Universal Service in a Broader Perspective: The European Digital Divide

María Concepción GARCÍA-JIMÉNEZ, José Luis GÓMEZ-BARROSO
Dpto. Economía Aplicada e Hª Económica
Universidad Nacional de Educación a Distancia (UNED)
Pº Senda del Rey, 11. 28040 Madrid (Spain)
cgarcia253@alumno.uned.es, jlgomez@cee.uned.es

Ensuring universal service is a top objective in many countries in order that all the citizens can have access basic communications services. Although the ICT equipment in households and its usage by individuals are essential prerequisites for benefiting from ICTs, the situation in the European Union is far from uniform. This article provides a description of the European information society development scenario using the values reached by the member states in a set of indicators selected for measuring said progress in households. Two tools are used for providing a broader perspective of the digital divide: a composite index and the cluster analysis. Below, a study is provided on what variables are relevant for interpreting the situation that is presented.
Keywords: *Information society, digital divide, universal service, European Union, ICT.*

1 Introduction

Universal service is the figure guaranteeing individual access to all citizens to those services which are considered basic (at present, essentially, the fixed telephone network). However, access is just one of the variables that determine the width of the digital divide. Adoption is the other one.

An adequate infrastructure is a *sine qua non* condition for usage but communications technology is not an end in itself, but a means of supplying quality content in the Information Society. There are groups which, despite having access to the infrastructure, do not use it. Clearly, the digital divide will not close itself by focusing exclusively on providing access. Knowing how to obtain benefits from these technologies is determined by the experiences and opportunities amassed in the past and offered in the present, and it is obvious that not even here do we find everyone under the same conditions. As a matter of fact, more than digital *divide*, we should talk about digital *divides*. The disparities can be found in any categorization, regardless of the parameter selected being of a social, economic, cultural or spatial nature [1], [2].

Inside Europe, the availability and affordability of communication services, as well as the skills and knowledge needed to make the most of the opportunities their usage can generate, draw digital divides between regions as well as within countries. The European Commission has requested specific studies and publishes reports which assess in detail what the situation of different indicators (notably, broadband deployment) is in the different member states [3], [4], [5], [6]. However, no report has been published stating any national comparisons from broader perspectives, combining the various aspects of the digital divide.

That is precisely the purpose of this contribution. For this, after presenting a set of indicators chosen for carrying out the measurement of the progress of the information society in the European Union, the value achieved by the households of the member states in these classifications is detailed. The simple knowledge of over ten values does not facilitate obtaining any precise relative country situation images. As a consequence, two tools are used for providing a global perspective: the preparation of a composite index and the cluster analysis. Next, a statistical analysis defining what socio-economic, demographic or cultural variables affect the scenario described in the previous section is provided. The conclusions close the contribution.

2 The Situation in the EU 27 Countries in View of the Information Society: Indicators Selected

ICT equipment and the adoption of it are essential prerequisites for benefiting from ICTs so the indicators showing the extent of that equipment in households and the usage of it by individuals are therefore an obvious starting point [7].

Ten are the indicators chosen for describing the different degrees of progress of the knowledge

society in the 27 member states of the European Union households. A set of four indicators is related to ICT equipment such as the percentage of households having access to a computer or internet. We also included three indicators related to the use of said equipment by individual such as the percentage of individual using a computer, using the internet or buying good or services over the internet in the last three months. Moreover, three indicators took into account the interaction with the government by individuals such as percentage of individuals using internet for downloading official forms or sending filled forms in the last three months.

In order to ease the comparisons, the indicators have been converted into relative values; thus, the average of the EU 27 corresponds to a 100 point value. Subsequently, in each block a new value "Value_ICT" has been defined. This is the average of the indicators making up the block. Table 1 shows the list of indicators included in each of the blocks.

Table 1. Grouping into blocks of the information society progress indicators

BLOCK	INDICATOR
BLOCK A: HOUSEHOLDS EQUIPMENT	Households having access to a computer(A_COM)
	Households having access to the Internet (A_INT)
	Households with broadband access (A_BA)
	Households having access to, via one of its members, a mobile phone (A_TM)
BLOCK B: ADOPTION BY INDIVIDUALS	Individuals using a computer (in the last three months) (B_COM)
	Individuals using the Internet (in the last three months) (B_INT)
	Individuals ordering goods or services, over the Internet, for private use (in the last three months) (B_BUY)
BLOCK C: USE OF eGOVERNMENT BY INDIVIDUALS	Individuals using the Internet for obtaining information from public authorities web sites (in the last three months) (C_OBT)
	Individuals using Internet for downloading official forms (in the last three months) (C_DOW)
	Individuals using Internet for sending filled forms in the last three months (C_SEN)

2.1 Household equipment (Block A)

Block A measures the ICT equipment in households. Table 0 shows that twelve countries present a value above 100. Netherlands leads the list, with 56.21 points above average. On the opposite end is Romania, the country that closes the classification with 60.80 points below average.

Table 2. Value of the indicators in Block A

Position	Member state	Households having a computer	Households having Internet	Households with broadband access	Households having a mobile phone	VALUE_ICT BLOCK A
1	NETHERLANDS	133.33	163.27	220.00	108.24	156.21
2	DENMARK	141.67	161.22	210.00	109.41	155.58
3	SWEDEN	136.67	157.14	170.00	111.76	143.89
4	FINLAND	118.33	132.65	176.67	114.12	135.44
5	LUXEMBOURG	128.33	142.86	146.67	110.59	132.11
6	UNITED KINGDOM	118.33	128.57	146.67	105.88	124.86
7	GERMANY	128.33	136.73	113.33	101.18	119.89
8	BELGIUM	95.00	110.20	160.00	100.00	116.30
9	MALTA	101.67	108.16	133.33	102.35	111.38
10	SLOVENIA	108.33	110.20	113.33	105.88	109.44
11	AUSTRIA	111.67	106.12	110.00	105.88	108.42
12	ESTONIA	86.67	93.88	123.33	102.35	101.56
13	SPAIN	95.00	79.59	96.67	103.53	93.70

14	FRANCE	93.33	83.67	100.00	95.29	93.08
15	IRELAND	98.33	102.04	43.33	105.88	87.40
16	LATVIA	68.33	85.71	76.67	100.00	82.68
17	PORTUGAL	75.00	71.43	80.00	101.18	81.90
18	ITALY	80.00	81.63	53.33	109.41	81.09
19	HUNGARY	83.33	65.31	73.33	98.82	80.20
20	CYPRUS	86.67	75.51	40.00	107.06	77.31
21	POLAND	75.00	73.47	73.33	87.06	77.22
22	LITHUANIA	66.67	71.43	63.33	94.12	73.89
23	CZECH REPUBLIC	65.00	59.18	56.67	101.18	70.51
24	SLOVAKIA	83.33	55.10	36.67	100.00	68.78
25	GREECE	61.67	46.94	13.33	92.94	53.72
26	BULGARIA	35.00	34.69	33.33	75.29	44.58
27	ROMANIA	43.33	28.57	16.67	68.24	39.20

Figure .1 shows the maximum and minimum values for each of the indicators in the block. With the exception of the mobile telephony indicator, the remaining ones show a variation between countries exceeding 100 points. The differences in Internet access and, particularly, in the number of broadband connections are enormous, with distances between the leading and last country of 134.69 and 206.67 points, respectively. The number of households where there exists at least one mobile phone varies in only 45.88 points, a fact which is explained by the almost universal acceptance of mobile phones as basic tools. Additionally, once the revision of the remaining blocks referring to households is completed, it will be possible to prove that the possession of a mobile phone is the variable with less range of variation of the whole set of indicators while broadband connections is the one that presents the highest difference between the extreme values.

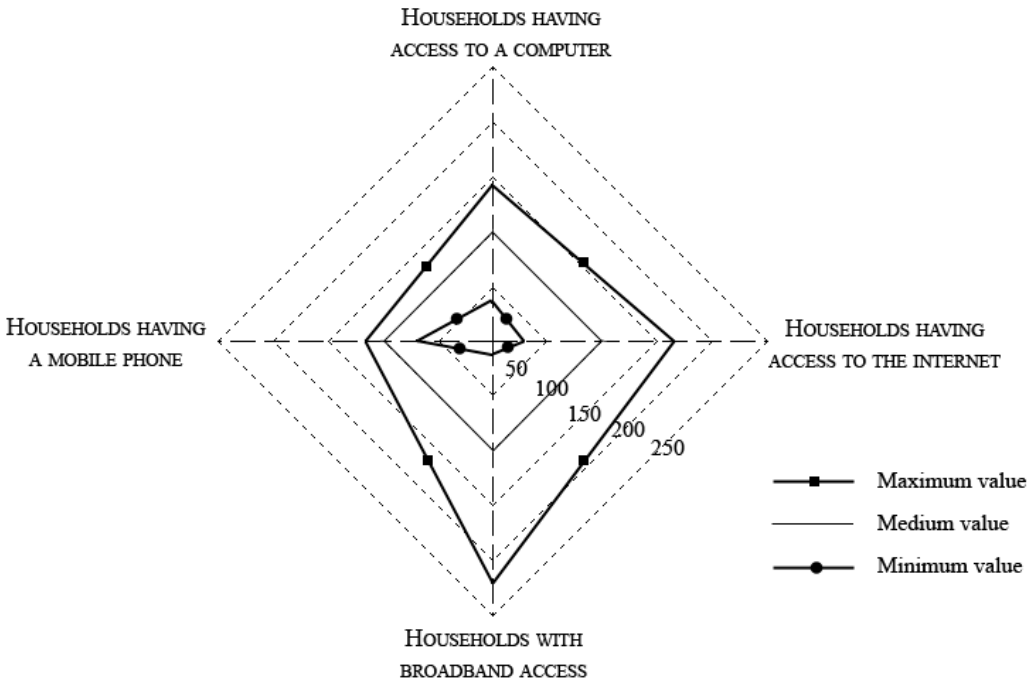

Fig. 1. Difference between the maximum and minimum value of the indicators in Block A

2.2 Adoption of new technologies by individuals (Block B)

Block B measures the individual usage of new technologies. The comparison of tables 1 and 0 shows that nine out of the ten countries above average in adoption have the same situation as regards equipment. The exception is Ireland, whose position in Block A is slightly below

average. In the opposite situation are Estonia, Slovenia and Malta whose usage values are below 100 despite their equipment indicators being above average. The remaining fourteen countries show values under 100 in both classifications, with Greece, Bulgaria and Romania in the three last positions for both cases. Malta is the member state that less advantage takes of their equipment since they present the greatest deficit in the equipment-usage comparison. Also with important deficits are Slovenia, Portugal, Italy and Cyprus. On the opposite sign (better usage rate than equipment rate), the classification is led by Germany, Sweden and United Kingdom.

Table 3. Value of the indicators in Block B

Position	Member state	Individuals using a computer	Individual using the Internet	Individuals ordering goods or services over the Internet	VALUE_ICT BLOCK B
1	SWEDEN	147.46	165.38	195.00	169.28
2	NETHERLANDS	142.37	155.77	180.00	159.38
3	DENMARK	145.76	159.62	155.00	153.46
4	GERMANY	128.81	132.69	190.00	150.50
5	UNITED KINGDOM	123.73	126.92	190.00	146.88
6	LUXEMBOURG	128.81	136.54	175.00	146.78
7	FINLAND	135.59	148.08	145.00	142.89
8	AUSTRIA	115.25	117.31	115.00	115.85
9	BELGIUM	113.56	119.23	70.00	100.93
10	IRELAND	98.31	98.08	105.00	100.46
11	FRANCE	93.22	90.38	95.00	92.87
12	ESTONIA	105.08	117.31	20.00	80.80
13	SLOVENIA	96.61	98.08	40.00	78.23
14	SLOVAKIA	103.39	96.15	35.00	78.18
15	SPAIN	91.53	92.31	50.00	77.94
16	LATVIA	89.83	96.15	25.00	70.33
17	CZECH REPUBLIC	88.14	84.62	35.00	69.25
18	POLAND	81.36	76.92	45.00	67.76
19	HUNGARY	91.53	86.54	25.00	67.69
20	MALTA	72.88	73.08	45.00	63.65
21	LITHUANIA	79.66	80.77	10.00	56.81
22	ITALY	72.88	69.23	25.00	55.70
23	PORTUGAL	71.19	69.23	25.00	55.14
24	CYPRUS	74.58	65.38	25.00	54.99
25	GREECE	64.41	55.77	15.00	45.06
26	BULGARIA	50.85	46.15	10.00	35.67
27	ROMANIA	50.85	40.38	5.00	32.08

Figure .2 shows the differences between first and last in the order established for each indicator. The distance in the usage of computers is similar, slightly less, than the difference in their ownership as shown in figure 1 (computer usage varies in 96.61 points as opposed to the 106.67 points in which their ownership varies). The same occurs with Internet usage (125 points of distance in usage as opposed to 134.69 points in the existence of connection). Last, the indicator for purchases via the Internet separates Sweden from Romania in none less than 190 points. In this last indicator an almost bipolar situation can be seen, since a great number of states (sixteen) present values below or equal to 50 points while six countries exceed 150 points.

2.3 Interaction of households with the government (Block C)

Block C measures the degree of interaction of households with the government through the Internet. The values are presented in table 0.

Here, thirteen countries present an above average situation. Of the thirteen, six are in the same

situation both as regards equipment and adoption (Netherlands, Denmark, Sweden, Finland, Luxembourg, Austria and Slovenia). More specifically, Netherlands and Sweden, who hold the first and third positions in this block, also appear in the podium of the two previous classifications. On the other hand, Portugal, France, Slovakia and Spain, who did not reach the average values neither in equipment nor adoption, do appear in this block within the group of those exceeding the average 100 value.
In the last four positions of the table are the three last countries in the equipment and usage blocks (Bulgaria, Greece, Romania) alongside the United Kingdom. The performance of the latter in this classification contrasts with its sixth and fifth positions in blocks A and B, respectively.

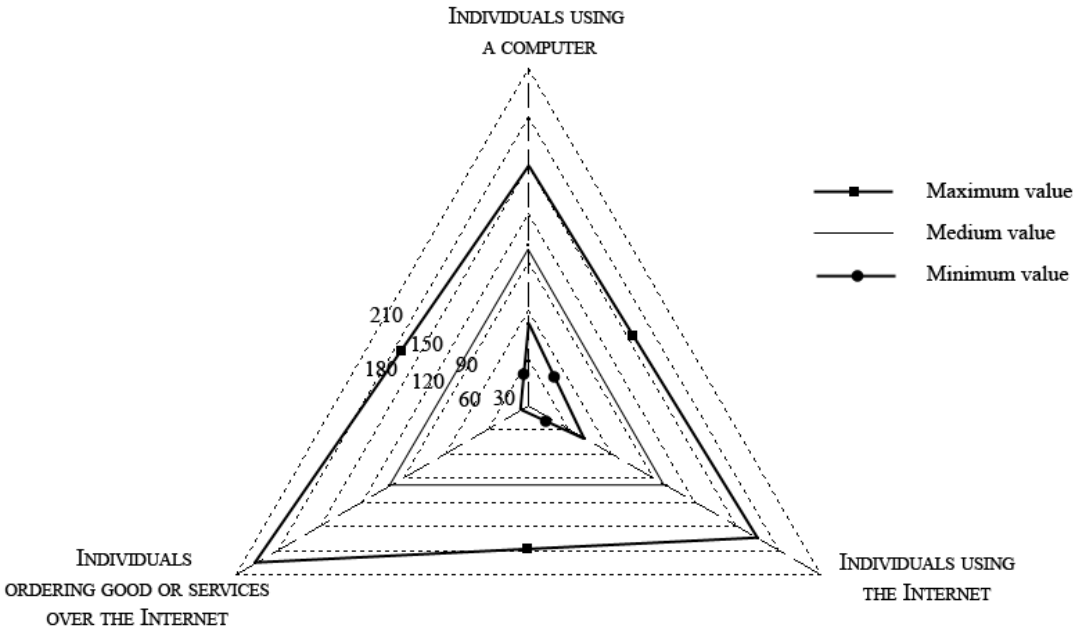

Fig. 2. Difference between the maximum and minimum value of the indicators in Block B

The distances between countries in this Block C are important, with the separation growing as the complexity of the operation to be carried out with the government increases.

Table 4. Value of the indicators in Block C

Position	Member state	Individuals obtaining information	Individuals downloading forms	Individuals returning filled forms	VALUE_ICT BLOCK C
1	NETHERLANDS	139.56	132.68	219.76	164.00
2	LUXEMBOURG	125.80	191.73	146.11	154.55
3	SWEDEN	146.93	148.43	157.49	150.95
4	IRELAND	102.70	146.46	167.66	138.94
5	PORTUGAL	96.81	118.50	193.41	136.24
6	FRANCE	127.76	120.08	150.90	132.91
7	FINLAND	128.75	146.46	116.17	130.46
8	ESTONIA	106.88	111.42	167.07	128.45
9	AUSTRIA	116.22	142.91	118.56	125.90
10	SLOVAKIA	135.14	132.28	87.43	118.28
11	SLOVENIA	135.14	134.25	74.25	114.55
12	DENMARK	116.71	95.28	122.16	111.38
13	SPAIN	121.38	111.81	87.43	106.87
14	ITALY	100.74	116.14	82.04	99.64
15	GERMANY	98.53	99.61	81.44	93.19

16	HUNGARY	74.45	100.00	70.66	81.70
17	LATVIA	109.83	59.84	71.86	80.51
18	CYPRUS	86.73	88.98	60.48	78.73
19	LITHUANIA	73.46	63.39	87.43	74.76
20	BELGIUM	101.47	48.82	71.86	74.05
21	MALTA	85.26	81.89	53.89	73.68
22	CZECH REPUBLIC	89.43	66.93	41.32	65.89
23	POLAND	75.18	64.17	43.71	61.02
24	BULGARIA	57.49	60.63	58.08	58.74
25	UNITED KINGDOM	82.06	42.13	43.11	55.77
26	GREECE	47.17	12.60	44.31	34.69
27	ROMANIA	31.20	18.50	17.37	22.36

The gap between first and last classified in the indicators obtaining information, official form download and transmission of completed forms is of 115.72; 179.13 and 202.40 points, respectively (refer to figure .3). This last index is the second with the greatest variation rate of all those referring to households, and is only behind that of "households with broadband connection".

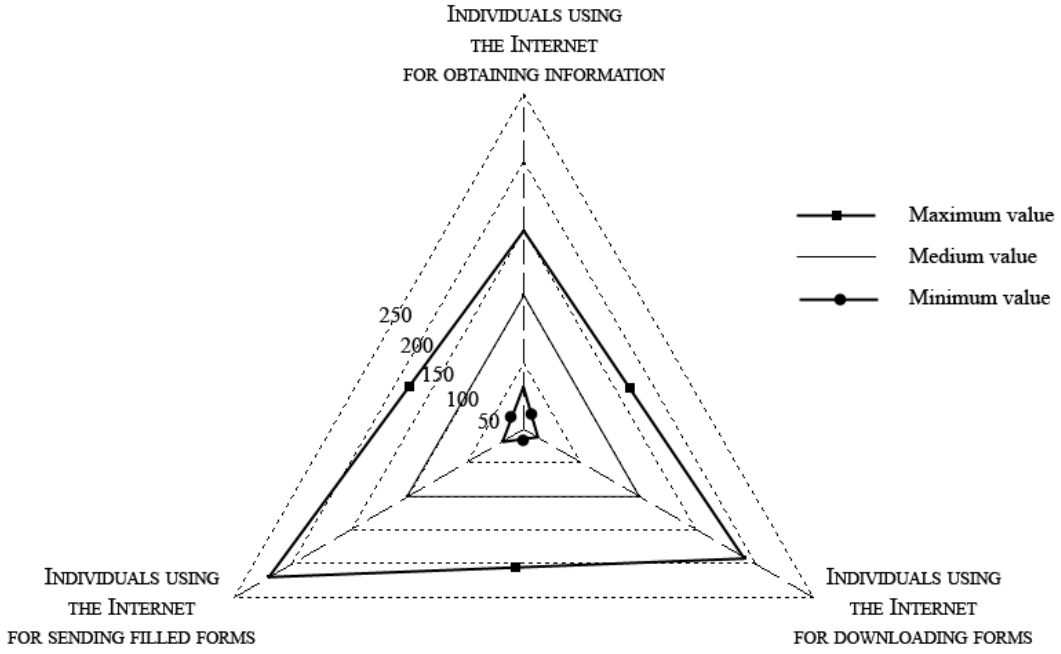

Fig. 3. Difference between the maximum and minimum value of the indicators in Block C

3 Assessment of the Relative Position of the Member States

Knowing the absolute values of the twenty seven countries for the ten indicators considered (even when reduced into three categories) is not useful for assessing their relative position.

In order to judge the homogeneity or heterogeneity of the development of the knowledge society in the EU 27 it is necessary to condense the data presented in the previous section, which is done in this section using two procedures:

- Grouping into clusters, distributing the countries in groups with similar characteristics.
- Obtaining a synthetic index, comprising in a single value all the above indicators and thus offering an "absolute classification".

In order to obtain these results, it is necessary to previously process the information offered by the ten indicators.

The factor analysis allows reducing a broad set of indicators observed to a smaller number of variables called factors. Although this technique has been consolidated in social research [8], [9], its use in the analysis of the digital divide is still very limited, some examples of the use of multivariate analysis can be found in several papers [10], [11].

To apply it, original variables must be correlated. In this situation, correlation matrix revealed

strong and significant relationships between some variables, so factor analysis could be properly deployed. Besides the correlation matrix, the Barlett test of sphericity and the Kaiser-Mayer-Olkin measure of sampling adequacy were checked.

The principal components is the technique chosen for the extraction of factors, using as criteria to determine the number of factors that should be extracted both that of eigen-values above the unit and that of an aggregate percentage of the variance of at least 60 [8],[10].

The factorial analysis has been applied to the ten indicators (refer to the appendix). The two factors extracted explain between 69% and 95% of the variance of each variable considered individually.

- Factor 1 "*Equipment, except the mobile telephony, and usage*" presents the greatest factorial weights in the indicators regarding equipment and usage (Blocks A and B, respectively), with the exception of the "households with at least one mobile telephone" variable.
- Factor 2 "*Interaction of households with the government and mobile telephone equipment*" presents the highest factorial weights in the variables regarding the interaction of households with the government (Block C) and in the indicator referring to mobile telephony.

3.1 Similarities between EU 27 countries: cluster analysis

Cluster analysis is a tool for classifying large amounts of information into manageable sets. It has been applied to a wide variety of research problems and fields. This analysis allows grouping the EU 27 countries according to the distance or similarity of the factors extracted by the factor analysis.

The exercise has been repeated using different hierarchical methods (minimum distance, medium distance, maximum distance, centroid, Ward's) and measures of similarity (Euclidean, square Euclidean and city-block). In most of the cases, the resulting clusters were made up by the same members. Finally, in order to clarify results, Ward's hierarchical method and square Euclidean have been chosen.

The number of clusters has been determined considering the distance between the different groups, with the condition that there are at least two members in each cluster. Generally, the groups created in the extreme positions, both positive and negative, are clearly defined.

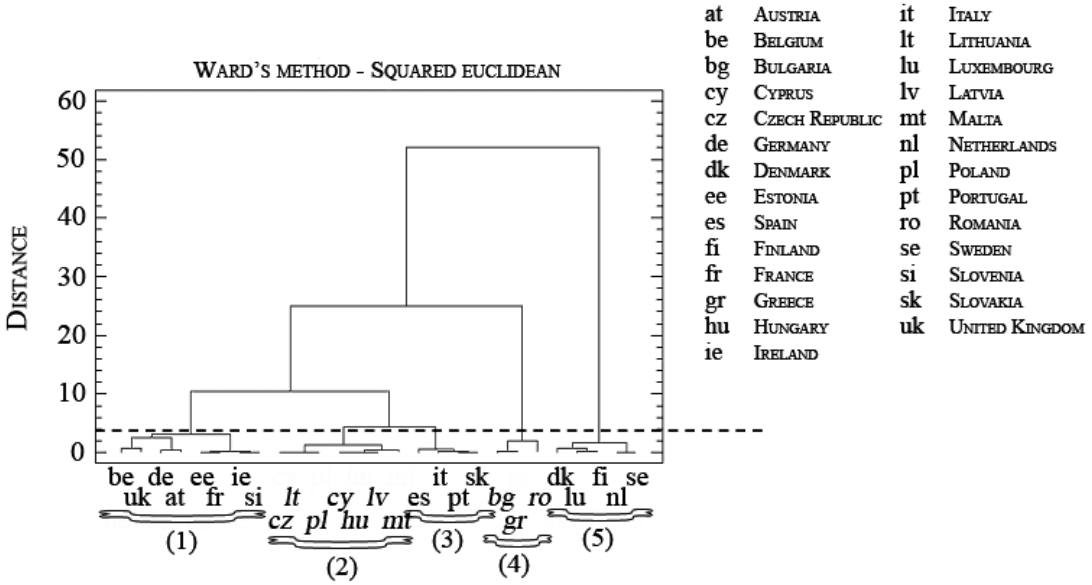

Fig. 4. Dendogram for the household-related factors

Figure .4 presents a dendogram resulting from the analysis carried out with the two factors. The number of clusters is five:

- The first one is the most populated and is made up by Belgium, United Kingdom, Germany, Austria, Estonia, France, Ireland and Slovenia. Said countries are characterised by a positive position in both factors, although without reaching extreme values.
- The second one is made up by the Czech Republic, Lithuania, Poland, Cyprus, Hungary, Latvia and Malta. Symmetrically to the countries in the first group, all their members have negative although not extreme values in both factors.
- Spain, Italy, Portugal and Slovakia form a third

cluster with mixed values: positive and close to the average in factor 2 (except in the case of Italy) and negative in factor 1.

- On the negative end are the countries that make up the fourth group: Bulgaria, Greece and Romania.
- Last, and in the opposite situation, the group of leaders is made up by Denmark, Luxembourg, Netherlands, Finland and Sweden with positive and high values in both factors.

3.2 "General classification" of the EU 27 countries: Synthetic index

Composite indexes have been increasingly recognized as a useful tool. They can offer a "big picture" of a complex reality. This general scheme would be easier to understand by the general public and help them to carry out a more appropriated analysis and obtain better conclusions [12]. The recommendations published by OECD have been followed in the construction of the composite index.

The composite index for households has been created with the weighted sum of the factors obtained in the factorial analysis. The weight given to each factor is determined by the percentage of the total variance explained.

In order to facilitate the analysis and comparison of the results, a "new member state" taking the values of the European average has been included in the analysis. Simultaneously, the reference scale of the indexes (IISS) has been modified to force the correspondence between the 100 value and the one ascribed to said average (IISS_Mod).

Once the classification has been established, countries have been grouped taking the number of groups resulting from the cluster analysis (refer to the details in the appendix).

Table 5. Synthetic index

Member state	Factor 1	Factor 2	IISS	IISS_Mod	Group
NETHERLANDS	10.91	7.65	8.98	1683.96	**1**
SWEDEN	10.81	7.41	8.87	1663.57	**1**
DENMARK	9.88	4.80	7.87	1476.71	**1**
LUXEMBOURG	7.96	6.47	6.65	1248.04	**2**
FINLAND	7.84	5.34	6.43	1205.66	**2**
GERMANY	5.65	1.92	4.41	826.38	**2**
UNITED KINGDOM	4.85	-0.30	3.54	664.55	**2**
AUSTRIA	3.40	3.04	2.88	539.48	**2**
BELGIUM	1.87	-0.63	1.31	245.06	**3**
SLOVENIA	1.36	1.96	1.24	233.20	**3**
IRELAND	0.68	2.47	0.80	149.35	**3**
ESTONIA	0.62	1.75	0.67	125.58	**3**
EU 27	**0.68**	**0.27**	**0.53**	**100.00**	
FRANCE	0.06	1.51	0.23	42.96	**3**
SPAIN	-0.65	0.48	-0.42	-79.67	**3**
MALTA	-1.31	-1.72	-1.17	-220.16	**3**
SLOVAKIA	-2.14	0.55	-1.51	-283.98	**3**
LATVIA	-2.68	-1.93	-2.21	-414.06	**4**
PORTUGAL	-3.34	0.37	-2.42	-454.20	**4**
ITALY	-3.33	-0.75	-2.55	-477.69	**4**
HUNGARY	-3.38	-2.22	-2.76	-518.01	**4**
CYPRUS	-4.12	-2.25	-3.31	-620.87	**4**
CZECH REPUBLIC	-4.34	-3.28	-3.60	-674.93	**4**
POLAND	-4.69	-4.35	-3.99	-747.97	**4**
LITHUANIA	-5.04	-3.59	-4.15	-778.16	**4**
GREECE	-8.62	-7.19	-7.23	-1355.80	**5**
BULGARIA	-10.68	-7.48	-8.79	-1648.22	**5**
ROMANIA	-12.27	-10.30	-10.29	-1930.78	**5**

Given five was the number of clusters which was considered adequate in the previous section, here five groups have been defined as well:

- The members of groups 1 (high position) and 2 (medium-high position) show a good situation as regards the progress of the

information society in households; particularly, the members of group 1 (Netherlands, Sweden and Denmark).

- Countries where households have achieved a "normal" degree of progress are ascribed to group 3: Belgium, Slovenia, Ireland, Estonia, France, Spain, Malta and Slovakia.
- Last, in groups 4 (medium-low position) and 5 (low position) a digital divide could come to mind. Naturally, said divide is more pronounced in Greece, Bulgaria and Romania, who hold the last positions in the classification.

4 Variables Explaining the Factors

This section deal with the causes that could explain the different situations presented by European Union countries according to their incorporation into the knowledge society.

The depending variable has been defined as one of the two factors resulting from the factor analysis. The independent variables used are as follows:

- The remaining factor.
- Indicators included in the Eurostat statistics based on demography and population distribution, education and science and economic situation.

When choosing the appropriate predictors in each multivariate regression model, the backward elimination procedure has been used. In order to check the accuracy of the model, the determination coefficient adjusted for the degrees of freedom has been used. The results are as follows:

- *Factor 1 (equipment, except the mobile telephony indicator, plus adoption)*

Factor 1 shows a significant and positive relationship with the per capita GDP as well as the variable "rate of adults participating in lifelong learning activities" as well as an also positive, although less significant, relationship with the density of population and the employment rate.

Table 6. Regression – Factor 1

Variables	Model
Per capita GDP	0.0560996 *** (0.0125135)
Adult participation in lifelong learning	0.35326 *** (0.0921529)
Density of population	0.00450963 ' (0.00225359)
Employment rate	0.242028 ' (0.136866)
Intercept	-25.2938 ** (8.23464)
R^2	84.2553 %
R^2 (adjusted by degrees of freedom)	**81.5171 %**
F-Snedecor	30.77

Standard error is shown between brackets
*** p < 0,001 ** p < 0,01 * p < 0,05 ' p < 0,1

The GDP per capita is the most significant variable for the equipment and adoption in households. A similar conclusion was reached by some interesting studies, for example, Kiiski and Pohjola found the GDP level is one of the most influential variables in the observed growth in computer hosts per capita [5]. Norris concluded that a certain minimal level (approximately US$8000 GDP per capita) is essential to bring about greater online use [7]. Serebrisky et al. came to the conclusion that the GDP per capita has significant positive effects on Internet adoption [13].

The equipment and adoption in households also depends on population density in a positive way, a similar conclusion was reached by Fransman who considered the regional adoption of BB can also depend on geography and population density [2].

- *Factor 2 (electronic interaction with the government plus mobile telephony indicator)*

Factor 2 presents a very significant relationship

with the factor 1, and this relationship is obviously positive. Therefore, the greater the equipment available in households as well as its frequency of usage, more probable will be the interaction of households with the government using telematic means.

Table 7. Regression – Factor 2

Variables	Model
Factor 1	0.672668 *** (0.0467691)
Intercept	-0.00000356108 (0.279696)
R^2	88.8347 %
R^2 (adjusted by degrees of freedom)	**88.4052 %**
F-Snedecor	206.86

Standard error is shown between brackets
*** p < 0,001 ** p < 0,01 * p < 0,05 ' p < 0,1

5 Conclusions

Ensuring universal service and access to information and communication technology is a top national objective in many countries. However, the descriptive part of this article reveals to no surprise that the degree of progress of the information society in the European Union is indeed far from uniform.

Netherlands, Luxembourg and Nordic countries (Sweden, Denmark and Finland) are the member states than seem to be more apt for providing an answer to the economic and social challenges set forth by the emerging information society. These five countries are followed by Germany, United Kingdom and Austria. With values close to the European average are Belgium, Slovenia, Ireland, Estonia, France, Spain, Malta and Slovakia but only the first four countries have a value of the composite index over it. Slovenia and Estonia are the only countries entering the Union in May 2004 that stand out. Finally, Greece, Bulgaria and Romania close the classification at quite a distance from the rest.

Should we focus on this global image, the situation exposed shows a few striking data but no major surprises. The digital divide is not a new phenomenon. It is mainly (both when assessed from a national perspective and when researched in social groups or even specific individuals) a consequence, or even a prolongation, of the previously existing inequalities. In line with these reflections, the per capita income appears as a determinant variable in the models that in the last part of the article attempt to establish the causes of the reality described with a basis. Indeed, income is the most significant variable for the equipment and adoption in households' factor, a factor on which depend the use of *e*Government for households. The remaining variables selected in the models shed more light, without contradicting the basic underlying idea. A smaller university population (or more accurately, adults under preparation), the dispersion of population and unemployment represent barriers for the spreading and use of the technologies that allow to make the most of the advantages promised by the information society.

Knowing the importance of these factors, as well as, naturally, the existing unbalances they help explain, should contribute to the design of corrective or promoting policies closer to reality and therefore, more efficient.

There are several paths that would allow completing this research. First, once this "snapshot" has been taken, a future dynamic study should be carried out analysing the variations in the indexes and helping to assess whether the measures already adopted really contribute to modifying the actual scenario. Second, the study of particular situations could be stressed: are there any "environmental" or cultural circumstances, difficult to synthesize into measurable variables that cause the Nordic countries, Netherlands and Luxembourg to stand out in all the classifications or the Mediterranean countries to not reach the positions that would be expected consulting other development measures? Last, the geographic digital divide does not end at the state level. Being aware of the fact that the level of detail of the existing statistics probably makes it difficult, a more exact adjustment of the public policies would require at least one additional step that is, analysing the regional and even local digital divide.

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Data source

Available **Eurostat** data. Indicator within the sections:

- *Science and Technology*
  http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136250,0_45572555&_dad=portal&_schema=PORTAL
- *General and regional statistics*
  http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136162,0_45572076&_dad=portal&_schema=PORTAL
- *Economy and finance*
  http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136173,0_45570701&_dad=portal&_schema=PORTAL
- *Population and social conditions*
  http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL
- *Industry, trade and services*
  http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136195,0_45572097&_dad=portal&_schema=PORTAL

María Concepción GARCÍA-JIMÉNEZ gained her Telecommunications Engineer degree from the Universidad de Valladolid. She also holds a degree in Administration and Business Management from the Universidad Nacional de Educación a Distancia (UNED). Currently, she is a Ph. D. student at the Universidad Nacional a Distancia (UNED). Her interests are focused on the influence of Information and Communications Technology (ICT) on European and Spanish societies.

José Luis GÓMEZ-BARROSO is an Associate Professor in the Department of Applied Economics and Economic History at Universidad Nacional de Educación a Distancia (UNED). He holds a PhD and a degree in Economics from the Universidad Nacional de Educación a Distancia (UNED). He also holds a degree in Telecommunication Engineering from the Universidad Politécnica de Madrid as well as another degree in Law from the Universidad Complutense. Dr. Gómez-Barroso has participated in different research projects, some of them for the European Commission. He is a member of the Management Committee of the COST IS0605 Action (Econ@Tel - A Telecommunications Economics COST Network).