

**How to cite this article in bibliographies / References**

M Viñarás-Abad, L Abad-Alcalá, C Llorente-Barroso, M Sánchez-Valle, M Pretel-Jiménez (2017): “e-Administration and the e-inclusion of the elderly”. *Revista Latina de Comunicación Social*, 72, pp. 197 to 219.

<http://www.revistalatinacs.org/072paper/1161/11en.html>

DOI: [10.4185/RLCS-2017-1161](https://doi.org/10.4185/RLCS-2017-1161)

# e-Administration and the e-inclusion of the elderly

**Mónica Viñarás-Abad** [[CV](#)] [ [ORCID](#)] [ [GGS](#)]  
Universidad CEU San Pablo (España) - [monica.vinasabad@ceu.es](mailto:monica.vinasabad@ceu.es)

**Leopoldo Abad-Alcalá** [[CV](#)] [ [ORCID](#)] [ [GGS](#)]  
Universidad CEU San Pablo (España) - [abad.fhm@ceu.es](mailto:abad.fhm@ceu.es)

**Carmen Llorente-Barroso** [[CV](#)] [ [ORCID](#)] [ [GGS](#)]  
Universidad CEU San Pablo (España) - [carmen.llorentebarroso@ceu.es](mailto:carmen.llorentebarroso@ceu.es)

**María Sánchez-Valle** [[CV](#)] [ [ORCID](#)] [ [GGS](#)]  
Universidad CEU San Pablo (España) - [mvalle.fhum@ceu.es](mailto:mvalle.fhum@ceu.es)

**Marilé Pretel-Jiménez** [[CV](#)] [ [ORCID](#)] [ [GGS](#)]  
Universidad CEU San Pablo (España) - [mapretel.fhm@ceu.es](mailto:mapretel.fhm@ceu.es)

## Abstract

**Introduction:** The use of Internet by the elderly to handle transactions with officialdom and corporations demands further in-depth study. The census data published by the INE in July 2015 confirm population aging in Spain and little use of e-administration by the oldest social group. The aim of this work is to take a close look at the reasons for this limited use of electronic administration and online procedures by older Internet users. **Methodology:** The causes and obstacles in the use of these processes are studied, following a strict analysis of the scientific bibliography together with the assorted surveys carried out on the issue by public and private institutions. **Results and Conclusions:** The results show acceptance of the use of electronic resources for the most routine and simple tasks due to the speed and convenience they offer while simultaneously promoting the autonomy and empowerment of the elderly. However, there is a series of points that have a negative effect on their use that must be addressed in order to favour greater digital inclusion of this age group; these are dealt with in the discussion of this proposal.

## Keywords

e-administration, the elderly, empowerment, digital literacy, digital inclusion, active aging.

## Contents

1. Introduction. 2. Methodology. 3. Results. 3.1. Precedents. 3.2. Status of the issue. 3.2.1. The challenges for the public administration. 3.2.2. Present and future of e-Administration in Spain. 3.2.3. The elderly, ICT and Internet. Progress at its own pace. 3.2.4. The Elderly and e-Administration. 4. Discussion and conclusions. 5. References.

Translation by **Ann Hannigan-Breen**  
Member of CIOL (Chartered Institute of Linguists) UK

## 1. Introduction

Nowadays, the majority of transactions with officialdom are carried out on Internet, a situation which, for some groups such as the elderly, is not merely a problem, but also a constraint. The knowledge-based society and the ITC's have fostered great social development, but for the most vulnerable groups this may imply a considerable challenge in their day-to-day lives, more specifically, as regarding the exercise of their rights as citizens. While the data on the aging of the population is consolidated, various studies seem to confirm the scarce use of e-administration, a fact which should cause concern and attract the attention of the administration as a public service. Similarly, in the scientific community this is an infrequent object of study, which leads to complications when researching the motivations of the elderly in their use of Public Administration services.

On this point, e-transactions are not only a channel for public service, but also for communication and relations with officialdom. In this type of transactions, many very different obstacles can be found, from the need to have the necessary equipment available, that is, that the elderly person must have a computer, a tablet or a mobile phone. Then there is the interface, its architecture and ease-of-use, together with the trust one must have when carrying out a transaction on a computer and not face-to-face with a person.

Elderly people are thought to be vulnerable and, apart from frequently not having the necessary knowledge to use Internet, they may have the physical or psychological constraints associated with their age.

Although e-commerce belonging to the private sector may be subject to other regulations and laws, the Civil Service, in its role as a service to the citizens, should guarantee that it responds to the needs and expectations of all groups, particularly the most vulnerable.

The work presented here, as has been commented, is a product of the research project funded by the Community of Madrid and the European Social Fund "Program of Activities on Digital Vulnerability (PROVULDIG)", and the Project "The elderly, e-commerce and e-administration: breaking the third digital divide" (CSO2015-66746-R), funded by the Directorate General for Scientific and Technical Research of the Ministry of Economy, Industry and Competitiveness as part of the VI National Plan

for R & D. In order to develop the subject, we feel it is necessary to establish the status of the issue on the elderly and e- administration, which will allow for the development of further research.

## **2. Methodology**

The main specific objective of the work presented is to offer a status of the issue on the elderly and e-administration which allows for access to those studies carried out *a priori* and to discover what specific use elderly people make of Internet and e-administration. This means taking a close look at the reasons for the limited use of e-administration and online transactions by older Internet users. Achieving this objective involves secondary aims such as selecting and analysing published biographical sources, both scientific works and more technical reports and studies on the subject; identifying the motives that result in infrequent use of e-administration and analysis of these motives in order to thereby understand how and why the elderly make use of these services.

To do so, we have analysed the motivation and obstacles in the use of these transactions based, principally, on the available scientific bibliography, together with several surveys and reports carried out on the issue by public and private institutions.

The search and analysis of said works will permit the establishment of a concept map framework on the elderly and e-administration based on which new research projects will be developed.

As has been indicated above, this is the first step in the research project whose starting hypothesis is that the restricted use that the elderly make of ICT's is due not only to technical or operational constraints, but also to motivational and psychological aspects (cognitive, emotional and behavioural). In the studies carried out both in academia and by several public and private institutions, no attention has been paid to the specific problems this age group has with this type of activities, an aspect we intend to deal with in this project.

This is ground-breaking work in Spain in this sense, as it is based on assessment by the interested parties themselves and their needs as expressed in the various research methods included in the work.

In order to carry out the analysis and present the results, the starting-point is two separate questions: the inclusion of the elderly in ICT's, and the adaption of officialdom to the digital environment. Subsequently these two points come together to explain the specific situation of this group and its relationship with e-administration. Thus, an updated image of the inclusion (or the lack of inclusion) of the elderly and e-administration is obtained, which lays down the foundations on which later research will be designed.

## **3. Results**

### **3.1. Precedents**

The complexity involved in addressing aging is at the crux of the matter, as stated by gerontologists such as Binstock, Fishman and Johnson (2006: 434-453) or Settersten (2006: 3-19). The complexity of aging and the need to take into account the different characteristics of old age suggest that the traditional categories by age groups (50-64, 65-74 and 75+) used in statistics and quantitative

approaches are not fit for purpose; for this reason and in accordance with the thoughts of these authors, it is necessary to use the groups detailed below when dealing with research on this subject:

- Age more or less close to retirement (pre-retirement period)
- Self-sufficient age as a pensioner (independent life period)
- Age with an increase in constraints (start of dependent life period)
- Age of dependent elderly people (dependent life period until end of life)

Together with these aspects, we must take into account significant differences amongst elderly people depending on their economic situation, social bonds, personal interests or living environment. As Ala-Mutka, Malanowski, Punie & Cabrera (2008) establish in their report “Active Ageing and the Potential of ICT for Learning”, in using this multipolar perspective, better research tools must be developed in order to predict the future needs of those who are not yet old.

The demographic change which has occurred in Spain has been swift, progressive and profound; it is clear that the future demographic panorama paints a picture of an aged society in which almost one third of the population will be elderly. This group is becoming ever more numerous and life expectancy extends the length of this stage of life. This increase is basically due to a lengthening of life expectancy and the drop in the birth rate. After Japan, the projections for 2050 place Spain among the most long-lived countries in the world (Imserso, 2009). Proof of this is that if we compare the number of elderly people at the beginning of the 20th century with the census in Spain in 2007, which included 45,200,737 people, this age group had multiplied by a 2.4 (Imserso, 2009). This evolution had gone from 5.2% of the total population at the beginning of the 20th century to three times that by that date (16.7%). The latest census in 2016 confirms this tendency. Of the total population of Spain (42,019,525), those over 65 represent 19.96% (8.347.513); there are 2,731,560 people over the age of 80, thereby making up 6.5% the total of the Spanish population (INE, 2016). Due to the aging of the population pyramid, the long-term projections by the INE for 2009-2049 suggest that the population of people over the age of 64 will have doubled in 40 years and will represent 31.9% of the total. Thus the natural growth rate of the population will be negative as of 2020. The above-mentioned “Long-term Population Projection for Spain, 2009-2049” indicates that, “for every 10 people of working age, in 2049 almost 9 potentially inactive people will reside in Spain (under 16 or over 64). That is to say, the dependency ratio will rise to 89.6%, from the current 47.8%” (INE, 2010: 3). The population projection for 2060 is 15,679,878 individuals over 65 years old. For each child there will be 2.3 elderly people. From a continental perspective, the European Union in its “Ambient Assisted Living (AAL) Joint Programme” indicates that life expectancy in Europe has increased from 55 years in 1922 to 80 years nowadays. In 2020, approximately a quarter of the population of Europe will be over 65 and the number of individuals between the ages of 65 and 80 will increase to almost 40% of the population of Europe between 2010 and 2030 (European Commission, n.d.). Spain is no different from this world population aging situation, in which according to the United Nations (United Nations, 2011) the over-65 population of Spain will increase from 16.1% in 2011 to 26.8% in 2050, becoming the country with the second highest percentage of

elderly people after Japan (23% in 2010, 36.5% in 2050). If we heed the Imsero population projections, in Spain the over 80s will go from 5.2% of the total in 2010 to 14.9% in 2050, while those between 65 and 79 will go from 12.1% in 2010 to 21.5% in 2050 (Imsero, 2014).

This major demographic change is occurring in tandem with a revolution like that brought about by the printing press or the Industrial Revolution: Internet and the development of ICT's.

An aging population means a change in the economic, social and technological structures of a country. Older people are of need forced to develop abilities and skills in the use of ICT's and so to reduce the digital divide between those who are connected (young people and adults) and those who are not connected (elderly people).

Taking into account the data of the "Survey on Equipment and Use of Information and Communications Technologies (ICT) in Homes 2014", only 25.8% of people between the ages of 65 and 74 have used a computer in the previous three months; the percentage rises to 26.2% amongst those in this age group who have used Internet in the same period; those who have used it at least once a week the previous three months make up 22.8%; however, only 4.5% of people between the ages of 65 and 74 have bought anything on Internet in the last three months. This figure rises to 9.1% for those who have at some point shopped on Internet (INE, 2015).

There is ample literature on the connections between older people with new Information and communication technologies (NICT); outstanding among others are the works by Llorente-Barroso, Viñarás-Abad and Sánchez-Valle (2015) who tackle the links of the elderly with Internet by setting out two main objectives: to understand the use of Internet for this age group and to explain the reasons why this media may become a source of opportunity for active aging. On the other hand, Aalbers, Baars and Olde-Rikkert (2011) mention an improvement in the standard of living of the over 50s due to the use of Internet; besides, White, McConnell, Clipp, Branch, Sloane, Pieper and Box (2002) carried out a study on the psychosocial impact of supplying Internet to older people for five months. On the subject of the empowerment of elderly people, Slegers, Van-Boxtel and Jolles (2007) proposed research on the relationship between the use of the computer and Internet and the independence of elderly people. Of particular interest is the work by Wandke, Sengpiel and Sönksen (2012) which cast doubt on the six myths about older people and the ICT's:

- 1) Future generations of older people will use computers without problems.
- 2) Older people are not interested in using computers.
- 3) Older people consider computers as useless and unnecessary
- 4) Older people lack the physical capabilities to use ICT.
- 5) Older people simply cannot understand interactive computing technology.
- 6) You can't teach an old dog new tricks.

There are many contributions specifically on NICT learning by older people, in particular that by Abad-Alcalá (2014), who proposes a new teaching methodology for older people to make the most of ICT and Internet courses. In this line, Turner, Turner and Van-de-Walle (2007) examined the learning difficulties in new technologies, mainly referring to computers and Internet. In addition, Shapira, Barak and Gal (2007) referred to the psychosocial impact of the use of Internet for the elderly; besides, Xie and Bugg (2009) described the experiment of designing and setting up training programs in public libraries so that older people can access health information on Internet.

More specifically on the media literacy of older people, we find the work by Williamson and Asla (2009), who analyse the behaviour of silver surfers in their searches for information in order to come to conclusions on the media literacy needs of this age group. In this regard, Tirado-Morueta, Hernando-Gómez, García-Ruiz, Santibáñez-Velilla and Marín-Gutiérrez (2012) show the process of creation and validation, using a pilot test to assess the media competency of people over 60 years old.

This situation is why public institutions promote research lines on this subject. Outstanding among the conclusions obtained is older people's conviction regarding the advantages offered both by e-commerce and e-administration, while simultaneously showing their reluctance regarding their use for various reasons. Mainly, and among others, because of:

- 1) The lack of security regarding their personal data.
- 2) Little transparency regarding the product or service offered.
- 3) Doubts about the shipping or return procedures.
- 4) The complexity of the questionnaires.
- 5) The absence of electronic credentials for the proper fulfilment of administrative transactions.

Additionally, this work is also a continuation of the project "Digital healthcare communication for active aging", by the Universidad CEU San Pablo, USPBSPPC03/2012, which, among its conclusions, considers that in spite of the very scarce research in Spain regarding the elderly and their use of digital healthcare communication in particular, and online communications in general, it is important to take into account that this group is not uniform in its use of Internet and that, therefore, segmentation of the older group is necessary in order to carry out these studies.

Therefore it would be interesting to carry out studies in Spain on the factors that create confidence in digital communication such as those which have been carried out, mainly in the USA. Some of the most outstanding of such studies have concluded that the factors which most influence confidence are mainly the perception of the expertise of the source, the depths of the information and a suitable design (Hong, 2006). Although very useful instruments are being developed to guarantee the trustworthiness of healthcare information on Internet, these initiatives have two limitations:

- 1) First, it is not known whether they are proper assessment mechanisms.
- 2) Second, it is not known whether they attend to the needs and characteristics of the users and, more specifically, of the elderly.

This area offers, then, opportunities for research and it would be advisable to carry out studies on this issue as is intended in this research project. The use of digital communication facilitates access to information and to the healthcare institution services, an aspect that may be extrapolated to other areas such as public administration. Older people do investigate the opportunities offered by the web, particularly for news and communications, and are beginning to make use of the services for administrative transactions and entertainment. In this sense, Internet contributes to their self-sufficiency, allows them to improve their cognitive activity and strengthens their self-esteem. These findings are an interesting starting-point for further study of Internet use by the elderly. Silver surfers who look for online information use good criteria to recognize the reliability of the websites they consult in general, however they do not seem to know or do not know of the existence of authorized criteria which give some guarantee of the trustworthiness of the information.

The current project, “Programme of activities on digital vulnerability”, funded by the Community of Madrid and the European Social Fund, of which this work is also part, intends to have an impact on the motivations and causes that limit this age group’s access to this type of products and services, and to make proposals on how to create reliable and secure digital environments for older people who could then benefit from all the advantages offered by the Information and Communication Technologies (ICT).

In short, this research arose from the combination of two realities, the aging of the Spanish population together with the spread of the information society to practically all spheres of everyone’s professional, personal and family life. One of the areas of the information society with the greatest growth is e-commerce and e-administration, although paradoxically its use by older people is not advancing at the same speed. If the concept of the first digital divide was particularly linked to access to Internet, and the second digital divide to the operational capacity of the ICT’s, the third digital divide is more closely linked to the possibility of accessing all the utilities that the information society offers, particularly for older people, who, because of motor or cognitive disabilities, could get invaluable benefits from the goods, services and possibilities offered by ICT’s.

### **3.2. Status of the issue**

Next, the main contributions in the scientific and professional fields are presented, following four content points, from the general to the specific.

#### **3.2.1. The challenges for the public administration**

When we speak of e-administration, we are not only referring to the use of ITC’s in officialdom, but also the fact that it implies a change in the organization of work and the need for new skills for workers. This would mean an improvement in public services and better attention for the citizen.

A public e-administration is a more transparent and open institution. However, we must not forget that its main function is to be at the service of the citizen, and that its final objective is to offer the most effective and efficient service. Thus, the citizen must consider the e-administration as assistance and not as an obstacle or a barrier which stops him or her from accessing these resources.

At present, the Civil Service is facing the challenges brought about by the changes which are occurring all around it. This goes from the main social and economic trends to ever-growing prospects of providing better-quality services for their clients that is, citizens and companies. Simultaneously, they have to deal with tighter budgets and the demands of their own workers. In the following sections some of these challenges are analyzed. E-administration is defined as the use of information and communication technology in public administration in combination with organizational change and new techniques to improve public services and the democratic process and to support public policies (Liikanen, 2003).

For Liikanen, who has been the European Commissioner for Budget, Personnel and Administration, e-administration allows the public sector to strengthen good governance in the knowledge society, which entails:

- A transparent and open public sector. Accessible governments who are responsible to their citizens, open to participation in democratic scrutiny. For example, generalized online consultation for greater quality in public area decision-making.
- A Civil Service for everyone. A public sector designed for the user should be inclusive; that is, it should not exclude anyone from its services and must respect everyone as an individual, and offer him or her personalized services. For example, people with reduced mobility can benefit from the public services which are offered online. A great deal of time is saved if the electronic forms for taxes are personalized and filled in *a priori*, and only need one click to be accepted.
- A productive public sector gives the maximum results with the taxpayers' money. For example, there is no need to put in data again if the systems have links and the management procedures are automated. In this way, less time is spent in front of the screen, fewer errors are made and there is more time for a face-to-face professional service, and the work of the civil service becomes more gratifying.

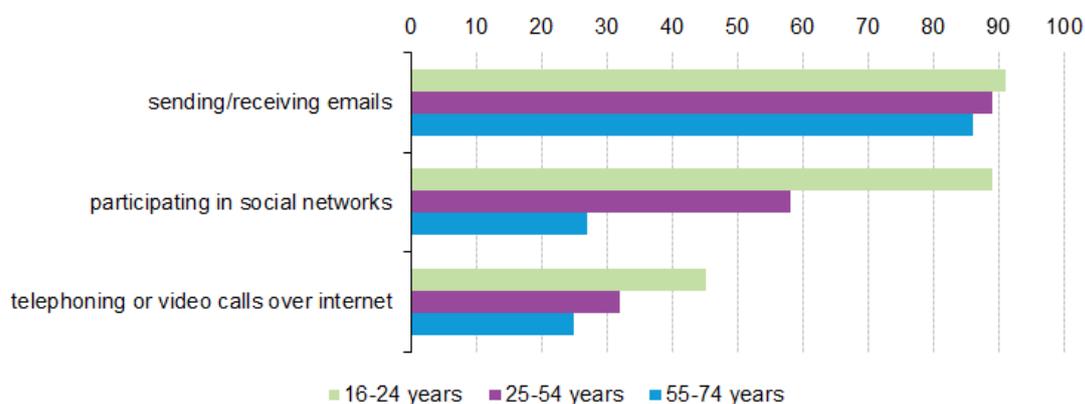
According to Eurostat (2016), e-Government is taken to be the use of information and communication technologies in public administration procedures. One of the aspects of the administration, from the perspective of demand, refers to the interaction of individuals or companies with the public administrations by means of ICT's. For both the individuals and the companies this interaction may mean obtaining information, downloading forms or returning them filled in, using a totally electronic procedure. For businesses, this process may even include the presentation of a bid through an electronic tender system (Eurostat, 2016).

In 2013, according to data from this same organization, Eurostat, 41% of the US population has made contact with or interacted with the public authorities and public services for private ends

through Internet; this figure is 9 percentage points below the objective of the Digital Agenda. Spain is average for this use.

Regarding the user's reasons for using the government websites, 44% of the e-government users stated that it was for procedures on income tax, followed by requests for personal documents (passport, identity card or driver's license) or for birth, marriage or death certificates (20%), for the rates reduction for Social Security benefits (16%), searches for public libraries (16%), to register in higher education or the university (9%), and to notify a change of address (6%). However, one in ten e-government users (41%) in the EU had had problems using e-government websites. Almost a quarter (24%) had technical problems with the website, 23% found that the information was insufficient, unclear or out-of-date, and 13% did not find the online or off-line support they needed to obtain the correct information or the forms to fill in or send.

**Image 1. The use of Internet for communication, by age group EU-28.**

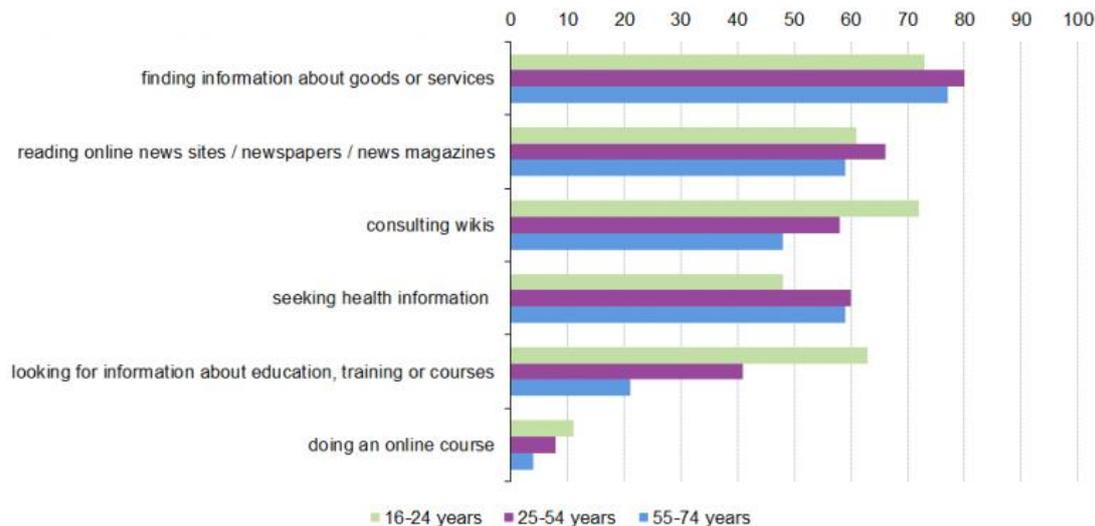


Fuente: Eurostat, 2013.

The additional indicators on user satisfaction show that about one sixth of the e-government users in the EU were mostly dissatisfied with the ease-of-use of the e-administration services on the websites (16%) and the ease of finding information (16%). Over one in ten was dissatisfied with the information available (13%). In general, it would seem that there is a great margin for improvement in administrative services.

As regards differences in use due to age, it can be seen that there is no difference when dealing with email, but there are differences in other activities. The main differences between the young and the old were registered when referring to other communication activities covered by the study, such as the social networks and telephone or video calls on Internet. The proportion of Internet users who used social networks was 89% in the 16 to 24-year-old age group, in comparison with 27% of the 55 to 74-year-old group. The percentage of users who make telephone calls or videoconferences through applications based on Internet was 45% in the 16 to 24-year-old group, in comparison with 25% for those between 55 and 74.

**Image 2. The use of Internet for access to information and learning by age group, EU-28, 2013 (% of users)**



Eurostat, 2013.

While work is being done to achieve an open transparent public administration which will continue to serve the citizen efficiently and effectively, the data reflect that there is still much to do in this area. The satisfaction shown by older people regarding e-administration does not fulfil the objectives proposed by these organizations. Spain, as a member of the EU, has complicated the situation and created different programs in this line.

### 3.2.2. Present and future of e-Administration in Spain

In this section we find proposals suggested by the state public administrations on e-administration, specifically, the Digital Transformation Plan for the Civil Service (AGE) and its Public Entities (OO.PP) (Ministry of Economy, 2015). In this line, the Commission for ICT Strategy, in accordance with what is stated in Royal Decree 806/2014, September 19<sup>th</sup>, on the organization and operative tools of the ICT in the Civil Service, has amongst its functions “to act as an Observatory of e-Administration and Digital Transformation”.

In a Cabinet Meeting on October 2<sup>nd</sup>, 2015, the Spanish government passed the Plan for The Digital Transformation for the Civil Service (AGE) and its Public Entities (OO.PP) (Ministry of Economy, 2015). The time period for this Plan is from the year 2015 to 2020, and is the global strategic framework laid out by the government in order to advance in its transformation by establishing its guiding principles, its objectives and the actions to be taken to achieve them, together with the milestones for the gradual development of digital administration.

The five strategic objectives which provide the backbone for the ICT Strategy are, firstly, to increase productivity and efficiency in the internal workings of officialdom, as an element of national competitiveness; secondly, to make a profound digital transformation in public administrations, thereby making the digital channel preferable for citizen and company relations with officialdom, and also the appropriate means for civil servants to carry out their work, thus improving the quality of the services offered to the public and transparency in its internal workings; third, to achieve greater efficiency in the ICT services which are common in administration, gaining synergy through the use of shared media and services, which will permit the channelling of resources for innovation and extension of the services; in fourth place, to introduce Intelligent Corporate Management of the information and data, which will allow for capitalization of this asset by improving bureaucratic efficiency for the good of the citizens by guaranteeing the protection of their digital identity; and finally, to adopt a corporative strategy on the security and user-friendliness of the digital public services in order to increase people's confidence in them and promote their use.

The main objective is that by the year 2020 the Spanish Civil Service will be digital (Ministry of Economy, 2015):

“In such a way that the information and communication technologies are so integrated into the organization that the citizens and companies will prefer electronic access for transactions with the Civil Service as it is simpler and more intuitive, there is smooth collaboration with the interested agents in order to offer an integral service to the citizen, it will promote continuing innovation and transparency in administrative processes, which will create internal efficiency and increase the productivity of civil servants”.

Outstanding among the principles of the Digital Strategy are services to the citizen, where it is necessary to “redefine the services beginning on the user's side, whether he/she be either a private citizen or a civil servant, with a vocation for accessibility, usability, simplicity and security” (Ministry of Economy, 2015). This principle is becoming clear in different lines of action based on “Improvement of user satisfaction in the use of digital public services”. The objective is that citizens and companies will prefer to make use of public services on Internet, instead of going in person to the Administration offices, and that civil servants will prefer to use digital means to carry out their missions. The opinion of both parties must be recognized and indicators must be established to find out their level of satisfaction in order to respond correctly to their demands.

In view of this objective, the current reality is far from these goals, but there are some glimpses of progress in this line.

### **3.2.3. The elderly, ICT and Internet. Progress at its own pace**

The social change brought about by the development of ICT's and specifically of Internet has changed how we exercise our rights as citizens, our role as consumers and even our social relations. One relevant –not merely numerous- and vulnerable segment of society, the older generation, have had to accept this change is a stage in their lives when their resources are more limited. It is

indispensable to know what access and use they make of ICT's and Internet in order to *a posteriori* understand why they do so.

According to the INE (2015b), in its Survey on Equipment and Use of Information and Communication Technologies in Homes, 73.8% of the population between 16 and 74 years old have used a computer in the last three months, this is approximately 25.5 million people and shows a growth rate of 0.5 points compared to the previous year. Regarding the use of Internet, over 27.1 million people, 78.7% of the population between 16 and 74, have used Internet in the last three months. This figure is 2.5 points higher than the previous year. 84.8% of these surfers say that they have used some type of mobile device to access Internet outside their homes or workplaces, and 83% have accessed on a mobile phone. The use of smartphones for Internet connection is a growth area in comparison with the previous year, with an increase of 5.9 points. The data reflect an upsurge in the use of ICT's and Internet. This means that their use, as was to be expected, is on the rise and that the elderly are being incorporated into this social change little by little.

However, more specific studies on the elderly, ICT's and Internet reflect more detailed data depending on the age group. So, according to a study carried out by the General Foundation of the University of Salamanca on the Economics of Aging (Muñoz-Gallego, González-Benito & Garrido-Morgado, 2015), while most people under 60 years of age use a smartphone, only slightly over half older people use one, and this use drops to 38% in the case of people over 75. For people under 60 having a computer is linked to having a smart phone, but for the over-60s the use of smartphones drops more quickly with an increase in age than the use of computers. Regardless of what equipment they have, it is used regularly (several days a week or every day) by the under-60s (90%) and only by 56% of those who are over 60, which is a drop of over 34 percentage points difference between one age group and the next; this drop increases mainly from the age of 66. 57% of people over 75 years of age never use an electronic device, while those between the ages of 25 and 29 use practically all those that exist. This is partly due to a lack of availability of equipment, as, on average, 26.3% of the over-60s have neither a computer nor a smart phone nor a tablet; this percentage rises to 29.25% between the ages of 71 and 75, and 42% at 75 or older. In contrast, those who have all three devices are 55.6% and 23% of people under 60 and over 60, respectively. This data leads us to think that on reaching a certain age the use of Internet and the technologies drops, or that the people who are currently in this age group have not had the time or enough ability to adapt to this new progress.

There are not very many comparative studies, but that carried out by González-Oñate, Fanjul-Peyró and Cabezuelo-Lorenzo (2015) among older people in the UK, France and Spain, show that the elderly population in Spain has adapted the least well to the use of the new technologies and that this situation has mainly been brought about by the limited training and education which the older generation have had in the ICT area.

The work by Poveda-Puente, Pinazo-Hernandis, Pérez-Cosín and Belda-Lois (2015), "Older habitual users of information and communication technology: a profile analysis", is one of the few which analyses the characteristics of the older habitual ICT users. To do so, they investigated the type of equipment older users have available, its use and the level of importance they give to it,

differentiating this information by age groups, levels of education and sex. The results show greater use in comparison with other works of reference, although the general standards of use follow similar patterns; the younger people (the sample begins with 50-year-olds) show the most interest and greater use. The use of computers has moved from social centres to the homes themselves which shows greater competence and independence among older people in comparison with earlier research. In addition, the use of mobile phones has become generalized, and there is a rise in the use of Internet and participation in online social networks. “The sample analyzed represents a new profile of older people, a subgroup which is growing in number and shows differences compared to the older population group which has a more traditional profile as regards the level of equipment and use of ICT’s” (Poveda-Puente, Pinazo-Hernandis, Pérez-Cosín & Belda-Lois, 2015: 56).

“88.6% of those who have a computer are Internet surfers. 64% of them have been found to use Internet daily. Regarding the use they make of the computer, one in two use it to consult Internet; and among the Internet users there is a noteworthy eye high percentage use email, consult websites, carry out administrative transactions and use the social networks (Facebook, Twitter, MySpace). Many people use all the services of their mobile phone from checking their mail to taking photographs. Our results are much higher than those found in previous studies.”

According to the study, “Older people and digital use (Internet)” (Barómetro Mayores UDP, 2015: 2), among the older adults who state they are Internet users, nine out of ten use it to keep up to date, to read the press, news, documents, etc. (89.2%); this is the activity that most older people carry out. However, half of them use Internet for both banking activities (51.1%) and administrative ones (47.0%). The activity that the older generation does least is online shopping, although four of every 10 do so (39.2%). Regarding the Civil Service, seven out of 10 older people state that personal attention is what they prefer when carrying out transactions with officialdom (70.0%). In second place, but with a much lower percentage, is attention by telephone (15.0%). Only 7.7% state that they prefer Internet for this type of transaction (2015: 5).

In relation to this study, an analysis of the use of Internet with the different classification variants establishes the principle characteristics of the older Internet users and of the non-users. Accordingly, the percentage of Internet users registered for some of these activities is significantly higher amongst men (38.9%), the under-75’s (39.6%) and those with high spending power (39.3%) than what is registered amongst women (15.4%), the over-75’s (12.3%) and those with average spending power (21.4%) respectively, in all cases it is significantly higher than the older group as a whole (25.4%). Therefore, the standard profile of Internet users in the older generation is mainly men in the youngest section of the group with high spending power.

Among the most innovative proposals, Díaz-Prieto and García-Sánchez (2015) suggest the production of a survey which would gather information on the use and difficulties in access and usage of Internet among the elderly, together with their relationship with different psychosocial variants by means of the online survey “Internet and the Older Generation (INMA)” (Díaz-Prieto & García-Sánchez, 2015).

There is a clear difference in the use of Internet and the ICT's amongst the elderly and the other segments of the population; however, it must be said that a high percentage of older people make use of these resources in their everyday lives.

#### **3.2.4. The elderly and e-Administration**

The aging of the population of Spain is clear in the data from the most recent census carried out by the INE (2015a), where, of the total population of Spain (42,019,525), those over 65 make up 19.96% (8,347,513), and there are 2,731,560 people over 80 which is 6.5% of the total of the population of Spain.

This fact is confirmed by comparing with the data from 2001, when the number of people over 65 made up 17% of the population, of whom 13.2% were between the ages of 65 and 79, and the over-80s were 3.9% of the population. In 2011, in spite of the total population increase of almost 6 million compared to the previous decade, the percentage of people between 65 and 79 only rose 0.3 points, while the percentage of people over 80 rose 1.3 percentage points.

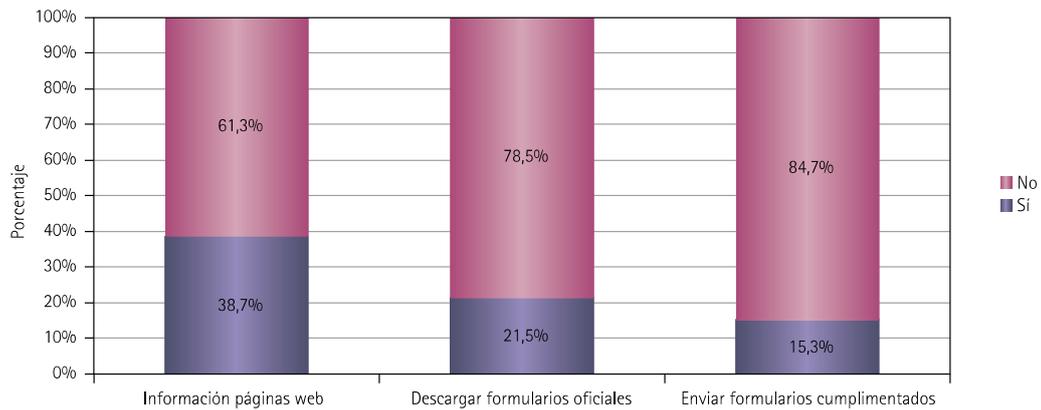
In the face of this situation, and based on the ubiquity of ITC's in people's lives, we propose the need to discover the best way of presenting ITC's to this age group and to find the optimum way in which the older generation can benefit from ITC's to improve their personal and social status (Abad-Alcalá, 2016). The effects of this population aging in the area of information and communication technologies is evident, as the use of the services and resources the knowledge society offers is a growth area, especially for the older age group, who in many cases have psychophysical and social constraints which may be alleviated by means of the ICT's. In this sense, the use of e-administration becomes a key element in the process of breaking down the generational digital divide.

A first approach to the use of e-administration by the older generation is a study carried out by the INE in 2012, which shows the degree of generational divide in this area for the elderly. As we can verify, the main use of e-administration is linked to the search for information on websites, which is carried out by 38.7% of the total. In addition, we see that the downloading of official forms is only carried out by 21.5% while the percentage of older people who send in these completed forms drops to 15.3%. This seems to indicate a fall in the activities related with the Civil Service dependent on the skills needed to interact with officialdom.

On analysing the relationship of the older generation with e-administration in the latest INE survey of the total people who have used Internet in the last 12 months, 63.4% have contacted the Civil Service or public services by Internet during this period for private reasons, while only 39.7% of people between the ages of 65 and 74 have done so. The main reasons were to obtain information from the Civil Service websites (35.9%); to download official forms (25.1%), or to send in completed forms (20.3%). If we refer to the reasons why this age group claims it does not send in completed forms to the Civil Service when they need to submit them, the first reason is because someone else processed it on Internet on their behalf (43.2%), lack of skills or knowledge (32.1%), concern regarding the protection or security of personal data (14.7%), because they did not have an

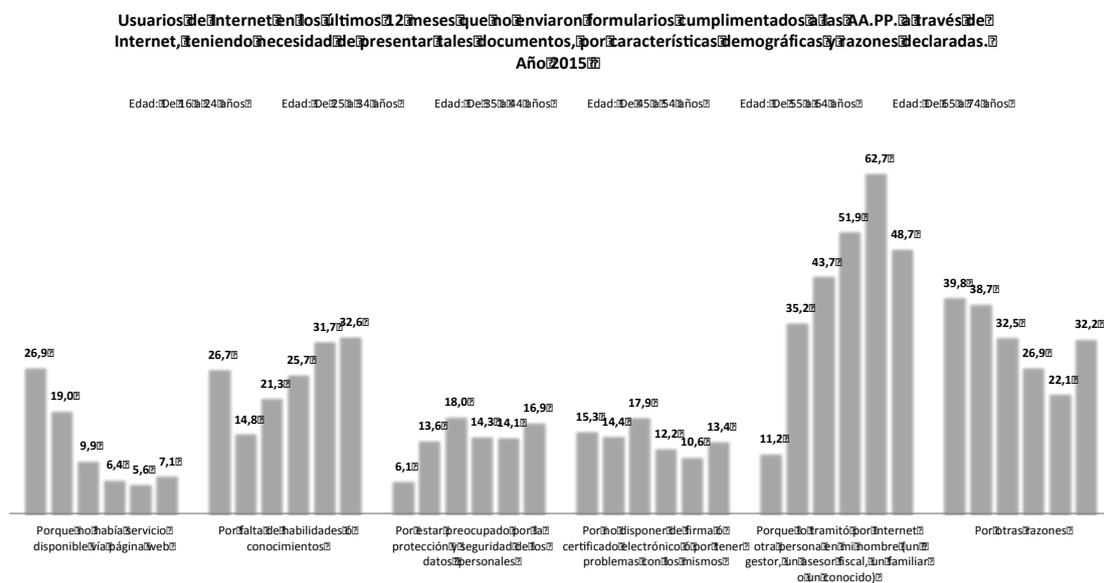
electronic signature or certificate (14.6%) and because there was no service available online (0.9%) (INE, 2015).

**Image 3. Older people who have used Internet to interact with the Civil Service in the last three months.**



Source: INE (2012).

**Image 4. Internet users' practices and CS forms**



Source: INE, 2015.

Another of the aspects which may be assessed and which is noteworthy in reference to a generational digital divide refers to those Internet users who did not send completed forms to the Civil Service when they needed to submit such documents and the reasons they gave for not doing so. The main reason claimed by all age groups is, “Because someone else processed it on Internet on my behalf” with percentages of 63.7% in ages between 55 and 64, of 51.9% in the 45 to 54 age group, and 48.7% between the ages of 65 and 74. So we can see that the oldest age group is not the majority amongst those who use this reason. But they are the majority when the reason claimed for not submitting documentation to the Civil Services is the “Lack of skills or knowledge” (32.6 %). For none of the other reasons given is the older age group a majority.

The scientific literature on e-administration and the elderly is not particularly exhaustive, although we can find some studies such as that by Ebbers, Pieterse and Noordman (2008) proposed strategies for the use of diverse communication channels by the Civil Service depending on the type of paperwork the citizen wishes to use. Or, specifically on the experience in one particular country, we find Colesca and Dobrica (2008), who confirm, among other conclusions, the infrequent use of e-administration by the older generation but do not analyse the reasons. One study which confirms most of our starting hypothesis is that carried out by Bélanger and Carter (2009) clearly state that the pre-existing digital divide based on criteria such as race, income, studies or age increases when it is linked with the use of digital administration. This study confirms our hypothesis although it does not analyse the reasons or propose solutions, which is the objective of our research. They go so far as to consider that e-administration means another technical innovation from which certain members of society are excluded. Another study which supports our working hypothesis is that carried out by Phang, Sutanto, Kankanhalli, Li, Tan and Teo (2006), which mentions some aspects which condition the uses of e-administration services, such as security, the promotion of self-fulfilment and the assumption of successful usage or efforts to mitigate so-called “technological anxiety”. In addition, we have found two studies which propose the features which should exist in official websites in order to be “user-friendly” for the older generation. Becker (2005), amongst other negative elements for the promotion of e-administration by older people, sets out the following points: advertisements on websites have a very negative impact on the older user, the visible difference between links which have been used and those which have not should be clear, the existence of search engines is helpful, the need to use the mouse with great precision is a disincentive, the importance of the size of the font, the scroll must not be overly extensive, background images with drawings have a negative impact on older people, the time spent downloading from the web is another discouraging factor for the elderly who do not usually have very speedy Internet connections. Besides, Lara-Navarra and Martínez-Usero (2002) set out 10 good practices for the development of user-friendly websites. On the quandary of e-administration in the European area, the only studies that exist are more linked to specific aspects of electronics than to the accessibility of their services by older people (González-Crespo & Sanjuán-Martínez, 2010, or Fernández-Ecker, 2010).

In short, the different studies and reports reflect a use of e-administration services, but this use is not satisfactory. They do reflect an increase of same, but this is to be expected, due to the obligation of carrying out many procedures online. What is needed, then, is a satisfactory, efficient and effective service, which must not be a necessary evil.

#### 4. Discussion and conclusions

The capacity of a group to control the exercise of their rights as citizens is fundamental in an advanced society, particularly if the group is a vulnerable one. The term ‘empowerment’ appears to reflect this situation which has arisen mainly due to the development of ICT’s and Internet.

Empowerment is a multidimensional term (Rodríguez-Beltrán, 2009) which may be addressed from different perspectives. In general, it has been defined as a set of mechanisms which allow people to control their own lives (Silva & Martínez 2004: 30). Zimmerman (1990) qualifies this by stating that empowerment refers to the development of personal control with changes in self-perception, confidence, individual capacity and skills to negotiate and influence decision-making processes (Rowlands, 1997).

With reference to the possibilities for independence and control which Internet offers to the older generation, the web gives multiple options for the empowerment of the elderly. In fact, Del-Prete, Gisbert-Cervera and Camacho-Martí (2013) show that the ability to develop the necessary skills to make a rational use of Internet becomes a stimulus for this group to continue learning. In this sense, we must recognize that the New Information Technologies open novel gateways for exchange, social participation and decision-making among older people (Del-Prete, Gisbert-Cervera & Camacho-Martí, 2013).

Nevertheless, although the elderly are aware of the potential of Internet in different areas of their everyday life, they are relatively sceptical regarding the real role it plays in controlling their lives (Sanders, Sánchez-Valle, Viñarás & Llorente, 2015).

The web provides older people with interesting opportunities which contribute to their active aging by assisting them in optimizing their daily customs (Llorente-Barroso, Viñarás-Abad & Sánchez-Valle, 2015).

The mere use of the web proves a proactive attitude among senior citizens, who see Internet as a compendium of very useful resources in many facets of their lives. This perception promotes the web as a key tool for the empowerment of the old, given that it allows them to develop controls over their lives thanks to its many different possibilities.

Administrative operations online and e-commerce are extremely useful for people with limits of mobility or restrictions of any kind caused by health problems (Miranda-De-Larra, 2004: 18; Agudo-Prado, Pascual-Sevillano & Fombona-Cadavieco, 2012: 198). In this area, Internet has simplified some habits for the elderly in this situation, as it allows them to carry out economic and administrative tasks easily at a distance. Thus, older people may find that Internet is an ally with its e-commerce and online management. Among the processes carried out online by people of advanced years, the following are the most frequent (Llorente-Barroso, Viñarás-Abad & Sánchez-Valle, 2015: 33-34):

- a) They submit their Income Tax Returns.

- b) They manage bills and bank accounts.
- c) They request appointments and remark on the ease and convenience of doing so online compared to the traditional way in person.

The bureaucratic, administrative and commercial potential of the web facilitates the agile development of everyday activities for the elderly. Frequently, solving this type of problem online is a challenge for them, but when they become accustomed they feel proud and pleased with themselves. In that regard, Internet is not only convenient, but also allows them to solve problems and deal with tasks that some people could not do due to physical constraints. In this way, Internet offers independence which favours their empowerment.

As a final conclusion, the need to bring together parallel paths, that of the Civil Service as a public service with the same advantages for all citizens, and that of the older generation who see the possibilities but also the limits in the exercise of their rights, is unresolved. We believe it is necessary to continue working to bridge the gap tween needs and to offer solutions regarding e-administration and the elderly.

**\*Funded research.** [This article is a product of the activities of the Programme on Digital Vulnerability PROVULDIG \(S2015/HUM3434\), funded by the Comunidad de Madrid and the European Social Fund \(2016-2018\) and the Project “Personas mayores, e-commerce y administración electrónica: hacia la ruptura de la tercera brecha digital” \(CSO2015-66746-R\) funded by the Dirección General de Investigación Científica y Técnica of the Ministry of Economy, Industry and Competitiveness as part of the VI National Plan for R & D.](#)

## 5. References

L Abad-Alcalá (2016): *Brecha digital y personas mayores. Informe sobre el uso de las TIC y valoración de la formación en nuevas tecnologías*. Madrid: CEU Ediciones.

L Abad-Alcalá (2014): “Diseño de programas de e-inclusión para alfabetización mediática de personas mayores”. *Comunicar* 42, 173-180. DOI: 10.3916/C42-2014-17

S Agudo-Prado, MA Pascual-Sevillano & J Fombona-Cadavieco (2012): “Usos de las herramientas digitales entre las personas mayores”. *Comunicar* 39, 193-201. DOI: 10.3916/C39-2012-03-10.

K Ala-Mutka, N Malanowski, Y Punie & M Cabrera (2008): *Active Ageing and the Potential of ICT for Learning. Institute for Prospective Technological Studies (IPTS)*. Joint Research Centre (JRC), European Communities. DOI: 10.2791/33182

T Aalbers, MAE Baars & MGM Olde-Rikkert (2011): “Characteristics of effective Internet-mediated interventions to change lifestyle in people aged 50 and older: a systematic review”. *Ageing Research Reviews* 10, 487-497. DOI:10.1016/j.arr.2011.05.001

Barómetro Mayores UDP (2015): *Las Personas Mayores y el uso digital (Internet)*. Madrid: Imsero (Instituto de Mayores y Servicios Sociales):  
<http://www.mayoresudp.org/wp-content/uploads/2015/01/Bar%C3%B3metro-Brecha-digital.pdf> (02-12-2016 = fecha de la consulta)

SA Becker (2005): “E-government usability for older adults”. *Communications of the ACM* 48(2), 102-104. DOI: 10.1145/1042091.1042127

F Bélanger & L Carter (2009): “The impact of the digital divide on e-government use”. *Communications of the ACM* 52(4), 132-135. DOI: 10.1145/1498765.1498801

RH Binstock, JR Fishman & TE Johnson (2006): “Antiaging Medicine and Science: Social Implications”. En VVAA, *Handbook of Aging and the Social Sciences* (Eds., RH Binstock & LK George) (pp. 434-453). New York: Academic Press.

SE Colesca & L Dobrica (2008): “Adoption and use of e-government services: the case of Romania”. *Journal of Applied Research and Technology* 6(3), 204-217:  
<http://www.revistas.unam.mx/index.php/jart/article/view/17623/16802> (04-12-2016 = fecha de la consulta)

A Del-Prete, M Gisbert-Cervera & MM Camacho-Martí (2013): “Las TIC como herramienta de empoderamiento para el colectivo de mujeres mayores. El caso de la comarca del Montsià (Cataluña)”. *Pixel-Bit. Revista de Medios y Educación* 43, 37-50. DOI: 10.12795/pixelbit.2013.i43.03

C Díaz-Prieto & JN García-Sánchez (2015): “Internet en Mayores (INMA)”. *Revista Infad de Psicología* 2(1). DOI: 10.17060/ijodaep.2015.n1.v2.41

WE Ebbers, WJ Pieterse, & HN Noordman (2008): “Electronic government: Rethinking channel management strategies”. *Government Information Quarterly* 25(2),181-201. DOI: 10.1016/j.giq.2006.11.003

Eurostat (2013): *Use of internet for access to information and learning purposes, by age group, EU-28, 2013*: [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Use\\_of\\_internet\\_for\\_access\\_to\\_information\\_and\\_learning\\_purposes\\_by\\_age\\_group\\_EU-28\\_2013\\_\(%25\\_of\\_internet\\_users\)4.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Use_of_internet_for_access_to_information_and_learning_purposes_by_age_group_EU-28_2013_(%25_of_internet_users)4.png) (02-12-2016 = fecha de la consulta)

Eurostat (2016), *Glossary: E-Government*, <http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-government> (02-12-2016 = fecha de consulta)

A Fernández-Ecker (2010): “Constitución telemática de empresas”. *Noticias de la Unión Europea* 310, 73-77.

R González-Crespo & O Sanjuán-Martínez (2010): “La Web 3.0 al servicio de las personas discapacitadas auditivas mediante las pautas de accesibilidad 2.0. Sociedad y Utopía”. *Revista de Ciencias Sociales* 36, 153-172:  
[http://biblioteca2012.hegoa.efaber.net/system/ebooks/19373/original/Sociedad\\_y\\_utopia\\_36.pdf?1366289623](http://biblioteca2012.hegoa.efaber.net/system/ebooks/19373/original/Sociedad_y_utopia_36.pdf?1366289623) (02-12-2016 = fecha de la consulta)

C González-Oñate, C Fanjul-Peyró & F Cabezuelo-Lorenzo (2015): “Uso, consumo y conocimiento de las nuevas tecnologías en personas mayores en Francia, Reino Unido y España”. *Comunicar* 45, 19-28. DOI: 10.3916/C45-2015-02

T Hong (2006): “The influence of structural and message features on Web site credibility”. *Journal of Association for Information Science and Technology* 57(1), 114-127. DOI: 10.1002/asi.20258

Imsero (Instituto de Mayores y Servicios Sociales) (2009): *Las personas mayores en España. Datos Estadísticos Estatales y por Comunidades Autónomas. Informe 2008. Tomo I*: [www.imsero.es/InterPresent1/grou-ps/imsero/documents/binario/infppmm2008vol1.pdf](http://www.imsero.es/InterPresent1/grou-ps/imsero/documents/binario/infppmm2008vol1.pdf) (04-12-2016 = fecha de la consulta)

Imsero (Instituto de Mayores y Servicios Sociales) (2014): *Las personas mayores en España. Datos Estadísticos Estatales y por Comunidades Autónomas. Informe 2012*:  
<http://www.imsero.es/InterPresent1/groups/imsero/documents/binario/infoppmm2012.pdf> (04-12-2016 = fecha de la consulta)

INE (Instituto Nacional de Estadística) (2010): “Proyección de la Población de España a Largo Plazo, 2009-2049”. *Notas de Prensa*: <http://www.ine.es/prensa/np587.pdf> (02-12-2016 = fecha de la consulta)

INE (Instituto Nacional de Estadística) (2015a): *Resultados Nacionales. Utilización de productos TIC por las personas*: <http://www.ine.es/dynt3/inebase/es/index.htm?padre=2246&capsel=2250> (04-12-2016 = fecha de la consulta)

INE (Instituto Nacional de Estadística) (2015b): *Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares*: <http://www.ine.es/prensa/np933.pdf> (04-12-2016 = fecha de la consulta)

INE (Instituto Nacional de Estadística) (2012): *Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares*:  
<http://www.ine.es/dynt3/inebase/index.htm?type=pcaxis&path=/t25/p450/a2012/&file=pcaxis> (9-11-2016 = fecha de la consulta)

INE (Instituto Nacional de Estadística) (2016): *Equipamiento y uso de TIC en los hogares. Año 2016*:

[http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=estadistica\\_C&cid=1254736176741&menu=ultiDatos&idp=1254735976608](http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=estadistica_C&cid=1254736176741&menu=ultiDatos&idp=1254735976608) (4-12-2016= fecha de la consulta)

P Lara-Navarra & JA Martínez-Usero (2002): “Del comercio electrónico a la administración electrónica: tecnologías y metodologías para la gestión de información”. *El Profesional de la Información* 11(6), 421-435: <https://core.ac.uk/download/pdf/11880162.pdf> (02-12-2016 = fecha de la consulta)

E Liikanen (2003): *La administración electrónica para los servicios públicos europeos del futuro*. UOC: Lección inaugural del curso académico 2003-2004:

<http://www.uoc.edu/inaugural03/esp/article/#4.1> (04-12-2016 = fecha de la consulta)

C Llorente-Barroso, M Viñarás-Abad & M Sánchez-Valle (2015): “Internet and the Elderly: Enhancing Active Ageing”. *Comunicar* 45, 29-36. DOI: 10.3916/C45-2015-03

Ministerio de Economía (2015): *Plan de Transformación Digital*:

[http://administracionelectronica.gob.es/pae\\_Home/dms/pae\\_Home/documentos/Estrategias/Estrategia\\_a\\_TIC/20151002-Plan-transformacion-digital-age-oopp.pdf](http://administracionelectronica.gob.es/pae_Home/dms/pae_Home/documentos/Estrategias/Estrategia_a_TIC/20151002-Plan-transformacion-digital-age-oopp.pdf) (04-12-2016 = fecha de la consulta)

R Miranda-De-Larra (2004): *Los Mayores en la Sociedad de la Información: Situación Actual y Retos de Futuro*. Madrid: Fundación AUNA:

[http://www.pymesonline.com/uploads/tx\\_icticontent/R02090\\_mayores.pdf](http://www.pymesonline.com/uploads/tx_icticontent/R02090_mayores.pdf) (04-12-2016 = fecha de la consulta)

PA Muñoz-Gallego, O González-Benito & A Garrido-Morgado (2015): *Economía del envejecimiento*. Centro virtual sobre el envejecimiento (Fundación General de la Universidad de Salamanca):

[http://www.cvirtual.org/sites/default/files/site-uploads/docs/u28/file/web\\_estudio\\_economia\\_del\\_envejecimiento\\_.pdf](http://www.cvirtual.org/sites/default/files/site-uploads/docs/u28/file/web_estudio_economia_del_envejecimiento_.pdf) (02-12-2016 = fecha de la consulta)

CW Phang, J Sutanto, A Kankanhalli, Y Li, BCY Tan & HH Teo (2006): “Senior citizens’ acceptance of information systems: A study in the context of e-government services. IEEE Transactions On”. *Engineering Management* 4(53), 555-569. DOI: 10.1109/TEM.2006.883710

R Poveda-Puente, S Pinazo-Hernandis, JV Pérez-Cosín & JM Belda-Lois (2015): “Personas mayores usuarias habituales de tecnología de la información y la comunicación: Análisis del perfil”. *Azarbe, Revista Internacional de Trabajo Social y Bienestar* 4, 51-58:

<file:///C:/Users/Carmen/Downloads/229211-842431-1-PB.pdf> (02-12-2016 = fecha de la consulta)

- M Rodríguez-Beltrán (2009): “Empoderamiento y promoción de la salud”. *Red de Salud* 14, 20-31: <http://www.academia.cat/files/425-8234-DOCUMENT/empoderamientopsmrodriguez.pdf> (04-12-2016 = fecha de la consulta)
- JO Rowlands (1997): *Questioning Empowerment. Working with Women in Honduras*. UK & Ireland: Oxfam publication.
- K Sanders, M Sánchez-Valle, M Viñarás & C Llorente (2015): “Do we trust and are we empowered by “Dr. Google”? Older Spaniards’ uses and views of digital healthcare communication”. *Public Relations Review* 41(5), 794-800. DOI: 10.1016/j.pubrev.2015.06.015
- RA Settersten (2006): “Aging and the Life Course”. En VVAA, *Handbook of Aging and the Social Sciences* (Eds., RH Binstock & LK George) (pp. 3-19). New York: Academic Press. DOI: 10.1016/B978-012088388-2/50004-3
- N Shapira, A Barak & I Gal (2007): “Promoting Older Adults' Well-Being through Internet Training and Use”. *Aging & Mental Health* 11(5), 477-484.
- C Silva & ML Martínez (2004): “Empoderamiento: Proceso, nivel y contexto”. *Psykhé* 13(2), 29-39. DOI: 10.4067/S0718-22282004000200003
- K Slegers, MP Van-Boxtel & J Jolles (2007): “Effects of computer training and Internet usage on the well-being and quality of life of older adults: a randomized, controlled study”. *Educational Gerontology* 33, 91–110. DOI: 10.1080/03601270600846733
- R Tirado-Morueta, A Hernando-Gómez, R García-Ruiz, J Santibáñez-Velilla & I Marín-Gutiérrez (2012): “La competencia mediática en personas mayores. Propuesta de un instrumento de evaluación”. *Icono14* 10(3), 134-158. DOI: 10.7195/ri14.v10i3.211
- P Turner, SE Turner & G Van-De-Walle (2007): “How older people account for their experiences with interactive technology”. *Behaviour & Information Technology* 4(26), 287-296. DOI: 10.1080/01449290601173499
- European Commission (n.d.); *The Active and Assisted Living Joint Programme (AAL JP)*: <https://ec.europa.eu/digital-single-market/en/active-and-assisted-living-joint-programme-aal-jp> (04-12-2016 = fecha de la consulta)
- H Wandke, M Sengpiel & M Sönksen (2012): “Myths about older people's use of information and communication technology”. *Gerontology* 58(6), 564-70. DOI: 10.1159/000339104
- United Nations (2011): *World Population Prospects: The 2010 Revision, Volume I: Comprehensive Tables*:

[http://www.un.org/en/development/desa/population/publications/pdf/trends/WPP2010/WPP2010\\_Volume-I\\_Comprehensive-Tables.pdf](http://www.un.org/en/development/desa/population/publications/pdf/trends/WPP2010/WPP2010_Volume-I_Comprehensive-Tables.pdf) (04-12-2016 = fecha de la consulta)

United Nations (2013): *World Population Prospects: The 2012 Revision Highlights and Advance Tables*: [https://esa.un.org/unpd/wpp/publications/Files/WPP2012\\_HIGHLIGHTS.pdf](https://esa.un.org/unpd/wpp/publications/Files/WPP2012_HIGHLIGHTS.pdf) (04-12-2016 = fecha de la consulta)

B Xie & JM Bugg (2009): “Public library computer training for older adults to access high-quality Internet health information”. *Library & Information Science Research* 31(3), 155-162. DOI: 10.1016/j.lisr.2009.03.004

H White, E McConnell, E Clipp, LG Branch, R Sloane, C Pieper & TL Box (2002): “A randomized controlled trial of the psychosocial impact of providing internet training and access to older adults”. *Aging & Mental Health* 6(3), 213-221. DOI: 10.1080/13607860220142422

K Williamson & T Asla (2009): “Information behavior of people in the fourth age: Implication for the conceptualization of information literacy”. *Library & Information Science Research* 31, 76-83. DOI: 10.1016/j.lisr.2009.01.002

M Zimmerman (1990): “Taking action in empowerment research: On the distinction between individual and psychological conceptions”. *American Journal of Community Psychology* 18(1), 169-177. DOI: 10.1007/BF00922695

---

### How to cite this article in bibliographies / References

M Viñarás-Abad, L Abad-Alcalá, C Llorente-Barroso, M Sánchez-Valle, M Pretel-Jiménez (2017): “e-Administration and the e-inclusion of the elderly”. *Revista Latina de Comunicación Social*, 72, pp. 197 to 219. <http://www.revistalatinacs.org/072paper/1161/11en.html>  
DOI: [10.4185/RLCS-2017-1161](https://doi.org/10.4185/RLCS-2017-1161)

Article received on 7 January 2016. Accepted on 19 February.  
Published on 23 February 2017.