SPAIN

E-commerce and consumption habits in Spain: the importance of online banking[1]

Mónica Correa / Juan Ramón García / Amanda Tabanera

1. Introduction

This Watch aims to improve our understanding of the determinants of e-commerce and of its composition, and clarify the possible reasons conditioning its development in Spain. The internet is still not widely available in Spanish households, furthermore, just one in four people has recently bought online, whereas in the European Union (EU15) one in two has done so (see Figure 1).

The results of the analysis conducted using the Equipment & Use of ICT in Households (TIC-H) Survey, developed by the National Statistics Institute (INE), indicate that **the lower incidence of online shopping in Spain can be explained by the following:**

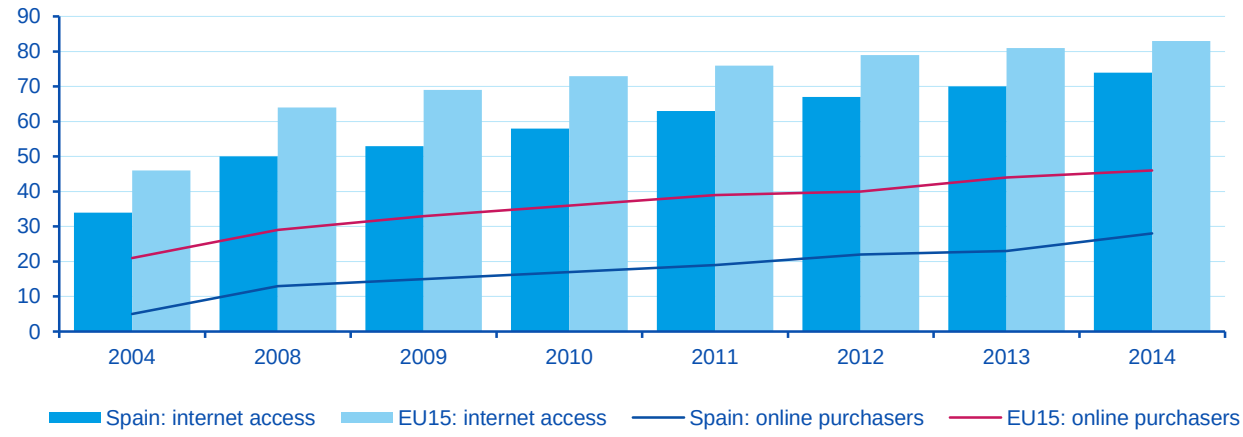
- **Individual characteristics.** For example, an inadequate educational level, a lower prevalence of one-person households and low income levels.
- **Demographic dispersion**. The scarcity of urban hubs with a high population density reduces the incidence of e-commerce because of the higher costs of transport, lower economies of scale, etc.
- **Lower use of internet banking**. The use of online banking is a thermometer for the extent to which individuals operate in the virtual environment and their confidence in the internet as a commercial channel. Among the individuals who have gone online in the last three months, only 49% have used online banking, 11 points less than the EU15 average.
- **The reduced interest on the part of Spanish firms** in exploiting the possibilities offered by ICT in their commercial strategy. Although eight out of every ten Spanish firms have an internet connection and a webpage, only 50% of them have an online catalogue of products and prices, and under 20% offer their clients the option of making orders or reservations online.

Finally, we look at the determinants behind the decision to buy a particular type of product on the internet. The results indicate that the effects of certain personal and family characteristics differ, depending on the good or service. For example, women are more likely to buy basic products and trips online, while men opt for capital goods, household and leisure articles and financial products. The presence of minors under 16 at home stimulates the online purchase of basic products, household and financial products, but has a negative effect on buying travel and leisure services. Living in a large city tends to increase online consumption of travel and leisure, whereas living in a population nucleus with fewer than 20,000 inhabitants increases the likelihood of buying basic and household goods. Both characteristics point to a relation between access to a wide range of products and population size.

This Watch is structured as follows: Section 2 describes the data from the TIC-H Survey and the relevant variables. Section 3 presents the multiple-stage model that is used to quantify effect of the factors which determine the individual decision to shop over the internet. Section 4 compiles the estimation results. Finally, Section 5 summarises our conclusions.

1: Revised version of Box 1 of our Consumption Outlook in the second half of 2014, available in Spanish here: https://www.bbvaresearch.com/public-compuesta/situacion-consumo-espana-segundo-semestre-2014/

Figure 1.1
Access to the internet and e-commerce (households with internet access and people making an online purchase in the previous three months, %)



Source: BBVA Research based on Eurostat

2. Individual characteristics specific to e-commerce consumers

In order to learn about on-line buyers, we used information from the Equipment & Use of ICT in Households (TIC-H) Survey, conducted by the National Statistical Institute (INE) every year.[2] The study spans from 2008 till 2014 and includes people aged 16 and over.[3]

Table 1 illustrates the statistics describing the variables of interest relating to the internet and ICT equipment among the population.[4] **Since 2008, the percentage of individuals who say they have used the internet at some point has risen steadily** (from 55.6% in 2008 to 71.4% in 2014). Of these, there is a significant increase in those who state that they have made an on-line purchase in the last 12 months. As one would expect, the availability of internet access at home has increased over time. Among web users, the vast majority (90.3% in 2014) are frequent internet users (daily or weekly). Similarly, the increase in the percentage of people replying that they have used the computer in the last year runs parallel with the increase in the penetration of computers at home: 11pp over the period studied.

2: Although the TIC-H used a rotating panel, public micro data do not contain an identifier enabling respondents to be tracked across the different waves of the survey. Thus, the data have been used as though they were repeat cross sections.
3: En España, los estudios que investigan los factores subyacentes a la decisión de comprar on-line son escasos. Véanse Cerno y Pérez-Amaral (2009) y Pérez Hernández y Sánchez-Mangas (2011), entre otros. Un análisis de naturaleza descriptiva se puede encontrar en ONTSI (2014).
4: The variables used in this paper are defined in the Appendix. The TIC-H survey provides expansion factors about the interviewee and the household, which allow us to obtain descriptive statistics which are representative at population level.

Table1
TIC-H descriptive statistics: internet and ICT (% of people 16 years old or more, unless otherwise indicated)

		2008	2009	2010	2011	2012	2013	2014
Internet use	Average	55.6	57.9	61.8	64.0	66.4	68.5	71.3
	Observations	20502	19644	19384	18834	15965	15820	15574
Purchases on internet(*)	Average	31.1	34.9	34.9	37.8	41.3	41.7	47.2
	Observations	9671	9659	10012	10121	9062	9451	9792
Internet at home	Average	44.8	47.5	51.6	56.2	59.7	61.8	66.3
	Observations	20368	19607	19318	18804	15933	15798	15551
How often internet is used(*)	Average	78.8	82.5	84.6	86.4	88.1	86.9	90.3
	Observations	9671	9659	10012	10121	9062	9451	9792
Computer use	Average	57.4	59.1	62.9	64.4	67.6	67.8	68.8
	Observations	20502	19644	19384	18834	15965	15820	15574
Computer at home	Average	55.6	58.4	60.0	63.0	65.0	65.0	66.9
	Observations	20501	19642	19382	18828	15963	15817	15571

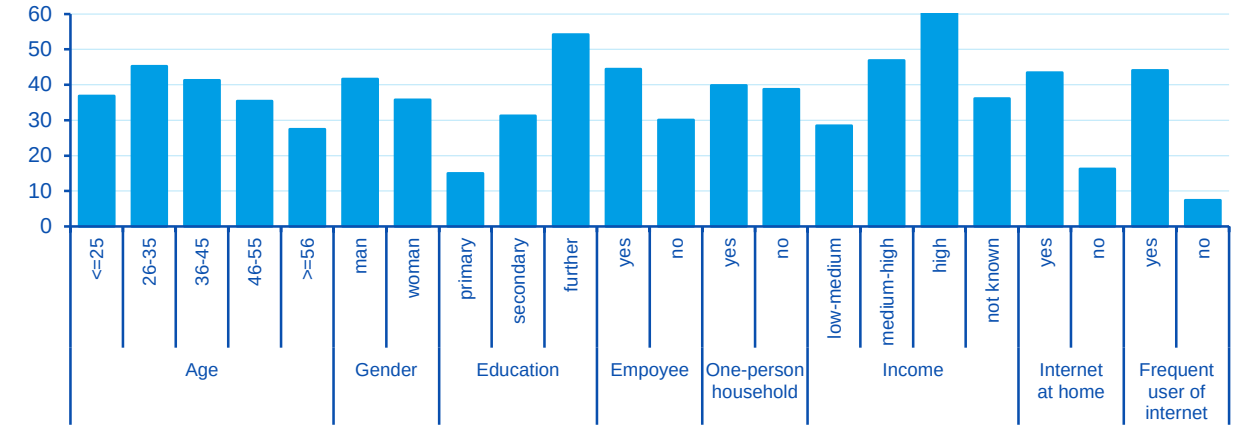
Notes:
1. See the Appendix for a description of the variables.
(*) Indicates that the variable is only available for respondents who have used the internet.
Source: BBVA Research based on the TIC-H survey (INE)

Table A.1. in the Appendix provides information about the socio-economic characteristics of those surveyed between 2008 and 2014 inclusive. The average age is 45, with women and men being similarly represented (51% and 49%, respectively). Around 25% have completed higher education, 45% have secondary education and the remainder have basic education. 47% are employed, with the remaining 53% out of work or inactive. In terms of the size of households, 23% have one member, 30% have two, and the remaining 47% have three or more. 23% declare their net monthly incomes as being in the higher brackets, while one out of four says they do not know what their household income is.[5] Finally, in reference to the place of residence, a third live in populations of over 500,000 inhabitants and in provincial capitals of fewer than 500,000 inhabitants, another third in population centres of between 20,000 and 500,000, and the remaining third in localities with less than 20,000 inhabitants.

What is the relationship between personal and householdcharacteristics and internet consumption? Figure B.2 shows the proportion of internet users which has bought online, by the key socio-economic characteristics of the individual and of their household, as well as by internet-related factors. On average, in the sample period, the percentage of internet shoppers increases with age up to 35, at which point the incidence of e-commerce falls. There is a 6pp gender gap in online shopping in favour of men. **Educational attainment, meanwhile, is clearly linked to a propensity to buy online: the difference in the percentage of online buyers between those with higher education and those with basic education is 36pp.** Around 45% of employees make purchases online, 15pp more than people who declare other employment situations. Furthermore, the size of the household does not have a clear impact on the incidence of internet consumption. In terms of household income, **the figure suggests a positive correlation between income level and the propensity to make online purchases.** Finally, having internet access at home and self-identification as a frequent user are positively associated with online shopping, with differences of around 30pp.

5: Between 2008 and 2012, net monthly income in the medium-high and high brackets were set at EUR1.800 to EUR2.700, and higher than EUR2.700, respectively. In 2013-14, the income brackets for each category in the survey were changed to EUR1.600-2.500 and above EUR.2500, respectively.

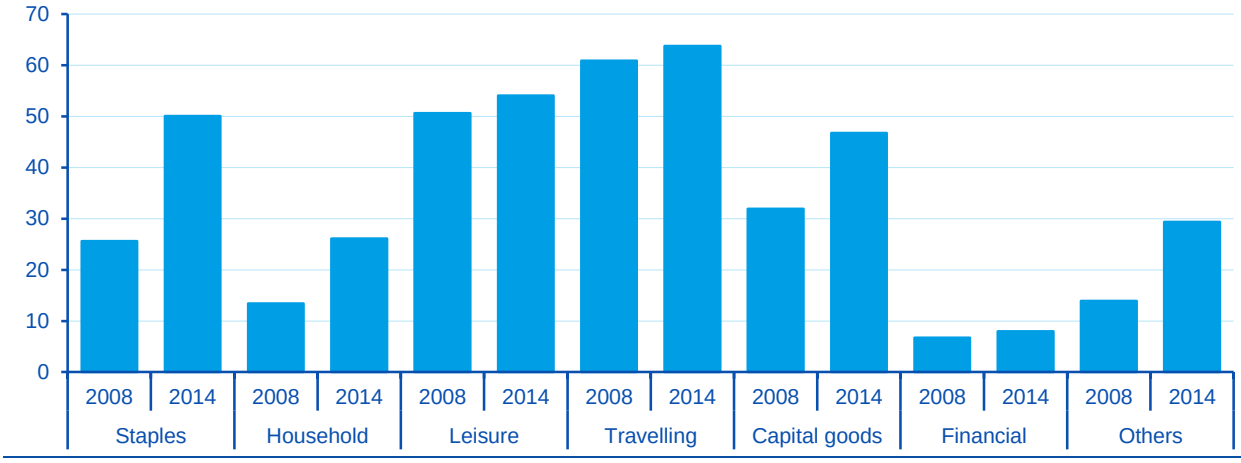
Figure 1.3
Percentage of people buying online according to socio-economic characteristics and internet-related factors (2008-14 average)



Notes:
1. See notes to Table 1.1.
2. Sample available for individuals replying that they have used internet.
Source: BBVA Research based on the TIC-H Survey (INE)

Having analysed the variables that are likely to play a significant role in the decision to buy online, Figure 3 summarises the information about the categories of goods and services which are consumed in this way.[6] So, the most popular type of online consumption among online consumers is leisure and travel: in 2014, around 64% of purchasing internet users bought a product in the travel category. The propensity to buy household goods online has increased noticeably over the sample period, although it is still relatively infrequent (26%). Far behind the remaining categories is the online acquisition of financial products, at less than 10%.

Figure 1.4
Percentage of individuals buying online, by goods and services category



Notes:
1. Sample available for those replying that they have bought online
Source: BBVA Research based on the TIC-H Survey (INE)

6: The information in the Appendix includes the goods and services included in each category.

3. An econometric model of the decision to buy online

In order to quantify the importance of the factors determining individuals´ online purchasing decisions, we constructed a multiple-stage econometric model (see Figure 4).[7] We first estimated the determinants of the decision to use the internet, among which the most important were:

(i) the characteristics of the individual and the household, as deduced from the empirical evidence obtained in the previous section;

(ii) computer usage, which gives an idea of the individual's command of digital media;

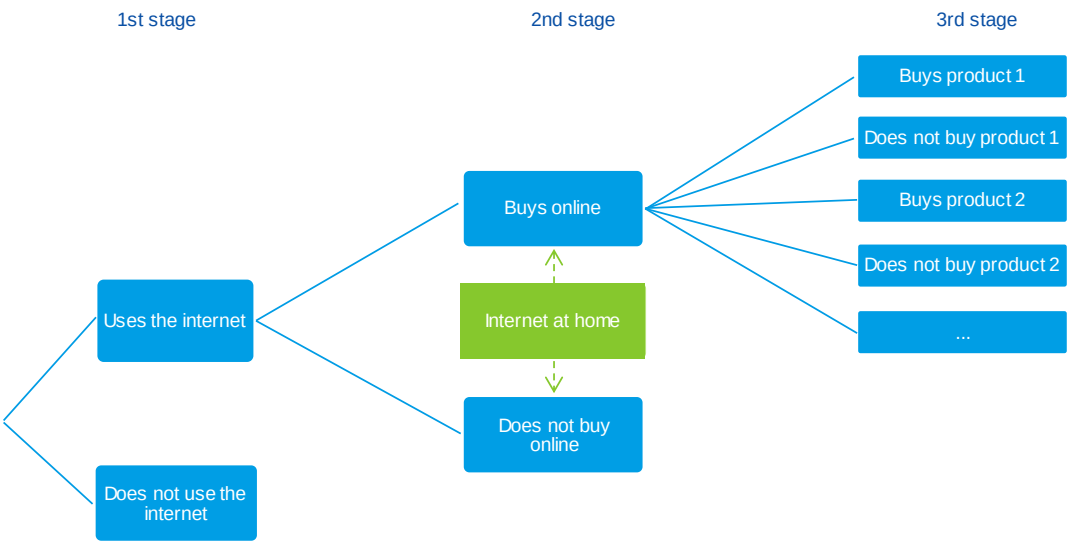
(iii) the size of the population nucleus and the region where the household is located;

(iv) time variables, the purpose of which is, among others, to control for the position in the economic cycle.

The second phase involved designing a model which estimates the decisions both to buy online and to have internet access at home. This is because one of the variables contributing to the likelihood of buying online, specifically, that of having internet access at home, is potentially endogenous.[8] The decision to have internet in one's home depends on factors i), iii) and iv), of having a computer in the home in the first place, and on how often one uses the internet. The decision to buy online is accounted for, once again, by factors i), iii) and iv), to which we should add the presence of the internet at home and the use of internet banking. This final consideration tries to account for a person's intangible characteristics, such as their confidence and competence in a virtual environment.

Finally, we added a third stageto the model which looks at the factors which determine the decision to buy one type of product over the internet, as opposed to not to buy online.[9] This decision is modelled, exclusively, around the person's socio-economic characteristics and those of their household, as well as by time variables.

Figure 1.5
Multi-stage model of the decision to buy online



Source: BBVA Research

7 The need to use a multi-phase model is justified by the sample selection bias, caused by the fact that the question about whether the person buys online is only asked to those who have previously acknowledged that they have used the internet on some occasion.
8 Given that the structure of the data means that we cannot control for fixed effects at an individual level, the endogenous element will appear as a result of the presence of characteristics that cannot be individually observed. For example, the preference for using technology, which affects both the decision to buy online and the decision to have internet access at home.
9 Note that the estimate corrects for the sample selection bias caused by the fact that the question about whether a person buys a particular good or service online is only asked to those who have previously acknowledged that they have bought online.

4. Results

Determinants of the decision to buy online

Table 2 of the Appendix presents the results of the estimation. **The first column in the table gives the determinants of the probability of internet use**. The results demonstrate that the probability of having used the web at some point decreases with age. Although men and those with the highest educational attainments are more inclined to use the internet, their working situation has no significant effects.[10]

When it comes to household characteristics, its size has a decreasing effect on the probability of the interviewee using the internet, yet the presence of people under 16 is irrelevant. Household income exercises a positive and increasing effect on the propensity to use the web. As one would expect, recent use of a computer also increases significantly the likelihood of going online. Finally, living in a larger population, or in a provincial capital, has a positive and increasing effect, when compared with those living in localities with fewer than 20,000 inhabitants.

When it comes to the decision to have internet access at home, the second column of Table A.2 shows that, unlike the previous phase, age does have a positive effect on the probability of having internet at home, while being a man has a negative effect. Both frequent internet use and having used a computer in the last year have a positive impact, and the effect of the household's size now grows.

Finally, the third column of Table A.2 shows the determinants for shopping over the internet. Although age plays no role in the decision to acquire products online, the effects of gender, education, income and family size are similar to the estimates in the first phase: the likelihood of shopping online is higher among men and increases with education and income levels, but decreases as the number of household members rises. The variables linked to the use of ICT equipment, such as having internet access at home, using it frequently and doing online banking, make a positive contribution to the propensity to use e-commerce. In terms of the difference made by the locality, there is a non-linear effect: households in urban centres with fewer than 20,000 inhabitants and those living in more highly populated cities present a higher probability to shop online compared with those living in cities with population between 20,000 and 100,000Although the results in Table A.2 allow us to reveal the qualitative effects of individual characteristics on the likelihood of using the internet and buying online, they are not easily interpreted from the quantitative standpoint. We have therefore computed the marginal effects evaluated at the mean value of the explanatory variables.

As Table 3 shows, **the socio-economic factors with the greatest impact on the probability of making online purchases are the level of education – particularly if the person has a degree -, the size of the household – especially when there is only one person - and the household's net monthly income**. Thus, the likelihood of acquiring products over the internet is 21pp greater among those people with higher education than among those who only completed basic education. People living alone are more likely to buy online, particularly when compared with those living in households with five or more members (17pp). Similarly, the propensity to buy online in households with higher incomes is 16pp higher than those in the low or medium income brackets.

10: The categories excluded, and which should serve as a reference in interpreting the results, are: basic education, household of five or more people, low and medium household income, and locality with fewer than 20,000 inhabitants.

Table 1.3
Determinants behind the individual's decision to buy on the internet: marginal effects evaluated at the mean value of explanatory variables, 2008-14 (pp)

Dependent variable: online purchases	Ratio	Est. error
Age	0.000	(0.001)
Age squared	-0.000***	(0.000)
Man	0.058***	(0.004)
Secondary education	0.092***	(0.010)
Higher education	0.207***	(0.010)
Employee	0.023***	(0.005)
Size 1 household	0.173***	(0.027)
Size 2 household	0.070***	(0.010)
Size 3 household	0.034***	(0.009)
Size 4 household	0.023***	(0.008)
Age* Size 1 household	-0.001**	(0.001)
Under 16s	0.000	(0.003)
Medium-high income bracket	0.079***	(0.006)
High income bracket	0.157***	(0.007)
Unknown income	0.020***	(0.006)
Internet at home	0.194***	(0.013)
Frequency of internet use	0.180***	(0.010)
Internet banking	0.320***	(0.005)
Urban nucleus ≥500,000	0.015*	(0.008)
<500,000 & provincial capital	-0.001	(0.006)
≥100,000 y <500,000	-0.051***	(0.009)
≥20,000 y <100,000	-0.012**	(0.006)

Notes:
1. See the notes to Table B.1.A.2.
Source: BBVA Research based on the TIC-H survey (INE)

Of the remaining socio-economic factors, two are the most important: gender – the likelihood of buying online is six points higher in the case of men - and working situation – two points higher for those in work. When it comes to the types of urban nucleus, we can confirm the inverted "U" effect: people living in large cities and those living in communities with fewer than 20,000 inhabitants tend to buy more over the internet than the rest. The non-lineal effect of population size on the likelihood of using e-commerce is possibly related to the greater supply of companies selling over the internet in larger population centres, as well as the limited variety of products and services readily available - in small localities.

As to the **technological variables**, Table 3 shows that **people who are most confident and capable in the virtual environment – the use of electronic banking serves as a good proxy - are more prone to make online purchases.** The use of internet banking increases by 32pp the probability of acquiring online products. We also obtained that having the internet at home increases people's propensity to buy online by 19pp.[11] Finally, frequent internet users are 18pp more likely to make purchase over the internet, if we compare them with those using the web less often. For these reasons, **the results appear to support the**

11: This effect is greater than the estimates made in Pérez Hernández & Sánchez-Mangas (2011) for the 2004-09 period.

effectiveness of policies designed to widen access to the internet at home as a launch-pad for e-commerce.

The breakdown of online purchases in Spanish households

The estimate in the third phase of the model synthesised in Figure 4 enables us to see the underlying factors behind an individual decision to buy a particular type of product online.[12] In all the product categories we studied, households with higher incomes are more likely to buy products online than households in the lower income brackets. Educational level has a positive impact on online consumption in all categories of goods except for basic products. Women are more likely to buy basic products and trips online, while men opt for capital goods, household and leisure articles and financial products. The demand for household goods, travel services and financial products grows with age, whereas younger people tend to consume basic products and capital goods.

As one would expect, people's working situation conditions their online buying patterns: being employed increases the likelihood of buying online in all categories, with the exception of capital goods and financial products; in these categories, those not working are more prone to consume them online. When it comes to the composition of the family, households with just one member are more likely to consume online in all product groups apart from capital goods. The presence of minors under 16 at home introduces a positive bias towards the online purchase of basic products, household and financial products, and a negative one towards buying travel and leisure. Finally, living in a large city tends to increase online consumption of travel and leisure, whereas living in a population nucleus with fewer than 20,000 inhabitants increases the likelihood of buying basic and household goods. Both characteristics point to a relation between access to a wide range of products and population size.

5. Conclusion

The use of e-commerce as an adjunct to traditional commerce is increasingly important in Spain. However, despite the progress made over the last decade, **the data reveal the still patchy implementation of e-commerce in Spain** compared to the main European economies. We can deduce from the analysis in this digital economy watch that part of **this difference could be accounted for by the socio-economic features** of Spanish households – above all, their low income levels, the impaired educational achievement and the lower proportion of one-person households (23% compared to an average of 33% in the EU-15) - **the scattered population and the relatively low penetration of internet banking**. According to TIC-H data, of those using the internet in the last three months, only 49% have used online banking, which is 11pp below the EU15 average and almost half that of Finland.

Another major reason for the scarce prevalence of online shopping in Spain is the lower predisposition on the part of Spanish firms to explore the possibilities offered by ICT for their daily operations, as covered in our Consumption Outlook in the second half of 2013.[13] Thus, although eight out of every ten Spanish firms have an internet connection and a webpage, only 50% of them have an online catalogue of products and prices, and under 20% offer their clients the option of making orders or reservations online. This factor feeds back into households' reluctance to make electronic purchases. For example, the proportion of people in the TIC-H survey who say that they trust the internet little or not at all when they use their personal computer is noticeably higher than those stating that they trust it (33%, compared to 12%). A good proportion of potential online buyers are in the latter category.

12. The results of the estimate are available upon request.
13 See Box 2 of the Second Half 2013 Consumption Outlook, available in Spanish here:https://www.bbvaresearch.com/publicaciones/situacion-consumo-segundo-semestre-2013/

Even so, the results in this area suggest that economic policies designed to make internet access easier have borne fruit, inasmuch as they have translated into a significant increase on the part of Spanish households in their propensity to make online purchases.

References

BBVA Research (2013): Situación Consumo. Segundo Semestre 2013. Madrid. Disponible en: https://www.bbvaresearch.com/publicaciones/situacion-consumo-segundo-semestre-2013/

Cerno, L., & T. Pérez-Amaral, (2009): "E-commerce use in Spain", http://link.springer.com/book/10.1007/978-3-7908-2082-9.

ONTSI (2014): Estudio sobre Comercio Electrónico B2C 2013. Edición 2014. Ministerio de Industria, Energía y Turismo. Red.es. Madrid. Disponible en: http://www.ontsi.red.es/ontsi/sites/default/files/estudio_sobre_comercio_electronico_b2c_2013_edicion_2014.pdf

Pérez Hernández, J. y R. Sánchez-Mangas, (2011): "To have or not to have Internet at home: implications for online shopping", Information Economics and Policy, Vol. 23, ss. 3–4, 213–226.

Appendix

Definition of the variables related to the internet and ICT equipment

Internet use: binary variable taking the value of 1 if the person has ever used the web (without time or location cut-offs), and 0 otherwise.

Internet purchases: binary variable taking the value of 1 if the person has made an online purchase in the last year, and 0 otherwise.

Internet at home: binary variable taking the value of 1 if the person has an internet connection at home (regardless the available equipment to connect), and 0 otherwise.

Frequency of internet use: binary variable taking the value of 1 if the person uses the internet on a daily or weekly basis, and 0 if less frequently.

Computer use: binary variable taking the value of 1 if the person has used a computer in the last year, and 0 if otherwise.

Computer at home: binary variable taking the value of 1 if the person has a computer at home, and 0 if otherwise.

Use of internet banking: binary variable taking the value of 1 if the person has used an electronic banking service in the past 3 months for personal reasons, and 0 if otherwise.

Product categories consumed online: staples (including food, clothes, medicine and sports equipment), household goods, leisure (includes films, music, books and tickets to shows), travel (includes transport and accommodation), capital goods (includes electronics, hardware, software and telecoms), financial services (includes banking and insurance products), other products and services.

Descriptive statistics

Table.A.1
Descriptive statistics in TIC-H: socio-economic features (% of individuals aged 16 or over)

		2008	2009	2010	2011	2012	2013	2014
Age	Average	46.1	46.3	46.6	46.9	47.3	47.7	48.1
	Stand. Devia.	18.6	18.5	18.5	18.5	18.5	18.6	18.6
Hombre	Average	49.2	49.1	49.1	49.0	48.9	48.8	48.7
Secondary education	Average	43.0	41.7	42.3	41.1	45.1	46.8	47.2
Higher education	Average	25.3	26.4	27.1	26.4	27.2	27.8	27.3
Employee	Average	54.0	49.0	47.8	47.1	46.1	41.8	42.7
Size 1 household	Average	22.2	22.4	22.6	22.9	23.4	24.0	24.7
Size 2 household	Average	28.4	28.7	29.2	29.7	30.1	30.4	30.6
Size 3 household	Average	21.4	21.5	21.6	21.6	21.6	21.3	21.1
Size 4 household	Average	19.4	19.2	19.0	18.8	18.5	18.1	17.8
Under 16s	Average	42.6	41.5	40.9	40.3	39.9	39.9	39.1
Medium-high income bracket	Average	14.2	14.2	13.2	12.6	11.8	12.9	14.9
High income bracket	Average	9.8	10.1	9.5	8.5	8.3	9.8	10.8
Unknown income	Average	25.1	20.6	22.2	27.0	25.9	25.9	20.4
Urban nucleus ≥500.000	Average	17.4	17.1	17.1	16.9	16.7	17.0	17.0
<500.000 & provincial capital	Average	16.6	16.7	16.7	16.7	16.2	16.0	16.2
≥100,000 y <500,000	Average	9.4	9.2	9.2	9.3	9.4	9.2	9.4
≥20,000 y <100,000	Average	23.2	23.2	22.6	23.2	23.9	24.5	24.3

Notes:
1. See the notes to Table B.1.1.
2. Age is expressed in years.
Source: BBVA Research based on the TIC-H survey (INE)

Table A.2
Determinants of an individual's decision to buy online: multiphase model, 2008-14

	1. Internet use		2. Internet at home		3. Online purchases	
Dependent variable:	**Ratio**	**Error est.**	**Ratio**	**Error est.**	**Ratio**	**Error est.**
Age	-0.032***	(0.003)	0.014***	(0.003)	0.001	(0.003)
Age squared	0.000	(0.000)	0.000	(0.000)	-0.000***	(0.000)
Man	0.035**	(0.015)	-0.072***	(0.015)	0.152***	(0.011)
Secondary education	0.489***	(0.017)	0.065**	(0.026)	0.234***	(0.026)
Higher education	0.968***	(0.023)	-0.04	(0.028)	0.533***	(0.027)
Employee	-0.018	(0.017)	-0.021	(0.017)	0.060***	(0.014)
Size 1 household	0.332***	(0.091)	-0.547***	(0.082)	0.450***	(0.071)
Size 2 household	0.145***	(0.035)	-0.420***	(0.036)	0.182***	(0.027)
Size 3 household	0.077**	(0.033)	-0.195***	(0.032)	0.089***	(0.024)
Size 4 household	0.059*	(0.031)	-0.011	(0.029)	0.060***	(0.022)
Age*Size 1 household	-0.002	(0.001)	-0.004**	(0.002)	-0.003*	(0.001)
Under 16s	-0.019	(0.012)	-0.144***	(0.012)	0.001	(0.009)
Medium-high income bracket	0.257***	(0.022)	0.233***	(0.020)	0.205***	(0.016)
High income bracket	0.427***	(0.029)	0.429***	(0.026)	0.406***	(0.018)
Unknown income	0.064***	(0.018)	0.174***	(0.019)	0.051***	(0.015)
Computer use	2,753***	(0.016)				
Computer at home			2,124***	(0.024)		
Frequency of internet use			0.976***	(0.019)	0.472***	(0.027)
Internet at home					0.509***	(0.034)
Internet banking					0.840***	(0.012)
Urban nucleus ≥500,000	0.124***	(0.028)	0.178***	(0.027)	0.037*	(0.021)
<500,000 & provincial capital	0.149***	(0.020)	0.143***	(0.020)	-0.005	(0.015)
≥100,000 and <500,000	0.102***	(0.031)	0.212***	(0.032)	-0.135***	(0.024)
≥20,000 y <100,000	0.077***	(0.020)	0.141***	(0.020)	-0.034**	(0.016)
Constant	-0.678***	(0.098)	-2.262***	(0.000)	-2.046***	(0.061)
Number of comments:	125.594					
Pseudo-likelihood log:	-71614.047					
Correlation coefficient 1 vs. 2:	-0.109***	(0.021)				
Correlation coefficient 1 vs. 3:	-0.109***	(0.035)				
Correlation coefficient 2 vs. 3:	0.0073	(0.025)				

Notes:
1. All the estimates include regional and time binary variables.
2. Robust standard errors in brackets.
3. Estimate method: Maximum Likelihood.
4. (***), (**), (*) denote significance to 1%, 5% and 10% respectively.
5. The excluded categories, which serve as a reference in interpreting the results, are: basic education, household with five or more members, low- and medium household income and population nucleus with fewer than 20,000 inhabitants.
Source: BBVA Research based on the TIC-H survey (INE)

DISCLAIMER

This document has been prepared by BBVA Research Department, it is provided for information purposes only and expresses data, opinions or estimations regarding the date of issue of the report, prepared by BBVA or obtained from or based on sources we consider to be reliable, and have not been independently verified by BBVA. Therefore, BBVA offers no warranty, either express or implicit, regarding its accuracy, integrity or correctness.

Estimations this document may contain have been undertaken according to generally accepted methodologies and should be considered as forecasts or projections. Results obtained in the past, either positive or negative, are no guarantee of future performance.

This document and its contents are subject to changes without prior notice depending on variables such as the economic context or market fluctuations. BBVA is not responsible for updating these contents or for giving notice of such changes.

BBVA accepts no liability for any loss, direct or indirect, that may result from the use of this document or its contents.

This document and its contents do not constitute an offer, invitation or solicitation to purchase, divest or enter into any interest in financial assets or instruments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

In regard to investment in financial assets related to economic variables this document may cover, readers should be aware that under no circumstances should they base their investment decisions in the information contained in this document. Those persons or entities offering investment products to these potential investors are legally required to provide the information needed for them to take an appropriate investment decision.