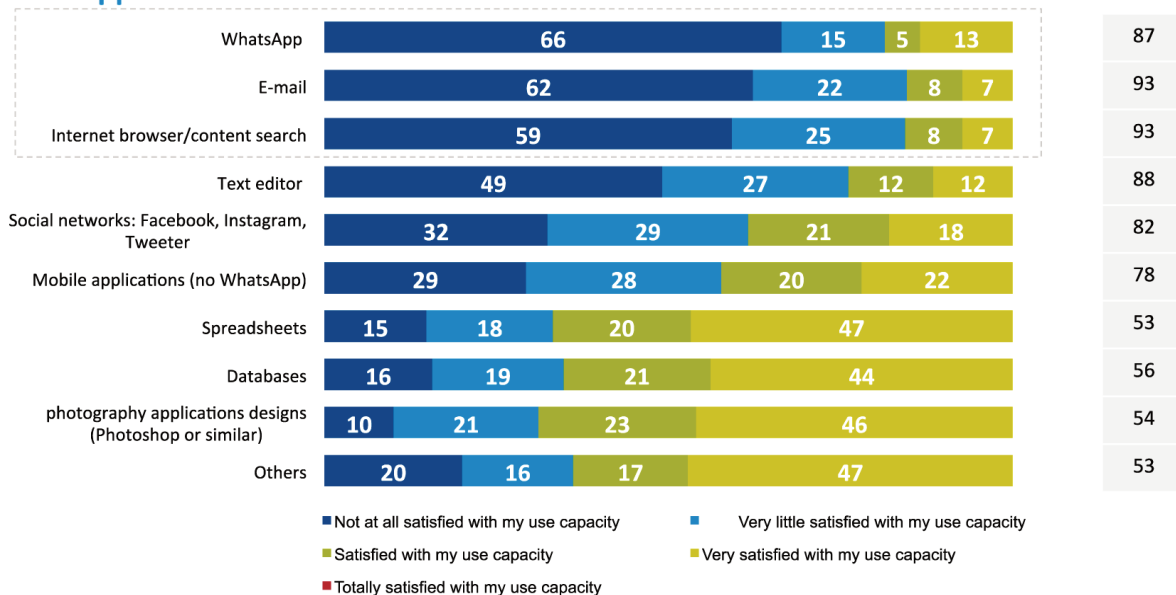- I do not think I could use it

Graph 4.11.

Almost all older respondents could make a basic use of email (93%) and Internet browsers (93%). WhatsApp is the easiest application to use (66% could use it without problems), versus spreadsheets, which could not be used by 47%, which coincides with the lower percentage of those who could make a basic use of them (53%).

If necessary, to which extent, do you think you would be able to use each application?

% People could make at least one basic use

Application	Not at all satisfied	Very little satisfied	Satisfied	Very satisfied	%
WhatsApp	66	15	5	13	87
E-mail	62	22	8	7	93
Internet browser/content search	59	25	8	7	93
Text editor	49	27	12	12	88
Social networks: Facebook, Instagram, Tweeter	32	29	21	18	82
Mobile applications (no WhatsApp)	29	28	20	22	78
Spreadsheets	15	18	20	47	53
Databases	16	19	21	44	56
photography applications designs (Photoshop or similar)	10	21	23	46	54
Others	20	16	17	47	53

- Not at all satisfied with my use capacity
- Very little satisfied with my use capacity
- Satisfied with my use capacity
- Very satisfied with my use capacity
- Totally satisfied with my use capacity

Graph 4.12.

In the following graph, we combine the number of times that a device or application is used with the percentage of respondents who could make a trouble-free use of those devices or applications, in order to assess the existence of a correlation between ease of use and declared habitual use. We can infer that this is so, since the most used devices (mobile phone to re-ceive calls, traditional TV, landline phone or WhatsApp) are also the easiest to use. At the opposite end we find video game consoles, design and photograph ic processing applications, databases or smart TVs. The least used application in relation with its ease of use is spreadsheets.
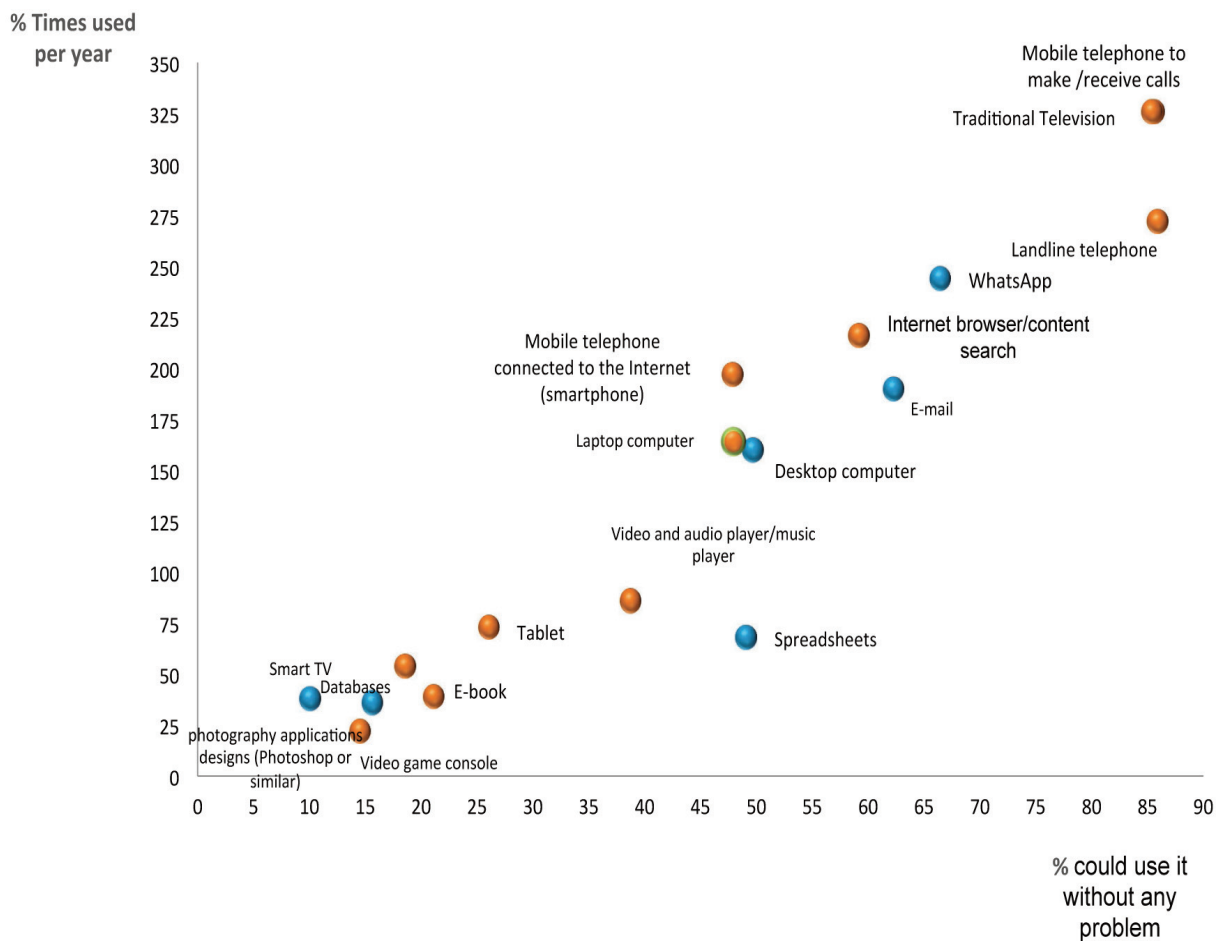
Graph 4.13.

If we do the inverse correlation and see the level of use in relation with the percentages of respondents who could not make a problem-free use of devices and applications, we can verify a connection with the above Graph. Surprisingly, the spreadsheets are a specific application, which could be used without any problem, but nevertheless it is scarcely used. Video games consoles, design and photograph ic processing applications, databases, eBooks and smart TVs appear again as the devices and utilities which involve more problems to use, which correspond with their scarce use.
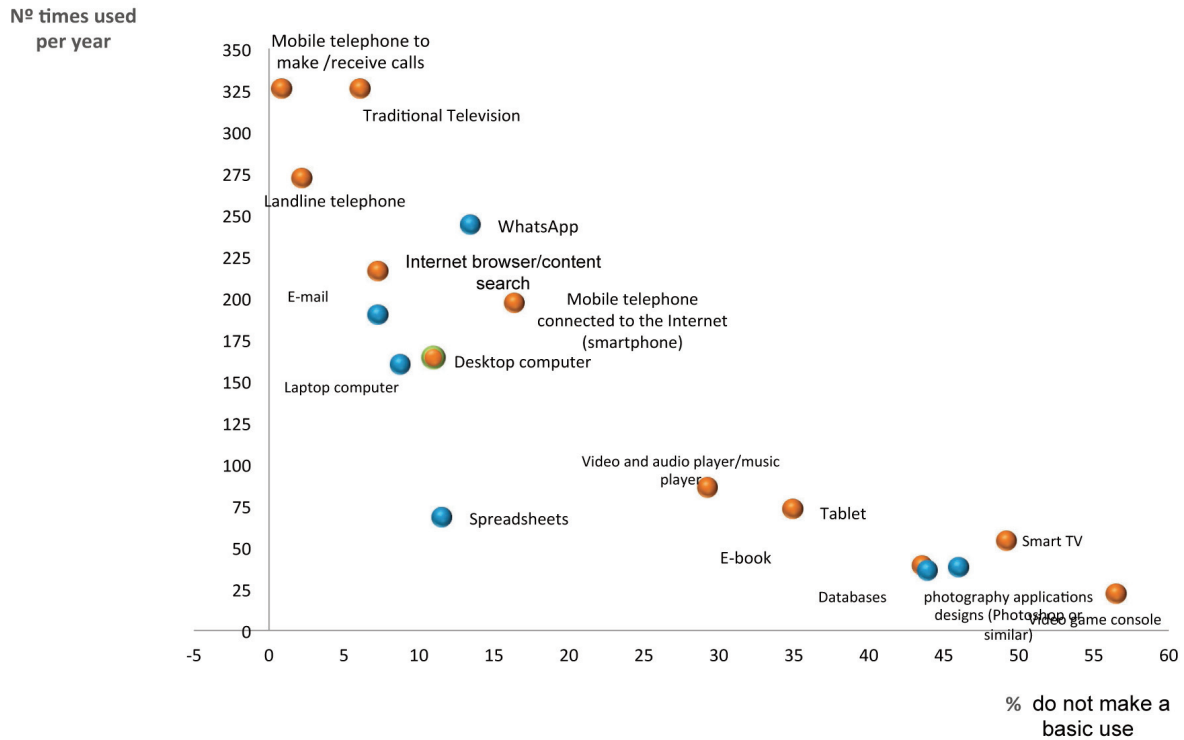
Graph 4.14.

In the assessment of the respondents' satisfaction on the handling of different devices, we find that one out of every two respondents is very or totally satisfied with their current handling of traditional TV and landline and mobile phones to make and receive calls. At the opposite end, they are little or not at a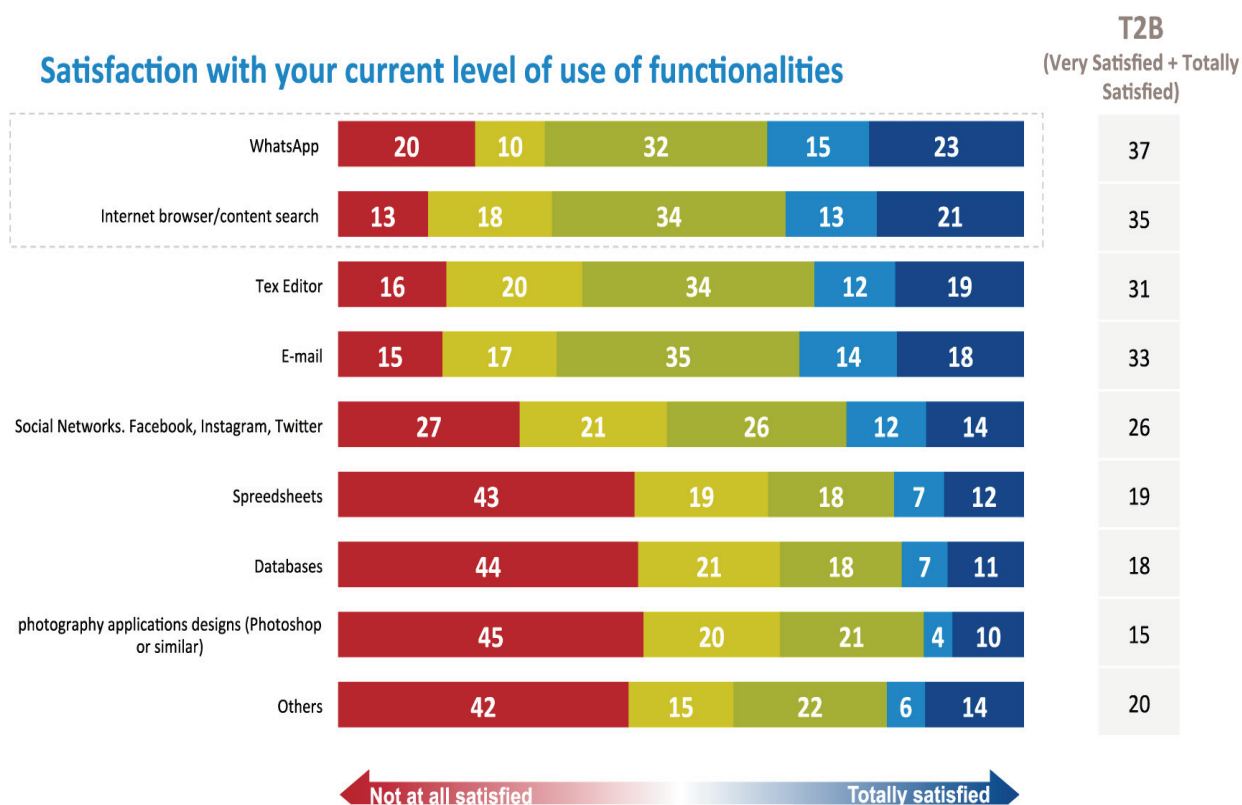ll satisfied with their handling of video games consoles (70%), smart TVs (68%) and eBooks (62%). The latter data about eBooks is significant, just like the data about laptop and desktop computers that do not have very high satisfaction percentages relating to their handling level (26% and 27%), which do not correspond with the declared use capacity regarding them in Graph 4.12.
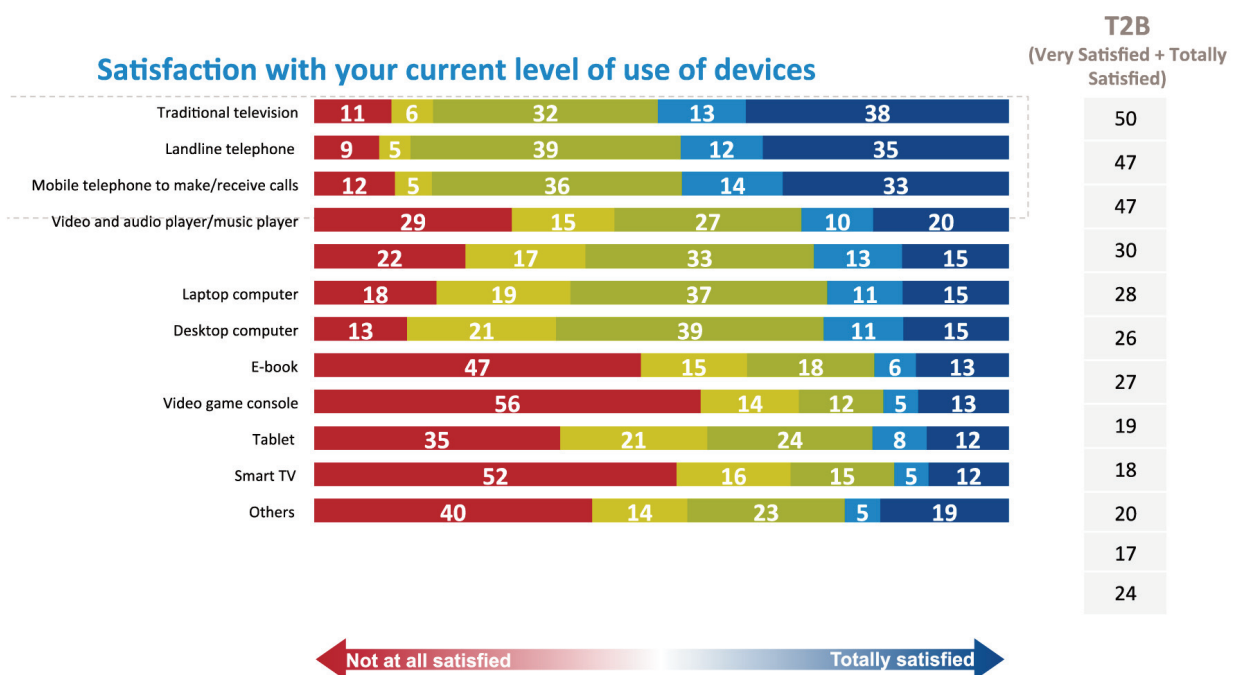
Graph 4.15.

In the assessment of functionalities, we find that the levels of satisfaction are lower to the ones shown with respect to the devices. WhatsApp and the Internet browser appear as the applications with which they are more satisfied, with 37% and 35%, but with more that 30% we also find text writing and email (31% and 33%, respectively). This data coincides with the ones shown in Graph 4.10, which established that, the Information and Communication Technologies most used by the respondents were WhatsApp, Internet browsers and email.

Satisfaction with your current level of use of functionalities

Functionality						T2B (Very Satisfied + Totally Satisfied)
WhatsApp	20	10	32	15	23	37
Internet browser/content search	13	18	34	13	21	35
Tex Editor	16	20	34	12	19	31
E-mail	15	17	35	14	18	33
Social Networks. Facebook, Instagram, Twitter	27	21	26	12	14	26
Spreedsheets	43	19	18	7	12	19
Databases	44	21	18	7	11	18
photography applications designs (Photoshop or similar)	45	20	21	4	10	15
Others	42	15	22	6	14	20

Not at all satisfied ← → Totally satisfied

Graph 4.16.

Another significant mixture of variables is the one that combines frequency of use of devices and utilities with satisfaction of use (this variable includes those who are very or totally satisfied). We can verify that this correlation is fulfilled and that the applications for design or photograph y editing, smart TV, eBook and tablet are the least used devices and at the same time the ones that give least satisfaction. The position of these last two devices in the graph draws our attention powerfully, since we thought they were the main devices used by older people, when they are not.

Nº times used
per year
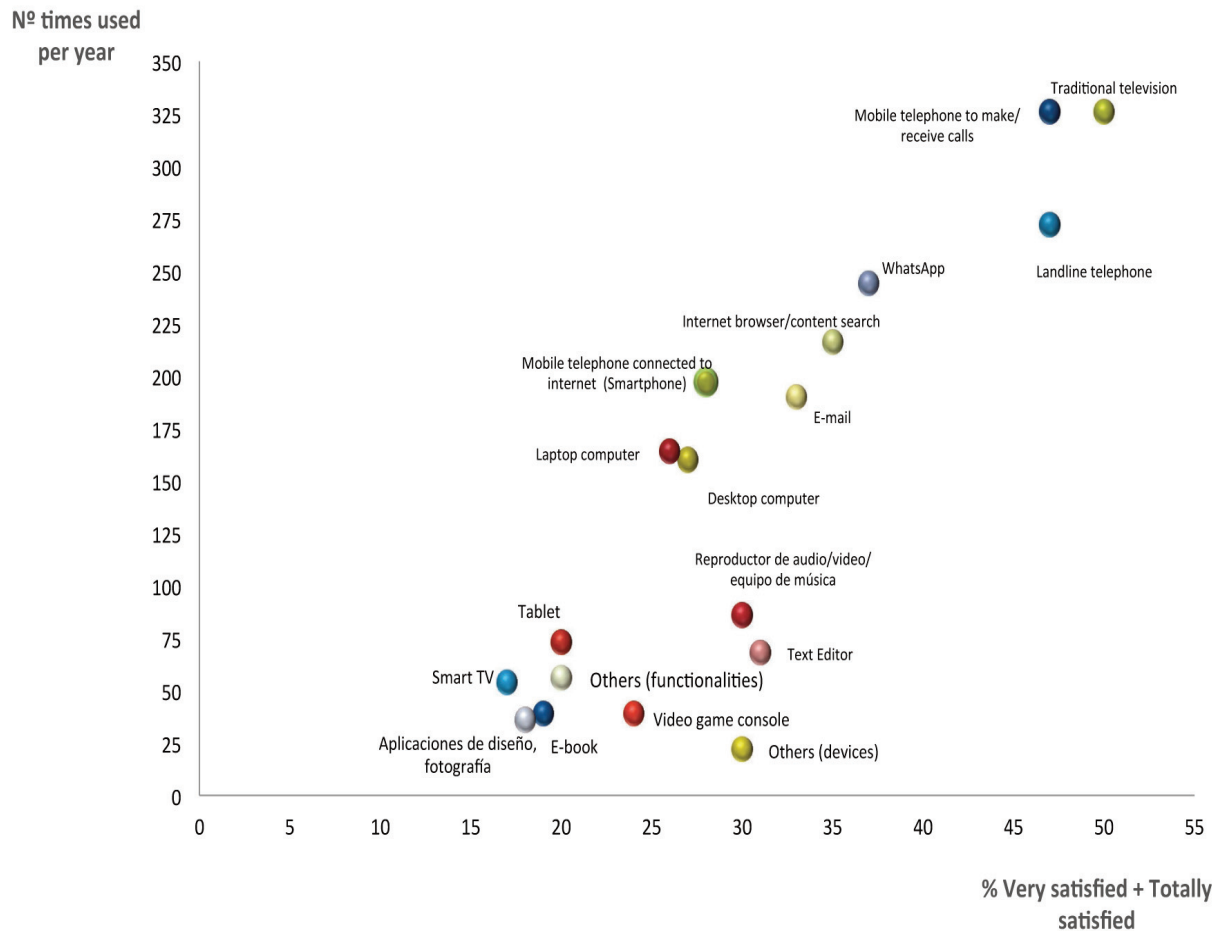
Graph 4.17.

One of the issues on which there is almost unanimity is on the importance given to Information and Communication Technology by the respondents, as 65.7% consider it totally necessary and 29.9% quite necessary, these responses constitute an overwhelming majority of 95%. Those who do not consider ICT necessary or not very necessary are 1.5% of respondents.

## Do you believe that Information and Communication Technology is necessary nowadays?

■ It is not necessary ■ Not very necessary ■ Quite necessary ■ Totally necessary ■ DK/NA

2,8% 0,9% 0,6%

29,9%

65,7%
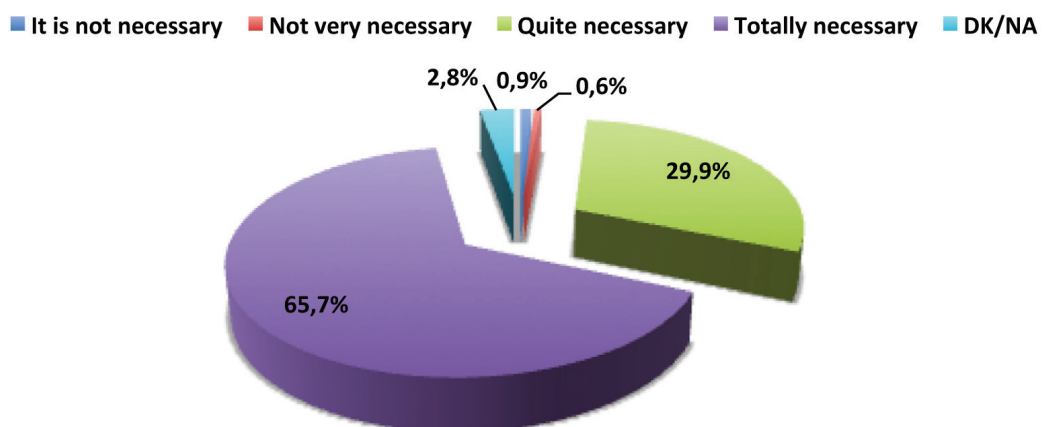
Graph 4.18.

The character of the survey chose sample, since it was conducted amongst people who had done ICT training courses conditions the next question. Eight out of ten learned how to use a computer and the Internet thanks to training courses. Nevertheless, it is significant that one out of three learned how to use a computer helped by family and friends. 18% of respondents who learned using a computer at work versus 12% who learned using the Internet in that setting, which seems to corroborate some opinions expressed in the previous debate groups, where many of them declared that they started to use computers in the last years of their working life, but for very specific functions (text processors or company programmes).

How did you learn to use a computer?
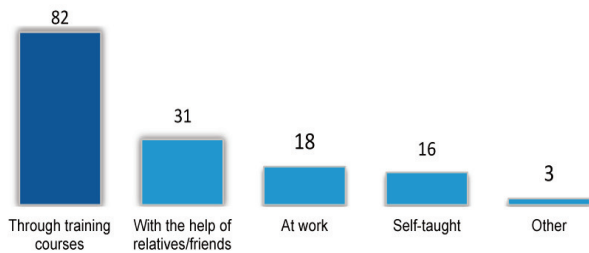
### How did you learn to use the Internet?
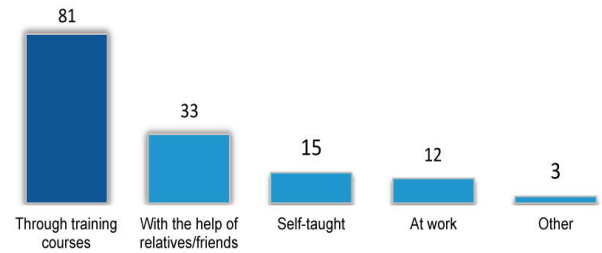
Graph 4.19.

In the debate groups, the necessity of asking for assistance habitually was also commented. If we assess the frequency that respondents assert they ask for help, we can verify that 90% ask for assistance at least once per month to solve their problems and, amongst these, 43% ask for assistance at least one per week (12% ask for assistance on a daily basis). 59% of respondents ask for help to their closest relatives when they have any computer problem, 26% to friends and significantly 26% resort to ICT companies and professionals (perhaps when they buy a device or programme for the first time).

When you have a problem with your computer, who do you usually turn to?
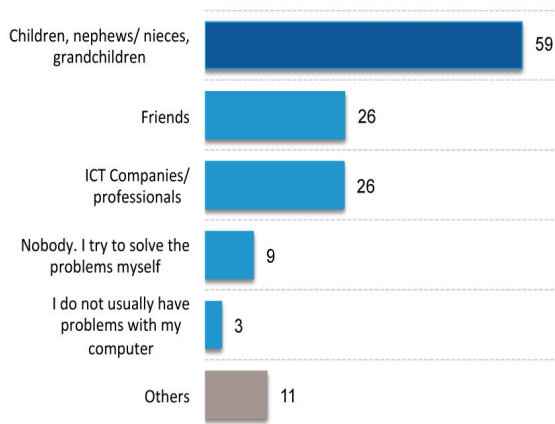
How often do you ask for help, however small it is?
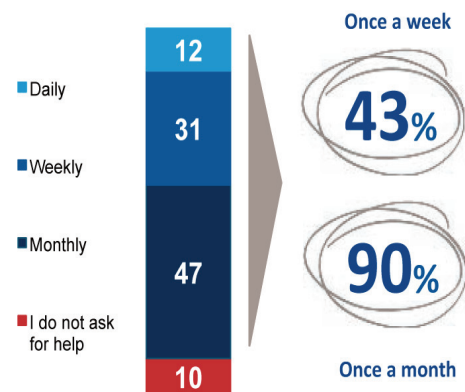
Graph 4.20.

The assessment of the easiness of ICT learning by the respondents depending on their age is also significant. In a scale from 0 to 10, where 10 was "totally easy to learn" and 0 "impossible to learn", the average position was 6.1. On the other hand, the main obstacles in ICT use are: lack of knowledge of the handling of programmes (48%), the frustration at problems they do not know how to solve (46%) and the distrust of Internet security (42%), followed by fear of damaging the device (39%) and a fear to lose documents (36%) and the lack of understanding of terminology (35%). All those obstacles are mentioned in percentages over 35%, which seems to indicate that at least they affect one out of every three respondents.

To which level do you think Information and Communication Technology is easy to learn depending on your age?

Averege
6,1

22	
62	
16	

■ From 0 to 4 ■ From 5 to 7 ■ From 8 to 10

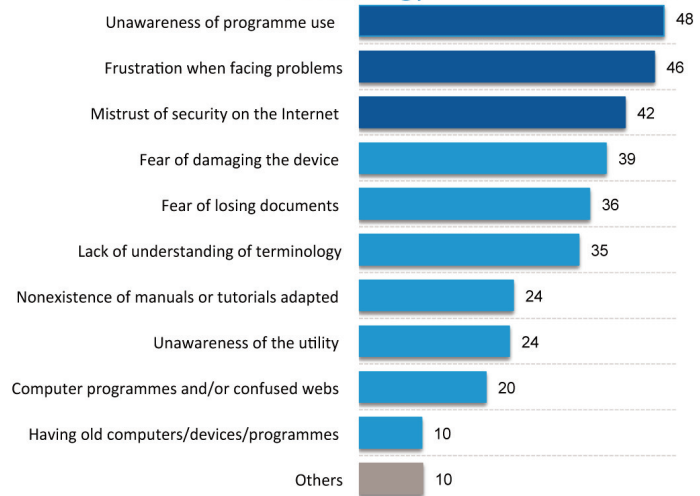## What are the main obstacles that you find when using "Information and Communication Technology?

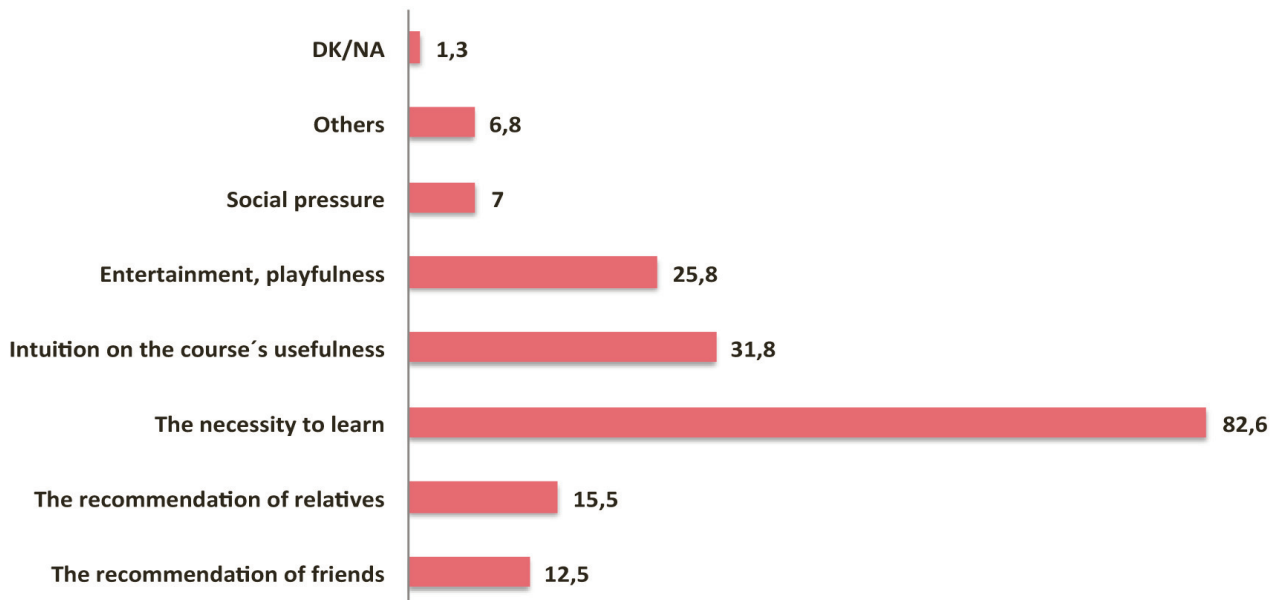|	
Unawareness of programme use	48
Frustration when facing problems	46
Mistrust of security on the Internet	42
Fear of damaging the device	39
Fear of losing documents	36
Lack of understanding of terminology	35
Nonexistence of manuals or tutorials adapted	24
Unawareness of the utility	24
Computer programmes and/or confused webs	20
Having old computers/devices/programmes	10
Others	10

Graph 4.21.

Another issue that we believe can give us older people's profile regarding the ICT courses is the reason given for doing such courses, allowing here a multiple response. The overwhelming majority of respondents refer to the necessity to learn as their main motivation (82.6%), followed by the "intuition" about their utility (31%) or because of their playful character or for entertainment (25.8%). 7% declares to do it because of social pressure, while 12.5% does it on the recommendation of friends or relatives (15.5%).

What made you do the course on Information and Communication Technology?

DK/NA	1,3
Others	6,8
Social pressure	7
Entertainment, playfulness	25,8
Intuition on the course´s usefulness	31,8
The necessity to learn	82,6
The recommendation of relatives	15,5
The recommendation of friends	12,5

Graph 4.22.

In reference to the courses taken, we can verify that the average is 2.9 courses; mainly related to basic computing (89%) and Internet use (71%). It is noteworthy that a one out of two respondent has done a course on social networks. These proportions correspond with the usual order in which these courses are held in the different socio-community centres and in universities for the elderly.
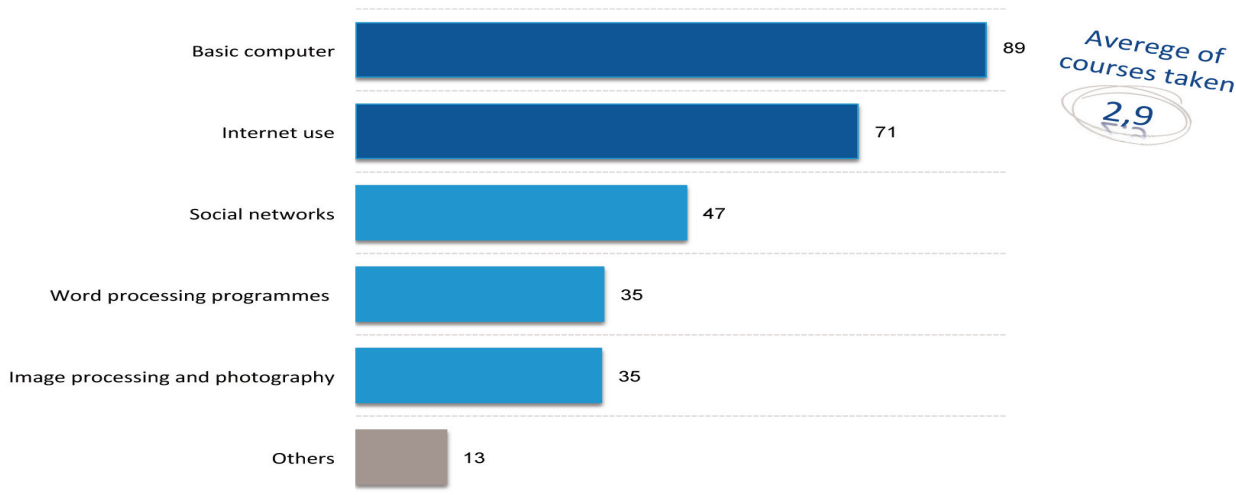
Graph 4.23.

The possible correlation between the type of course done and the use of devices and applications is shown in the following Graph. There do not appear remarkable differences in the use of devices depending on the type of course held. As a general trend, it seems that those who have done more advanced courses (text processor, image and photograph y editing) use all devices at a higher percentage, including those declared more complex by the respondents, such as tablets and smart TV. With regard to the applications, there seems to exist a correlation between the type of course and the applications used, since those that take courses on text processors use the text editor more (67.2%), those who take courses on image and photograph y editing use design and photograph y applications (51.6%) and those who do courses on social networks use them 83.4%.

| Themed courses- Devices/Functionalities Use		Total	Basic computer	Text Editor	Photography applications desings	Internet use	Social networks	Others
		632	563	221	219	449	295	81
% Devices use	Landline telephone	87,1	87,7	92,6	88,8	87,8	89,3	92,5
	Mobile telephone to make/receive calls	97,8	97,8	98,6	99,5	97,7	98,6	98,8
	Mobile telephone connected to internet (Smartphone)	62,5	63,2	70,2	68,5	65,5	68,8	60,0
	Desktop computer	68,9	69,0	72,7	67,2	71,4	72,5	74,3
	Laptop computer	66,8	66,9	71,9	74,0	69,6	71,7	66,7
	Tablet	30,6	30,1	35,3	35,9	31,1	33,9	29,4
	E-book	17,0	16,7	16,9	17,6	17,4	19,5	18,2
	Smart TV	17,2	17,1	19,0	21,2	18,9	20,9	25,0
	Traditional television	91,8	91,4	92,9	92,8	92,0	91,4	84,0
	Video game console	10,1	10,8	10,7	11,4	10,5	12,0	14,5
	Video and audio player/music player	49,5	49,7	55,4	55,5	52,1	51,2	49,3
	Others	19,3	19,6	19,6	21,3	19,9	22,0	30,9
% Functionalities use	WhatsApp	73,8	73,7	79,9	81,0	77,0	82,3	68,9
	Internet browser/ content search	85,6	86,8	92,0	92,3	89,8	93,4	91,1
	E-mail	80,5	81,5	85,8	87,0	85,0	90,5	88,3
	Text editor	44,8	44,5	67,2	59,7	51,1	57,1	48,6
	Spreedsheet	23,1	22,0	35,5	31,1	26,9	30,4	28,8
	Databases	25,2	25,4	34,5	33,5	27,9	32,9	25,8
	Photography applications designs (Photoshop or similar)	29,6	29,4	41,1	51,6	34,2	39,3	45,7
	Social Networks. Facebook, Instagram, Twitter	63,4	63,4	69,2	75,1	68,1	83,4	83,6
	Others	26,5	25,3	34,5	33,0	30,5	35,9	47,4

Graph 4.24.

The participants in this survey were asked about the easiness of learning in a scale from 0 (impossible to learn) to 10 (totally easy to learn); 32% considered that the contents were very easy to learn, though there exist a majority percentage (56%), between 5 and 7, who, in this kind of surveys, usually expresses certain degree of dissatisfaction, particularly since 12 % locate themselves in a range between 0 and 4. The average score in this question is 6.5. Re-

garding the final satisfaction with respect to the learning acquired on the course (a scale, again, from 0 to 10), 52% are very satisfied with their learning (between 8 and 10) and, in this case, the average is 7.5%. Despite the impression of learning difficulty, the respondents show satisfaction with the results of the courses.

The course contents have been/are easy to learn?

			Averege
12	56	32	6,5

■ From 0 to 4   ■ From 5 to 7   ■ From 8 to 10
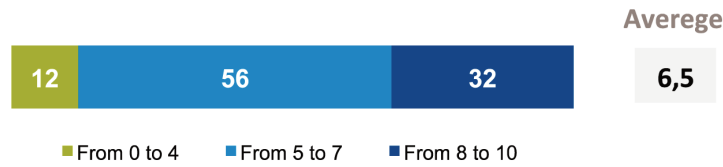
What is your level of final satisfaction with what you learned during the course?

8	40	52	7,5

■ From 0 to 4   ■ From 5 to 7   ■ From 8 to 10

Graph 4.25.

If we assess the level of course learning easiness regarding the use of devices and applications, we observe a correlation between devices and applications most difficult to use (according to what respondents manifested in previous Graph s) and the ease of learning. Thus, the contents have been easier to learn for those who know how to use e-Books, text editor, spreadsheets and design/photograph y applications, which were the devices and applications most difficult to use, as evident in Graph s 4.12 and 4.13.

Final satisfaction with what you learned during the course − Devices/ Functionalities use

		Total
		7,45
Devices Use	Landline telephone	7,18
	Mobile phone to make/receive calls	7,11
	Mobile phone connected to internet (Smartphone)	7,49
	Desktop computer	7,32
	Laptop computer	7,25
	Tablet	7,42
	E-book	7,53
	Smart TV	7,52
	Traditional television	7,14
	Video game console	7,41
	audio/video player/music player	7,24
	Others	6,94
Functionalities use	WhatsApp	7,31
	Internet browser, content search	7,28
	E-mail	7,22
	Text editor	7,58
	Spreedsheets	7,55
	Databases	7,46
	photography applications designs (Photoshop or similar)	7,56
	Social networks. Facebook, Instagram, Twitter	7,65
	Others	7,34

Graph 4.26.

Nevertheless, the satisfaction with the learning acquired is similar regardless of the devices/applications used.

Final satisfaction with what you learned during the course – Devices/ Functionalities use
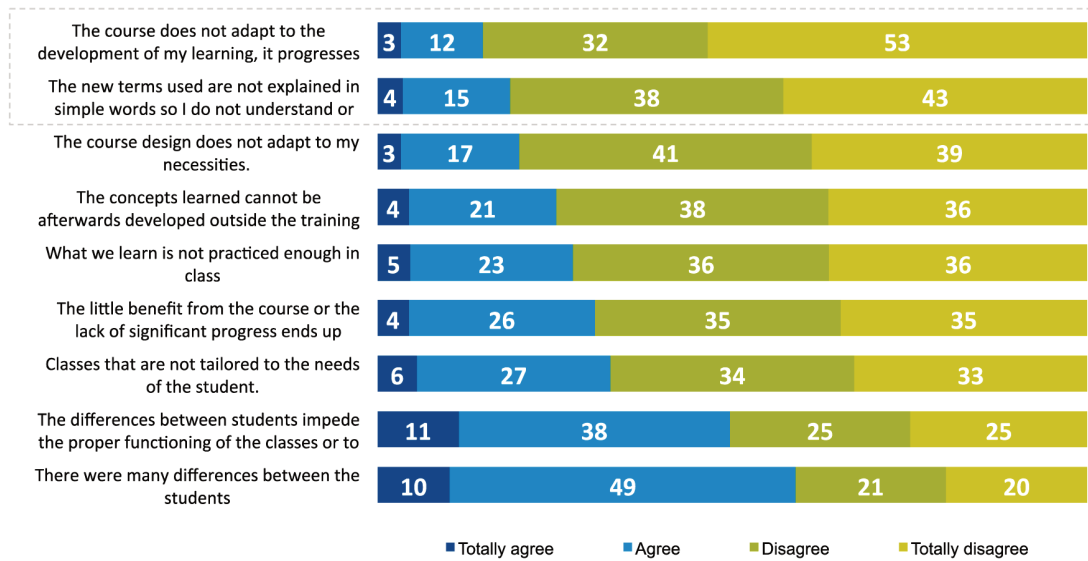
		Total
		7,45
Devices Use	Landline telephone	7,18
	Mobile phone to make/receive calls	7,11
	Mobile phone connected to internet (Smartphone)	7,49
	Desktop computer	7,32
	Laptop computer	7,25
	Tablet	7,42
	E-book	7,53
	Smart TV	7,52
	Traditional television	7,14
	Video game console	7,41
	audio/video player/music player	7,24
	Others	6,94
Functionalities use	WhatsApp	7,31
	Internet browser, content search	7,28
	E-mail	7,22
	Text editor	7,58
	Spreedsheets	7,55
	Databases	7,46
	photography applications designs (Photoshop or similar)	7,56
	Social networks. Facebook, Instagram, Twitter	7,65
	Others	7,34

Graph 4.27.

A number of limitations were named as obstacles for the adequate learning of the courses in the debate groups previous to the survey. Quantifying these cases, we can verify that the main reasons given are "the difference between students" and "how these affect the development of the classes", with 59% and 49% respectively. One out of two respondents considers this student heterogeneity as the chief learning obstacle. On the Contrary, "the adaptation of the course to the learning development", "the lexical used" or "the correspondence between the course design and the students' necessities" do not seem to be causes that limit learning, since they are mentioned as obstacles by 15%, 19% and 20% respectively.

Limitations of the courses made for ICT learning

	Totally agree	Agree	Disagree	Totally disagree
The course does not adapt to the development of my learning, it progresses	3	12	32	53
The new terms used are not explained in simple words so I do not understand or	4	15	38	43
The course design does not adapt to my necessities.	3	17	41	39
The concepts learned cannot be afterwards developed outside the training	4	21	38	36
What we learn is not practiced enough in class	5	23	36	36
The little benefit from the course or the lack of significant progress ends up	4	26	35	35
Classes that are not tailored to the needs of the student.	6	27	34	33
The differences between students impede the proper functioning of the classes or to	11	38	25	25
There were many differences between the students	10	49	21	20

Graph 4.28.

Going on with what was indicated by the participants in the debate groups, the respondents were asked about which were the most important elements for the proper use of the ICT courses. According to them, the most important thing is the didactic capacity of the trainers, that is valued as very important by 91.6% of respondents, followed by the equipment for the training (81.9%) and the rest of elements in similar proportions. Meanwhile, the least significant element for the adequate use of the courses is the previous handing out of material to be explained in class, cited as Very important by 63.2% of respondents. However, it is remarkable that all elements raised in the survey are valued as "Very important" or "somewhat important" in a majority way, with percentages of 90.1% and 98.3%.

Elements necessary for adequate academic progress on ICT
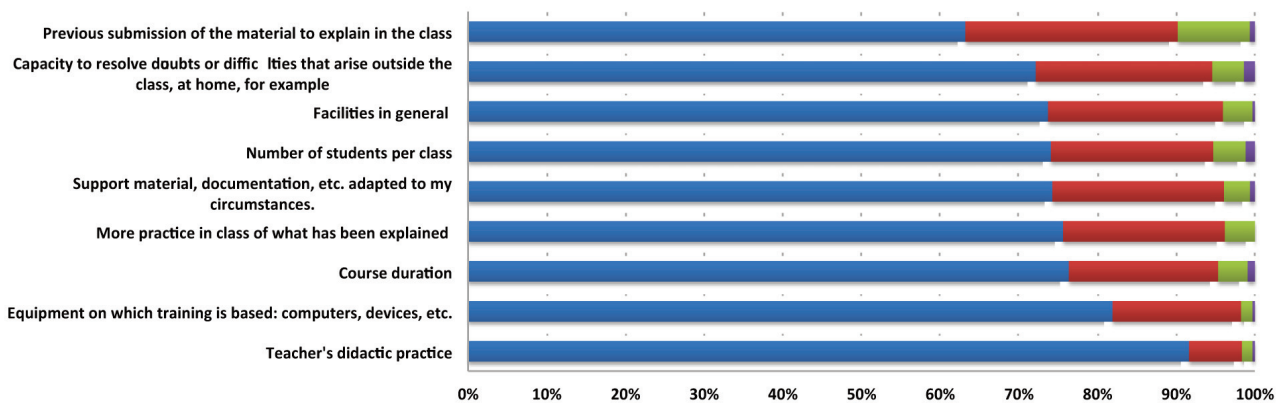
|	Teacher's didactic practice	Equipment on which training is based: computers, devices, etc.	Course duration	More practice in class of what has been explained	Support material, documentation, etc. adapted to my circumstances.	Number of students per class	Facilities in general	Capacity to resolve doubts or difficulties that arise outside the class, at home, for example	Previous submission of the material to explain in the class
Very Important	91,62	81,91	76,35	75,61	74,25	74,05	73,70	72,15	63,21
Quite important	6,72	16,32	18,96	20,56	21,81	20,65	22,25	22,41	26,97
Little importanceNot important at all	1,34	1,46	3,75	3,83	3,32	4,11	3,74	4,06	9,17
Not important at all	0,31	0,31	0,94	0,00	0,62	1,19	0,31	1,39	0,66

Graph 4.29.

Finally, older people were asked about the ideal length of ICT courses, 70% think that the ideal length is from 3 to 4 months, which does not correspond with what was said in the previous debate groups, in which it was pointed out that a duration of over two months is complex to attend for different reasons (family commitments, health problems, trips or other leisure activities, etc.).

Ideal duration of this kind of course
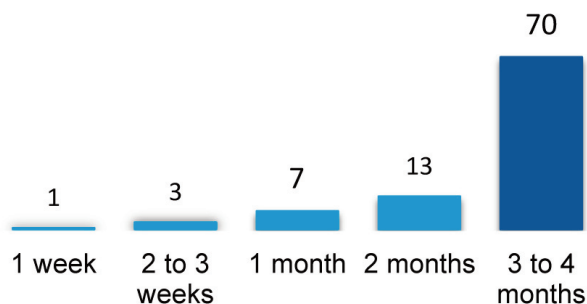
Graph 4.30.

7. CONCLUSIONS

The ageing of the Spanish population is apparent in the data of the last census carried out by the (INE) Spanish National Institute of Statistics (1 July 2015) in which of the total Spanish population (46,423,064) people aged over 65 represent 17.57% (8,156,064), those aged over 80 years of age 2,752,057 which constitutes 5.9% of the total Spanish population. This fact is confirmed when we compare the data from 2001, when the number of people aged over 65 was 17% of the population, of whom 13.2% are aged between 65 and 79 and those over 80 are 3.9% of the population. In 2011, despite the increase of the total Spanish population by nearly six million with respect to the previous decade, the percentage of people between 65 and 79 rises by only 0.3 percentage points, while the percentage of people over 80 rises by 1.3 percentage points.

This population ageing will gradually increase as if we analyse the statistical projection carried out by the INE from 2011 to 2061 we can see how the number of people aged between 65 and 79 increases significantly, constituting 14% in 2021, 17.7% in 2031, 21.3% in 2041, increasing to 21.4% in 2051 and falling to 17.6% in 2061. With respect to elderly people over 80 their numbers increased gradually from 61.5% in 2021, to 8.5% in 2031, to 11.8% in 2041 and 16.4% in 2051, becoming bigger than the 65 to 79 age group in 2061 as octogenarians will constitute 21.1% of the Spanish population in this year according to the projections of the INE. If we analyse the percentage of the population over 65, it will represent in 2021 20.6% of the total, but will be in 2041 33.1% (one out of every three inhabitants in Spain will be over 65) and in 2061 38.7% of the total population.

Eurostat projections for Europe 2020-2080 show how the population between 65 and 79 will go from 13.1% in 2013, to 14.6% in 2020, 17.9% in 2040, falling again to 16.6% in 2060 and to 16.4% in 2080. However, the population over 80 will increase from 5.1% of the total in 2013, to 5.8% in 2020, in 2040 it will reach 9%, 11.8% in 2060 and in 2080 it will be 12.3%. From the total of European citizens, in 2080 nearly one in every three citizens will be over 65.

For its part, the existence of a digital divide of a generational character can be observed in the data of the last survey of the INE from 2015[10] about the use of ICT items. We do not find any important differences regarding the use of mobile telephones. Computers are used by 38.1% of people aged between 65 and 74, far removed from the use of computers in the other age groups. The proportions of people who have used Internet are similar in percentage, although in the case of those over 65, the proportion falls to 11.3%. This data greatly conditions the following conclusions which refer at all times to Internet users divided by age groups and that therefore only show differen-

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10 http://www.ine.es/dynt3/inebase/es/index.htm?padre=2246&capsel=2250 published 1 October 2015.

ces within this population segment. In the case of people between 65 and 74 they refer only to the 33.9% of the total who have used Internet at some time.

Within this 33.9% of those aged between 65 and 74 who have connected to Internet at some time, the percentage differences between those who have connected to Internet in the last month amongst this age segment (89.9%) compared with the majority one (16 to 24 years old) do not reach 10 percentage points (9.1%). If we observe the frequency of Internet use, 65% of those over 65 connect daily.

If we look at the data published by Eurostat for 2015, only 9.3% of Spanish people aged between 65 and 74 buy goods or services online. In the case of Spain, the levels of online reading or downloading of digital press stand out being above the EU average in all age groups except in the oldest group. The difference between the majority and minority group in Spain rises to 54.2%, which seems to indicate a certain marginalization of this oldest age group in the process of participation in the services of information society. With regard to the "Search for information about goods and services online", the difference between the EU average and Spain amongst people aged between 65 and 74 is 16.6% (33.8% as opposed to 17.2%). With respect to the use of online banking, in the Spanish case these differences are 40% (54.2% of ages between 25 and 34 and between 65 and 74). Regarding participation social networks, the difference in the majority and minority percentages according to age groups are the biggest existing in any activity, as it is 77.5% in the Spanish case (89.2% of the participation in social networks amongst people aged between 16 and 24 as opposed to 11.7% amongst people aged between 65 and 74) and 72.5 percentage points in the EU case (86.2% of participation in social networks amongst people aged between 65 and 74).

Going back to the latest survey of the INE published in this respect, if we compare the participation in Information Society of elderly people (65 to 74) who use Internet habitually, with the rest of internauts grouped by age, we can observe a number of conclusions. Likewise, specific activities exist where the generational digital divide amongst Internet users is practically inexistent, such as "Reading news, newspapers or magazines about current affairs online, "Searching for information about health issues", "Online banking" or "Using services related with travel and accommodation" given that the age group between 65 and 74 do such

activity in percentages which are even above younger age groups. Where we can find this generational difference, as would appear logical according to leisure time activities by age and necessities, in in the downloading of software (excluding games), searching for information about education and the watching of videos or films online.

Another piece of information which can be important with respect to the existence of a digital divide is the level of trust of Internet by users. In this respect, it does not appear that generational differences are in this case especially important, given that even although it is true that the level of distrust is increasing with age, the greatest differences are below 13 percentage points. A reasonable level of trust in Internet is declared majoritarily by all groups. However, the differences between those who declare little or no trust in Internet and those who declare a lot of trust in Internet is amply in favour of the first, in some population groups reaching percentage differences of 31.3% (in the oldest age group). This data demonstrates a certain level of distrust in Internet, which can be an obstacle for a greater use of utilities and services provided. However, when the limitation or non-use of activities due to security reasons, the people aged between 65 and 74, are those who have cited this type of reason less, we do not know if this is due to a lack of knowledge of the risks implied or to not understanding the questions considered, which is not coherent with the previous question.

In the INE survey questions related to content protection of Internet users were included such as "Making backup copies" or "Use and updating of some type of security software". In this sense, the elderly people (65 to 74) are those who make the least backup copies (only 39%) but they are included in the percentage average regarding the periodical updating of security software (75.1%).

With reference to the computer tasks carried out by Internet users, we can see that as the complexity of the activity increases the number of people who perform them reduces in all age groups. However, the percentage differences increase directly proportional to the increase in age with relation to the complexity of the activity. Nevertheless, with respect to the communication services employed for personal reasons in the last three months, there exist certain services which are used by elderly people in similar proportions to the rest of the population, such as "Receiving or sending emails" or "Making online telephone calls or video calls

using a Webcam" (related to the communication with children or grandchildren in other places).

If the data of people aged between 65 and 74 who buy online is important regarding the rejection of this type of activity (only 11.3% do so), this percentage is especially active in online commerce. This is what the majority age group is like whose members have bought in the last month between 3 to 5 times and in addition is the majority group in purchases between 100 and 500 euros. It is also this age group at a lower percentage who declares to have had some type of problem when buying online in the last 12 months (35%) and who gives as a cause for not buying online "Preoccupation about privacy or security with payments". "Preferring to buy personally in a shop" and "The lack of ability or knowledge" is given as the majority cause by people aged between 65 and 74 for not buying online, this criteria decreases as age decreases. With reference to what kinds of products or services are purchased online, the people between 65 and 74 are the majority when buying "Books, magazines and newspapers, including electronic book" with a percentage of 27.7% and in "Food products and other perishable products". Together with the previous age group they also are a majority in "Services related to travel (tickets for public transport, car hire, etc.)".

Amongst the main conclusions of the survey carried out on 985 elderly people in Madrid, Galicia and Granada, we can highlight that regarding the average time that the elderly people surveyed connect to Internet, this rises to 2.2 hours daily with the principal reason being to send and receive emails (64%), followed by reading the digital press (61%), the search for useful information (59%) or for leisure (54%). These four activities coincide with the average of the mentioned tasks which is 3.6%. The low percentages in the carrying out of bureaucratic processes online (28%) and of online purchases (10%) which coincides with the data from the previous chapter, not the use of online banking with 26% which according to the data from the previous chapter is used majoritarily by elderly people (with percentages above 40%).

The places where elderly people say they connect to Internet are principally at home (80%), followed by public places (30%) where probably libraries and senior citizens' clubs are included. It is worth highlighting that to do this they equally use mobile telephones, desktop computers or laptops at percentages around 50%. The lower than expected use of the tablet calls our attention (16%) and Smart TVs (4%) are used more than electronic books (3%). The influence of grandchildren can be seen in the 1% who connect to Internet via a video console.

One of the questions to which unanimity nearly exists is about the importance given to Information and Communication Technology by those surveyed, as 65.7% consider it totally necessary and 29.9% quite necessary, summing up these opinions about the necessity of ICT constitutes a large majority of 95.6%. Those who do not consider ICT necessary or of little necessity amount to only 1.5% of those surveyed.

We can also conclude that those people who do not have any difficulty when learning to use ICT use all devices more, except mobile telephones to receive/make calls and the traditional television, which is used majoritarily by all those surveyed. With reference to age, those of less age amongst the surveyed use, regarding the media, the following technological devices more: Smartphones, Tablets, Smart TVs, video consoles and audio/video/equipment music players. Nevertheless, the use of desktop computers and of laptops increases as the age of those surveyed increases. The applications most used are Internet Browser (86%), email (81%) and WhatsApp (74%). It is significant that the calculation papers, databases and the design applications and photographic treatment are used at around 25%. For its part, the most used application (daily use) is WhatsApp (66%), followed by Internet Browser (55%) and email (48%). At the opposite extreme (not used) we can find the spreadsheets (77%), the databases (75%) and the design and photographic treatment applications (70%).

Practically all of those surveyed could make a basic use of mobile telephones for calls (99%), fixed landline (98%) and a traditional television (94%). The devices considered to be most difficult to use are Video consoles (44%) and Smart TVs (51%). It stands out that 44% of those surveyed consider that they would not be capable of a basic use of an e-book as opposed to the 16% who answered that they would not be able to make a basic use of a Smartphone or 35% with regard to a Tablet. With reference to utilities, nearly all of the elderly people surveyed could make a basic use of email (93%). WhatsApp is the easiest application to use (66% could use it without problems) as opposed to the spreadsheets at 47% who could not use them which coincides with the lower percentage who could make a basic use at 53%

If we combine the number of times that a device or application is used with the percentage of people surveyed who could make a basic use of these devices or applications without problems to evaluate the existence of a co-relation between easiness to use and declared frequency of use, we can infer that the most used devices (mobile telephone to receive calls, traditional television, fixed landline telephone or WhatsApp) are also the easiest to use. At the opposite extreme we can find video consoles, design or photographic treatment applications, databases or Smart TVs. The application which is least used in relation to its ease of use is the spreadsheet.

Regarding the assessment of the satisfaction of those surveyed with the use of different devices, we can find that one out of every three is very or totally satisfied with their present use of traditional television, landline telephones and mobile telephones to make and receive calls. At the opposite extreme, those surveyed are not satisfied at all or little with their personal use of video consoles (70%), Smart TVs (68%) and E-books (62%). The latter regarding E-books is important, as is that regarding laptops and desktop computers which do not indicate very high levels of satisfaction with personal use (26% and 27% respectively), with percentages near 90% of people who could make a basic use of them.

Regarding the question about how they learned to use a computer and Internet, eight out of every ten of those surveyed state that they learned to use a computer and Internet thanks to a training course. It is, nevertheless, important, that one out of every three learned how to use a computer and Internet thanks to the help of family and friends. The percentage of those surveyed that learned to use a computer at work is 18% as opposed to 12% who learned how to use Internet at work, which seems to prove some opinions expressed in the previous discussion groups which stated that many of them started to use a computer during the last few working years, but for very specific functions (word processor or specific company programmes).

The necessity to continually ask for help also came up in the discussion groups. If we assess the frequency with which those surveyed say they asked for help, we can observe that 90% asked for help at least once per month to resolve their problems, and within this group, 43% asked for help at least once per week (12% asked for help on a daily basis). 59% of those surveyed ask their immediate family for help when they have a problem with their computer,

26% asked friends and significantly 26% ask companies or ICT professionals.

With reference to the average of courses attended, we can see that it is 2.9; mainly related with basic computing (89%) and Internet Use (71%). It is notable how one out of every two of those surveyed has completed a course about Social networks. These proportions correspond with the frequency with which these courses are given in different socio-community centres and in university courses for elderly people.

Another of the questions which we consider can provide us with a profile of elderly people with regard to ICT courses is the reason given for taking such courses, allowing in this case a multiple answer. The great majority of those surveyed mention the need to learn as their main motivation (82.6%), followed by "intuition" about its usefulness (31.8%) and for leisure or entertainment (25.8%). 7% state that they did the course because of social pressure, while 12.5% and 15.5% say that they took a course due to the recommendation of friends and of family, respectively.

The assessment by those surveyed regarding the easiness to learn ICT relating to age is striking. On a scale of 1 to 10 where 10 represents that they were "Totally easy to learn" and 0 represents "Impossible to learn, the average mark was 6.1. For its part, the main obstacles for ICT use are a lack of knowledge of how to use programmes (48%), frustration relating to problems which they do not know how to resolve (46%) and the lack of trust of Internet security (42%), followed by the fear of damaging the device (39%), and the lack of understanding of terminology (35%). All of these obstacles referred to at percentages above 35%, which would appear to indicate that at least one out of every three of those surveyed are affected by them.

When the participants of this survey were questioned about the ease of learning with respect to the courses taken, on a scale from 0 (impossible to learn) to 10 (Totally easy to learn), we can see that 32% believe that the contents have been very easy to learn, although a higher percentage (56%) exists which gives a score between 5 and 7, which in this type of surveys tends to indicate a certain degree of dissatisfaction, especially when 12% is located in a range between 0 and 4. The average mark for this question was 6.5. With respect to the general satisfaction with the overall learning obtained from the course (evaluating again on a scale from 0 to 10) 52% is very sa-

tisfied with their learning (between 8 and 10) and in this case, the average obtained was 7.5. Despite the impression of difficulty in the learning, those surveyed demonstrate satisfaction with the result of the courses. We can observe a clear divergence between ease of learning (low) with respect to overall satisfaction (high), perhaps motivated by low expectations due to a lack of knowledge of ICT.

From the discussion groups carried out for the preparation of this survey a series of alleged limitations were observed as obstacles to learning on the courses. Quantifying these causes, we can see how "The difference between the students" and "How these affect the working of the classes" are the main reasons given, at percentages of 59% and 49%, respectively. One out of every two of those surveyed considers the homogeneity of the students as the main obstacle to learning. On the contrary, the accommodation of the course to learning evolution and the terminology used, or the correspondence between student necessities, do not appear to be causes which limit learning, as they are given as obstacles by 15%, 19% and 20% respectively.

Continuing with that indicated by participants in the discussion groups, those surveyed were asked what were the most important factors for an adequate use of the ICT courses. We can observe that the most important factor is "The didactic capacity of the teacher, which is valued as "Very important" by 91.6% of those surveyed, followed by "The course devices with which training was carried out" (81.9%) and the rest of factors in similar proportions. For its part, the least important for an adequate level of course usefulness is "The previous handing out of course material to be explained in class", cited as "Very important by 63.2% of those surveyed. However, we should highlight that all of the factors asked about in the survey are valued as "Very important" or "Quite important" majoritarily, at percentages of 90.1% and 98%, which confirms the conclusions obtained in the previous discussion groups.

Finally, when the elderly people were asked about the ideal duration of the ICT courses, 70% consider that the ideal duration of these ICT courses is between 3 and 4 months, which does not correspond with that mentioned in the previous discussion groups, in which a duration of more than two months was indicated as difficult to follow for diverse reasons (family commitments, health problems, trips or other leisure activities, etc.)

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