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Influence of abilities for searching commercial information online on e-shopping: when inequality affects business

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La influencia de las habilidades digitales para la búsqueda de información comercial on-line sobre el e-shopping: cuando las desigualdades digitales afectan a los negocios

A influência do competências digitais sobre e-shopping: quando as desigualdades digital afetar os negócios

Following Technology Acceptance Model (TAM), we study how abilities for searching and verifying commercial information online affect the adoption of e-shopping behaviors by internet users. Secondly, we study how these kinds of skills are positively influenced by the adoption of informative Internet uses. Finally, we reflect about the implications that digital inequality, i.e. the unequal distribution of beneficial uses of the Internet among the population, as informative ones are, can have on electronic commerce.

De acuerdo con el Modelo de Aceptación de las Tecnología (TAM), en este artículo se estudia cómo las habilidades para la búsqueda y verificación de la información comercial on-line afectan a la adopción de hábitos de compra a través de Internet. En segundo lugar, se estudia cómo este tipo de habilidades están positivamente influidas por la capacidad para buscar, en general, contenidos en Internet. Por último, reflexionamos sobre las implicaciones que la desigualdad digital, es decir, la distribución desigual de los usos beneficiosos de Internet entre la población, como por ejemplo los informativos, pueden tener sobre el comercio electrónico.

De acordo com a tecnologia Modelo de aceitação (TAM), este artigo examina como as habilidades de pesquisa e verificação de informações de negócios on-line afetam a adoção de hábitos de compra através da Internet. Em segundo lugar, nós estudamos como essas habilidades são positivamente influenciados pela capacidade de pesquisar, em, conteúdo geral Internet. Finalmente, refletimos sobre as implicações da desigualdade digitais, ou seja, a distribuição desigual dos usos benéficos da Internet entre a população, tais como notícias, pode ter sobre o comércio electrónico.

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1. Introduction

In recent years the academic community has started to consider e-shopping –in other words, the purchase of goods and services via the Internet (Peterson et al. 1997; Shanthi and Kannaiah, 2015)-, as an innovative resource for the business sector (Capineri and Leinbach 2004). Many specialists hold that online shopping has many advantages, both for companies and for consumers, compared to its offline equivalent (Wang et al. 2002; Yan et. Al, 2016).

However, the prevalence of this type of practice in the Western world has not yet reached the levels expected (Horrigan 2008). In Spain, for instance, compared to an Internet penetration rate among the population of 74% (INE 2014), only 10% of companies sell products online (EUROSTAT 2011) and only 27,5% of the population engages in e-shopping (INE 2014).

Thus, many authors have looked at how it might be possible to encourage the adoption of e-shopping among the general population (Grewal et al. 2004; Ahn et al. 2004; Abdul-Muhmin 2010; Rouibah et, al, 2016). On the one hand, some researchers have analyzed what segments of the Internet user population are inclined to these practices and what characteristics differentiate them from those who do not shop via the Internet (Wu and Chou 2011; Phan and Vogel 2010). The aim is thus to facilitate the development of strategies for increasing the prevalence of online commerce, adapting them to the specific characteristics of potential consumers.

On the other hand, research has been carried out into the factors positively related with e-shopping practices. In this field, researchers have focused on the characteristics of the services provided by online stores (Collier and Bienstock 2006; M. Kim and Lennon 2008; Eastlick et al. 2006; J. Kim et al. 2009; Bilgihan and Bujisic, 2015), as well as on the attitudes, abilities and capabilities of clients (Deng et al. 2010; Shanthi and Kannaiah, 2015). Among the most influential theories in this field of study is the Technology Acceptance Model (Davis 1989). According to this model, the greatest influence on the implementation of online shopping processes would be the Perceived Usefulness of said practices.

One of the factors with the greatest influence on Perceived Usefulness is the level of information available to the Internet user with regard to the product they want to purchase (Barkhi and Wallace 2007; Chen and Tan 2004). Thus, specialists have analysed three aspects of digital information regarding products and services. The first two refer to Internet users' abilities for searching for information in general and for searching for and verifying commercial information in particular. The second aspect is related with the characteristics of the company's website and the information available on it.

There are studies that show that both the capabilities of Internet users and the informational characteristics of the website have an influence on e-shopping (Kan-Min 2010; Zillien and Hargittai 2009). However, the information is more effective as a stimulus for online consumption if it is the product of a process of actively searching for and verifying the information by the Internet user (Rowley 2000). It is for this reason that Internet users' abilities to perform this type of search become a central issue for the study of e-shopping.

This paper aims to advance in the study of the determining factors of e-shopping practices among Internet users. In line with the Technology Acceptance Model, we first test the extent to which Internet users' abilities and the characteristics of the commercial site facilitate the purchase of products through e-shopping.

Key words
E-shopping, influence factors, TAM, digital skills, digital inequality

Palabras clave
E-shopping, factores de influencia, TAM, habilidades digitales, desigualdad digital

Palavras-chave
E-compras, influenciadores, TAM, competências digitais, desigualdades digitais

JEL Codes:
M15, M30

Secondly, an attempt is made to clarify which, among the three variables observed (ability to search for general information, ability to search for and verify commercial information and the characteristics of the commercial websites), favors e-shopping to a greater extent. We show that only the ability to search for commercial information and verify it remains significant when analyzing jointly the effect of the three variables on e-shopping.

Thirdly, we attempt to respond to the question as to how the necessary capabilities for searching for commercial information and verifying it are acquired. Authors such as Kan-Min (2010) and Zillien and Hargittai (2009) suggest that these capabilities develop through the daily use of the Internet for informational purposes. Thus, the ability to search for general information would not directly affect e-shopping, except in a mediated way, through the ability for searching for commercial information and verifying it.

Fourth, we shall put forward some hypotheses, based on our empirical study, to explain the limited development of e-shopping over recent years. Digital inequality experts (DiMaggio et al. 2001 2001; Hargittai and Hinnant 2008; van Dijk 2006; Bonfadelli 2002; Robinson et al. 2003; Van Dijk 2005; Peter and Valkenburg 2006) suggest that informational uses of the Internet are not equally distributed across the population, but rather that they are distributed more frequently among Internet users with greater resources or with a higher level of education. If the relationship between the informational use of the Internet, the ability for searching for commercial information and online purchasing were to be shown, we might point to Digital Inequality as the cause of the low level of adoption of e-shopping among the population.

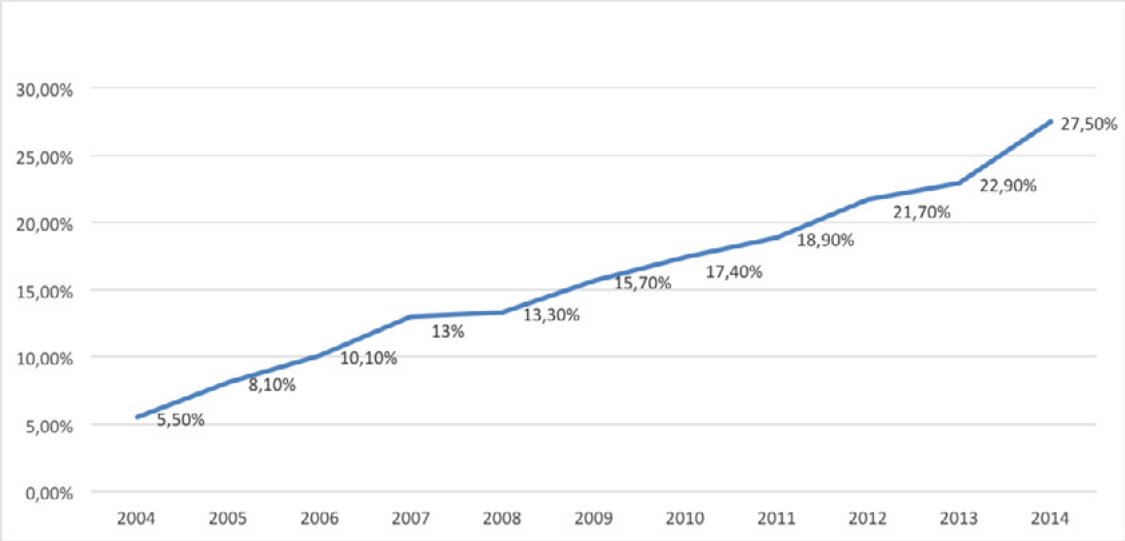
To test our hypotheses, we shall use the survey of the Institute for Advanced Social Studies (Instituto de Estudios Sociales Avanzado –IESA-) of Córdoba "El papel de las nuevas tecnologías en el perfil de compra de la persona consumidora en Andalucía" (E1111) (The role of new technologies in the purchasing profile of consumers in Andalusia) of 2011. Despite the universe of reference of this study being the Andalusian population, the data it provides are essential for clarifying the online consumption practices of Internet users.

2. Theory Section

The purchase of products and services online has many advantages, both for the consumer and for the companies that engage in this type of business (Leonard and Cronan 2001; Wang et al. 2002; Shanthi and Kannaiah, 2015). For consumers, e-shopping is an opportunity to buy cheaper, reduce costs associated with travel or take advantage of offers of products and services that are not always accessible via "traditional" media. Some of the advantages for sellers are lower expenses, new channels for communicating advertising messages, new retail models and an increase in sales volume.

According to data from Eurostat (2013), the number of Spanish companies that sold a product or service online increased from 2% in 2002 to 10% in 2008. On the other hand, the data from the Spanish National Statistics Institute (Instituto Nacional de Estadística –INE-) of 2014 offers us a chart of the evolution of the prevalence of e-shopping among Spanish Internet users from 2004 to 2014. These data are summarized in figure 1 and show us how the percentage of e-shoppers in Spain has increased in recent years, from 5.5% in 2004 to 27,5% in 2014.

Graph 1: People who have shopped via the internet in the last 3 months.



Despite this upward trend, the prevalence of e-shopping in Spain is still low compared to the advantages offered by this use of the Internet. This statement is supported by the data of Internet access prevalence among the Spanish population, which reached 60% in 2011, with peaks of up to 90% in the youngest age brackets (INE, 2012). In this regard, authors such as Soopramanien and Robertson (2007), point to e-shoppers having a series of specific characteristics that make them different from Internet users in general and hold that there is not a direct correlation between Internet access and online shopping.

As a result of this evidence, academics are turning their attention towards the study of the mechanisms and factors that favor the adoption of e-commerce practices by Internet users (Grewal et al. 2004; Ahn et al. 2004; Kim et. Al, 2014).

On the one hand, some authors have applied segmentation techniques to seek the variables that best discriminate Internet users who engage in e-commerce (Wu and Chou 2011; Phan and Vogel 2010). For instance, authors such as Barnes et al.(2007) build different categories of online consumers. To do so, they use psychographic variables, behavioral variables that are inherent to shopping and specific cultural characteristics of each country. The authors thus generate three types of Internet users based on their attitudes with regard to e-shopping: the skeptics-adverse to risk, open-minded online shoppers and information seekers. The authors also suggest the relevance of certain variables, such as "neuroticism", the "will to shop" and the "pleasure of shopping" in generating these attitudes in Internet users. Brashear et al. (2009) describe the characteristics of e-shoppers of 6 countries (USA, UK, New Zealand, China, Brazil and Bulgaria) that contribute to differentiate them from other Internet users. The results show that shoppers have several similar characteristics in the different countries: attitude towards convenience, impulsivity and attitudes favourable to advertising. They also tend to be Internet users with high socio-economic resources and with a greater competence in using the Internet.

The factors that lead Internet users to adopt e-shopping practices have also been studied. One of the most significant lines of research analyses the effects of the very structure of online businesses

on online shopping intentions of Internet users (Bilgihan and Bujisic, 2015). Thus, research has been carried out regarding the effects of the quality of the website of the online store (J. Kim et al. 2009), the level of safety and privacy guaranteed by the site (Eastlick et al. 2006), the product information (M. Kim and Lennon 2008) and the quality of the completion of the purchase or return process (Collier and Bienstock 2006).

In parallel, another branch of research has focused on the study of the individual characteristics of Internet users that lead to online shopping practices (Deng et al. 2010; Baubonienė and Gulevičiūtė, 2015). In this context of research, special attention has been paid to the Technology Acceptance Model (TAM) theory, put forward by Davis (1989). According to this model, perceived usefulness (PU) and perceived ease of use (PEU) are the main determining factors of the adoption of new technologies by users. In this specific case, the effects of perceived usefulness and perceived ease of use on the adoption of e-commerce would be trust and risk perception (Bruner Ii and Kumar 2005; Hernández et al. 2010; Bigné et al. 2010). In this model, it is essential that the e-shopper has an adequate level of information regarding the products and modes of purchase. Handling this information would reduce the level of distrust of Internet users towards online shopping and, as a result, would increase their levels of perceived usefulness with regard to that practice (Barkhi and Wallace 2007; Chen and Tan 2004). In this process, the information affects to a greater extent the perception of the usefulness of the medium to the extent that it is the result of an active search by the consumer (Rowley 2000). In other words, the information has a direct effect on the Internet user's trust, but this effect is greater if the information available is the result of their own search.

Having arrived at this point, the main issue is to find out how Internet users acquire the resources required to search for information autonomously and independently. Some authors suggest that an Internet user's ability to search for information online results from prolonged usage of the Internet for informational purposes (Kan-Min 2010; Zillien and Hargittai 2009). In other words, it is prolonged practice that gives Internet users the resources required for this kind of informational activity.

Research on Digital Inequality has suggested, however, that the informational uses of the Internet are not equally distributed across the population. This result is important for our research given that it could be interpreted as a cause of the limitations for the greater prevalence of e-commerce and, at a deeper level, as a basic element for explaining the existence of a commercial Digital Divide.

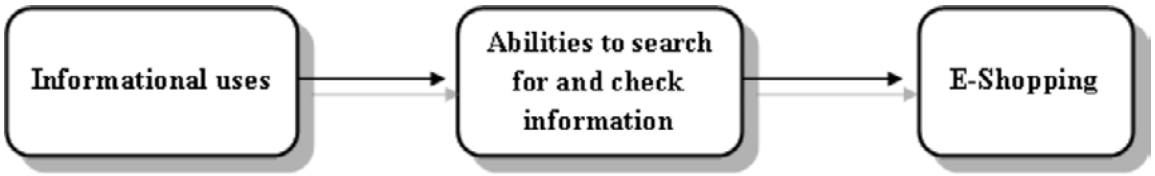
Digital inequality experts suggest that not all Internet uses are evenly distributed across Internet users (DiMaggio et al. 2001; Hargittai and Hinnant 2008; van Dijk 2006). In a context such as the Western world, where Internet access is progressively spreading across the population (Attewell 2001), there remain differences in the uses Internet users make of this technology. More specifically, the informational uses of the Internet and the benefits they bring Internet users, would appear to be more frequent in segments of the population with the high levels of resources and high levels of education (Zillien and Hargittai 2009). For instance, Bonfadelli (2002) shows that people with the highest educational levels use the Internet to search for information more actively. Robinson, DiMaggio and Hargittai (2003), show that citizens with a higher level of education get more advantages from the websites they visit. According to the authors, education, and, occasionally, socioeconomic level, is associated with a more consistent Internet use in the long term. Education is also related with a lower use of the Internet as a means of entertainment. Van Dijk(2005) underlines the fact that the most advanced Internet applications, related with information, education, communication and work, are associated with high social status. Peter and Valkenburg (2006), in a study on Dutch adolescents, have shown that there are differences in Internet

users according to the socioeconomic resources and cognitive resources at their disposal. Adolescents with the greatest resources use the Internet more frequently to obtain information and less frequently for entertainment purposes.

The first goal of this research paper is to find out whether, if indeed, Internet users' abilities for searching and verifying commercial information online have an impact on e-shopping practices. Likewise, their influence will be compared with the influence of searching for general information and the characteristics of commercial websites. This comparison will allow us to understand which variable has the greatest influence on e-shopping practices. For this purpose, a multiple stepwise regression model will be used. This analysis will allow us to show, as the literature holds, the importance of information and verification of commercial information online for explaining e-shopping.

Once this analysis has been carried out, we shall attempt to answer the question as to how Internet users acquire their abilities to search for and verify commercial information. We shall attempt to understand whether, as the studies indicate, experience in searching for information is at the base of the development of this type of digital ability. For this purpose, the mediation model proposed by Baron and Kenny (1986) will be implemented. We seek to find out whether, as the figure below shows, abilities to search for and check information mediate between informational uses and e-shopping.

Figure 1: Relationship between "Informational uses", "Abilities to search for and check information" and "E-Shopping"



The data used have been provided by the survey from the IESA of Córdoba (Spain) "El papel de las nuevas tecnologías en el perfil de compra de la persona consumidora en Andalucía" (The role of new technologies in the purchase profile of consumers in Andalusia) (E 1111) of 2011. Thus, our case study coincides with the Andalusian population.

Lastly, if our model were to be empirically supported, we could speculate with the idea that e-shopping is facing significant limitations for its development and adoption among the general population. This limitation results from, as Digital Inequality maintains, the informational uses of the Internet being much more common among citizens with the greatest educational resources and, therefore, being much less frequent among the population with fewer resources.

3. Methodology

3.1. Data and Sample

To meet the goals established, we have used the study on "El papel de las nuevas tecnologías en el perfil de compra de la persona consumidora en Andalucía" (The role of new technologies in the shopping profile of consumers in Andalusia), carried out by the IESA-CSIC of Córdoba in 2011 (ref. E-1111). This survey aims to provide a view of the consumption behavior of Andalusians, including online consumption behavior. It also includes indicators such as Internet access, type of connection and connection device available to Internet users, Internet uses, attitudes towards shopping and behavior related with searching for information online.

The survey has a sample of 809 subjects from a universe comprised of a population resident in Andalusia of both sexes, aged 18 or over[2]. Computer assisted telephone interviews (CATI) were carried out by means of a structured questionnaire. Interviews were carried out both to landlines and mobile phones.

The questionnaire has a total of 35 questions, plus a further 11 to gather information regarding the subjects' socio-economic characteristics. Questions from Q11 to Q35 regard Internet uses, Internet user profiles and behaviors and attitudes inherent to online shopping. Q12 was used as a filter to select only those subjects who had used the Internet in the last 3 months. This way, we obtain a sample of 561 subjects, comprised exclusively of Internet users.

3.2. Independent variables

As mentioned above, we are interested in the first place in seeing the influence of Internet users' abilities for searching and checking information online on their e-shopping practices. We also want to compare the effect of these abilities and the effect of the information available on online store sites.

To operationalize search abilities, we decided to use a broad variety of online sources with commercial information on products or services (Johnson et al. 2004). Study E1111 contains 8 dichotomous items that measure different sources used by Internet users (P15). These are included in **table 1:**

Table 1: Indicators of diversity of online information sources on products (source: own elaboration based on data from the survey E111 of IESA-CSIC)

When searching for commercial information on Internet products or services, which of the following sources do you use?
General search engine
News and reportages on electronic media
Opinion forums, blogs, social networks
Traditional company websites (mercadona, mediamarket)
Virtual commercial sites (amazon, e-bay, rumbo)
Product brand sites (nike.com, pepsi.es, etc...)
Price comparison engines (rastreator, trivago)
Discount and coupon sites (groupon)

To operationalize the presence of commercial information on the website of the online store, we have used the indicators of study E1111 that measure the importance for Internet users of the presence of information on the product or terms of purchase on the website when it comes to making the purchase. **Table 2** includes these indicators. The higher the score of one of these indicators, the greater the importance of the specific information measured by the indicator.

Table 2: Indicators of the information that is considered to be important to figure on the website where the purchase is made (source: own elaboration based on data from the study E111 of IESA-CSIC)

When it comes to shopping on a website, how important are the following characteristics? Very important, fairly important, slightly important or not important
Clear and comprehensive information regarding mailing and transport
Adequate information regarding how to cancel the purchase
Clear and comprehensive information regarding contractual terms and conditions
Clear and comprehensive information regarding the product/service
Return policy is stated
Prices are clearly indicated

Lastly, in order to implement the necessary analyses for this research, it is necessary to operationalize the informational uses of the Internet. As we have said above, the aim is to find out whether these uses have any role in the development of Internet users' abilities for searching and checking commercial information online. **Table 3** shows the indicators of study E1111 that measure the informational uses of the Internet. These are related mainly with online consumption of new, specialized information regarding education, health or employment issues and geographic information, such as addresses or city maps. These indicators have been widely used by digital inequality researchers.

Table 3: Indicators of the informational uses of the Internet. (source: own elaboration based on data from the study E111 of IESA-CSIC)

Please state how frequently you do each of the following activities through the Internet: Daily, every week, at least once a month, not every month, or never
Read or consult specialised information regarding an issue of your interest (health, education, employment, etc.)
Read or download news items, newspapers or current affair magazines online
Consult maps or other geographic information
Listen to radio online and/or watch TV online

For each of these dimensions, a factorial analysis has been implemented. This has allowed us to summarize information, calculating unit indicators for each dimension and, in addition, studying the possible presence of sub-dimensions (Lawley and Maxwell 1962).

In each of the analyses implemented, the values of the sample adjustment indices and of the determining factor have legitimized the factorialization procedures[3]. In no case have the constructs under study been broken down into subdimensions. For reasons of space, factor saturation of each item is not discussed.

The three factors thus extracted are referred to respectively, as *Abilities for searching and checking commercial information online, Importance of the information available on the website and Informational uses*

of the Internet. These factors have been used as independent variables in a multiple linear regression model.

In addition, a variable was constructed to include the indicators linked to issues of Internet access and which is related with first level digital divide (DiMaggio et al. 2001). Thus, an index has been built that includes the items of the survey E1111 that measure ownership of a DSL Internet connection by the subject, frequency of connection, use of the Internet on mobile phone and ownership of WI-FI devices at home. All these characteristics allow us to measure the *Appropriation of the Internet in the everyday life* of Internet users, distinguishing those with a low access level from those that are more prone to using the Internet (Hassani 2006; Attewell 2001). This variable has been used as a control variable, together with socio-demographic variables, in the multiple regression model and in the mediation model in order to rule out influences attributable to the first level digital divide.

3.3. Dependent variable

Study 2736 contains a battery of 19 dichotomous items created to explore the different types of products or services that the Internet user has purchased online in the 12 months prior to the survey. These items are included in **table 4**.

Table 4: Products/services purchased online in the last 12 months (source: own elaboration based on data from study E111 of the IESA-CSIC)

Products/services purchased online in the last 12 months
Books, music, series or films
Travel or other tourist products or services (hotel, car rental, trips)
Tickets to cinema or other shows
Courses or other educational services
Videogames or online games
Electronics and computing
Furniture
Food
Medicine or other health products (health food and herbalist)
Phone
Auctions
Bank product or service
Lottery, betting
Job seeking services (infojobs)
Contact services for friendship and dating (meetic, badoo)
Fashion
Sports items
Beauty and cosmetics
Other

The dependent variable has been constructed adding the number of positive replies of each subject for each of the items. This way a numeric variable is obtained ranging from 0 (no positive replies) to 19 (all positive replies).

3.4 Analysis

Initially a stepwise multiple regression model was implemented, to see the relative weight on the dependent variable of each of the three independent variables: Importance of the information available on the shopping website, Informational uses of the Internet and Abilities for searching and checking commercial information online. The introduction of each of these variables in the model corresponded to a new "step" of the model. Thus, the increase of R2 has informed us which of the two variables, Abilities for searching and checking commercial information online or Importance of the information available on the shopping website, has a greater influence on the adoption of e-shopping practices by Internet users. In addition, it has given us information regarding a possible influence in the model of the Informational uses of the Internet, a prior and basic step for being able to implement the subsequent mediation model.

In order to show this mediation we shall use the tool proposed by Baron and Kenny (1986). In general terms, this establishes that 4 conditions be met: 1) an effect of the independent variable on the dependent variable, 2) an effect of the treatment on the mediator, 3) the effect of the mediator on the dependent variable, controlling for the treatment, and 4) the effect of the direct treatment on the dependent variable should be lower (in absolute value) than the global effect of the treatment when the mediator is included. If the fourth condition is met, we would be looking at a full mediation if the effect of the treatment were not significant, whereas there would be a partial mediation if the effect were significantly reduced.

4. Results

4.1. Multiple regression

The first step of the regression model includes as independent variables the control variables. In other words, on the one hand, the socio-demographic variables such as level of education, sex, age and professional situation of interviewee and, on the other, the *Appropriation of the Internet in everyday life* by Internet users. In the second step the variable *Importance of the information available on the shopping website* was introduced. The variables *Informational uses of the Internet and Abilities for searching and checking commercial information online* were introduced in steps three and four respectively. **Table 5** shows the summary indices of the model.

Table 5: Summary indices of model. (source: own elaboration based on data from the study E111 of the IESA-CSIC)

Model	*R*	*R squared*	*R squared corrected*	*Change in R squared*
1	.479a	.230	.222	.230
2	.481b	.231	.221	.001
3	.518c	.269	.258	.038
4	.614d	.377	.367	.108

As we can see, the final model explains almost 37% of the variance of the dependent variable. Of the independent variables, the one which contributes the most in terms of explained variance is *Abilities for searching and checking commercial information online*. In fact, the fourth model, where this variable is introduced, contributes only 10% more of explained variance. The *Informational uses of the Internet*, introduced in the third model, is the second variable in order of influence on the dependent variable. Lastly, it must be pointed out that the introduction of the variable *Importance of the information available on the shopping website*, that is, the second model, leaves without change the percentage of variance explained.

On the other hand, the Anova analysis underlines an increase in the F values corresponding to the introduction of the Importance of the information available on the shopping website and Informational uses of the Internet. These values go from 29.115 in the first model ($p<0.001$) to 36.650 in the fourth model ($p<0.001$). These data are a further proof of the increase in the precision of the model due to the introduction of these two variables (Field 2005). This cannot be said about the second model, whose F value drops significantly with regard to the previous model, to 24.363.

Below are the regression coefficients:

Table 6: Regression coefficients. (Source: own elaboration based on data from the study E1111 del IESA-CSIC)

Variables	*B*	*S.E.*	*Beta*
MODEL 1			
(Constant)	-2.753	0.801	
Level of education	0.928	0.173	0.299***
Sex	-0.337	0.198	-0.069
Age	-0.028	0.008	-0.143**
Professional situation	-0.057	0.027	-0.085
Appropriation of the Internet in Everyday Life	0.361	0.051	0.302***
MODEL 2			
(Constant)	-2.708	0.803	
Level of education	0.921	0.173	0.227***
Sex	-0.336	0.198	-0.069
Age	-0.028	0.008	-0.146***
Professional situation	-0.057	0.027	-0.085
Appropriation of the Internet in Everyday Life	0.361	0.051	0.302***
Importance of the information available on the shopping site	0.119	0.143	0.033
MODEL 3			
(Constant)	-1.148	0.843	
Level of education	0.635	0.178	0.156***
Sex	-0.228	0.194	-0.047
Age	-0.023	0.008	-0.116**
Professional situation	-0.061	0.027	-0.091
Appropriation of the Internet in Everyday Life	0.255	0.054	0.214***
Importance of the information available on the shopping site	0.033	0.14	0.009
Informational uses of the Internet	0.577	0.115	0.238***

MODEL 4			
(Constant)	-0.674	0.781	
Level of education	0.538	0.165	0.133**
Sex	-0.119	0.18	-0.024
Age	-0.012	0.007	-0.062
Professional situation	-0.039	0.025	-0.058
Appropriation of the Internet in Everyday Life	0.148	0.052	0.124*
Importance of the information available on the shopping site	0.052	0.13	0.015
Informational uses of the Internet	0.178	0.115	0.074
Abilities for searching and checking commercial information online	1.005	0.11	0.415***

***p<0.001.
**p<0.005.
*p<0.01.

The only control variables significant in all four models are "Level of Education" and "appropriation of the Internet in everyday life ". Age goes from being significant in the first 3 models to not being significant in the last.

The variable *Importance of the information available on the shopping site* is not significant in any of the models in which it appears.

The variable *Informational uses of the Internet* is significant in the third model but, when the variable *Abilities for searching and checking commercial information online* is introduced in the fourth model it becomes non-significant. This result is compatible with the presence of a mediation[4].

The variable Abilities for searching and checking commercial information online, in addition to being significant, is the variable with the greatest effect on the dependent variable. The beta coefficients on the table corroborate this statement.

4.2. Mediation

Table 7 shows the descriptive statistics and the regression coefficients of the mediation model[5].

Table 7: Coefficients of regression of the mediation model. Own elaboration based on the data of study E111 of IESA-CSIC

Variables	*B*	*Typ. Error*	*Beta*	*R^2*
STEP 1				
Informational uses of the Internet	0.563	0.113	.238***	0.04
STEP 2				
Informational uses of the Internet	0.392	0.044	.392***	0.1
STEP 3				
Informational uses of the Internet	0,170	0,112	0,072	0,151
Variety of commercial information sources	1.001	0.107	0.423	

In the first step of the mediation model *Informational uses of the Internet* are related significantly with the dependent variable, e-shopping (β =0.563 p < .001). In the second step, *Informational uses of the Internet* are related significantly with the Variety of commercial information sources (β =0.392 p < .001). Lastly, upon the introduction of *Abilities for searching and checking commercial information online* in the regression equation, the coefficient of the independent variable *Informational uses of the Internet* (β = 0.17, p >.10) ceases to be significant with regard to e-shopping. This is empirical proof of the mediation, operated by the variable *Abilities for searching and checking commercial information online*, on the relationship between *Informational uses of the Internet* and Internet users' e-shopping practices.

5. Conclusions

In this paper we have aimed to study in further depth the determining factors that influence adoption by Internet users of practices of shopping for products and services via the Internet. In addition, we might point to Digital Inequality as the cause of the low level of adoption of e-shopping among the population

As has been said before, this is a practice that brings many advantages, both for consumers and for the companies that decide to enter into this type of business. In fact, the Spanish data speak of an increase in recent years of the prevalence of these practices among Internet users (INE 2011). In addition, an increasing number of companies sell products online (EUROSTAT 2011). However, this growth continues to be slow, especially if compared with the penetration of Internet use among the population (INE 2011). Therefore, it is important to understand the reasons behind the slow spread of this use of the Internet among the population and what mechanisms would facilitate the adoption of this practice. With this aim in mind, several authors have designed models of segmentation of Internet users that distinguish e-shoppers from those who do not shop online, underlining the characteristics peculiar to each of these groups. These characteristics would make it possible to implement ad hoc strategies to spread e-shopping. This is the direction taken by studies by authors such as Brashear et al. (2009) and Barnes et al. (2007).

There has also been research geared to understanding the explanatory mechanisms that, on an individual level, influence the adoption of e-shopping practices (Deng et al. 2010). In this regard, the Technology Acceptance Model has achieved important results (Davis 1989; Bruner Ii and Kumar 2005; Hernández et al. 2010; Bigné et al. 2010). Within this line of research, different authors have underlined how the information available to the consumer reduces trust towards online shopping and, in turn, increases the perceived usefulness of the Internet as a medium for consumption (Barkhi and Wallace 2007; Chen and Tan 2004).

Our paper is framed within this latter research context, attempting to clarify, in the first place, whether the *Abilities for searching and checking commercial information online* favour the adoption of e-shopping practices. More specifically, the aim has been to find out whether it is the abilities for searching and checking commercial information online, more than the mere availability of information on the shopping site, that favour these types of online practices. For this aim, a multiple, stepwise regression model was implemented, that included socio-demographic control variables, the *Internet user status*, the *Importance of the information available on the shopping site* and the *Abilities for searching and checking commercial information online*.

The results show that the multiple regression model, as a whole, has proven to be significant and to explain almost 40% of the dependent variable. This means that the variables chosen have a considerable influence on e-shopping practices. More specifically, among the socio-demographic and control variables, the importance of the level of education of Internet users and of their level of appropriation of the Internet in everyday life is apparent. Both have a positive influence on e-shopping. In addition, the *Importance of the information available on the shopping site* has not been shown to be significant, unlike the *Abilities for searching and checking commercial information online*. This latter variable, in addition to having a positive influence on e-shopping, is the variable that, in absolute terms, explains the greatest variance of the dependent variable. Lastly, also the *Informational uses of the Internet* have proven to be significant within the model, but only if the variable *Abilities for searching and checking commercial information online* is not entered in the model. This result is perfectly compatible with a possible mediation. Having carried out this analysis, we have observed how the relationship between *Informational uses of the Internet* and e-shopping is measured by the *abilities for searching and checking commercial information online*.

Lastly, the fact that the information and the layout of commercial sites have a low level of incidence on e-shopping compared with the individual variables limits the ability of companies to promote this type of practice and increases the weight of the social and individual variables. The impact of factors such as level of security or privacy guaranteed by the website (Eastlick et al. 2006), the management of the product information (M. Kim and Lennon 2008) or the quality of the end of the purchasing or return process (Collier and Bienstock 2006), may not be sufficient to spread this practice among Internet users. Comprehensive and reliable information provided by the company through the Website is not a sufficient incentive to stimulate e-shopping.

However, in order to achieve a deeper understanding of the development of e-shopping, we should take into account the concept of Digital Inequality. (Hargittai and Hinnant 2008) have seen how the informational uses of the Internet are particularly prevalent among citizens with greater resources and a higher level of education (Bonfadelli 2002; Robinson et al. 2003; Van Dijk 2005; Peter and Valkenburg 2006). Given that our results have confirmed the central nature of *Abilities for searching and checking commercial information online* when it comes to adopting e-shopping practices and that these abilities are the result of the ability to use the Internet to search for general information, it seems reasonable to suggest that e-shopping practices could be affected, at their base, by a bias related with Digital Inequality. This thesis would be supported by another of the results of our analysis. The level of education and appropriation of the Internet in the everyday life of Internet users are manifested as significant variables throughout the 4 steps of the regression model. This would imply the existence of a commercial digital divide that prevents the development of e-shopping among groups that are socially less educated and with fewer digital resources.

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