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Explanatory factors of the preference and use of electronic administration in Spain

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Currently, many governments offer their citizens public services through the internet (eGovernment). This article analyzes three factors that could explain the use of eGovernment: sociodemographic profile of citizens, levels of quality of public services offered in this way, and the degree of citizen satisfaction with these services. The results show that citizens who prefer to use the internet as a means of contact or who use eGovernment are characterized as being young people, undergraduate students or with a university degree. On the other hand, those who do not use electronic administration or who prefer the face-to-face channel are mostly elderly people or those with basic education. Secondly, although citizens perceive a high quality and have a high degree of satisfaction with these public services, this does not translate into high rates of use of eGovernment. Finally, increasing the use of electronic administration implies in using simple, intuitive and user-friendly interfaces, especially targeting the elderly and those with basic education.

Keywords: electronic administration; service quality; satisfaction; behavioral intentions; sociodemographic profile.

Factores explicativos de la preferencia y uso de la administración electrónica en España

En la actualidad, muchos gobiernos ofrecen a sus ciudadanos servicios públicos a través de internet (administración electrónica). En este trabajo se analizan tres factores que podrían explicar el uso de la administración electrónica: perfil sociodemográfico de los ciudadanos, niveles de calidad de los servicios públicos ofrecidos por ese medio y grado de satisfacción de los ciudadanos con esos servicios. Los resultados ponen de manifiesto que los ciudadanos que prefieren utilizar internet como medio de contacto o que utilizan la administración electrónica se caracterizan por ser personas jóvenes, con estudios universitarios o estudiantes. En cambio, las personas que no utilizan la administración electrónica o que prefieren el canal presencial son mayoritariamente personas mayores con estudios primarios. En segundo lugar, a pesar de que los ciudadanos perciban una alta calidad y tengan un alto grado de satisfacción con esos servicios públicos, esto no resulta en altas tasas de uso de la administración electrónica. Por último, para incrementar el uso de la administración electrónica es primordial la utilización de interfaces sencillas, intuitivas y fáciles de usar por cualquier persona, especialmente por personas mayores y con estudios primarios.

Palabras clave: administración electrónica; calidad de servicio; satisfacción; intenciones de comportamiento; perfil sociodemográfico.

Fatores explicativos da preferência e uso da administração eletrônica na Espanha

Atualmente, muitos governos oferecem aos seus cidadãos serviços públicos por meio da internet (governo eletrônico). Este artigo analisa três fatores que poderiam explicar o uso do governo eletrônico: perfil sociodemográfico dos cidadãos, níveis de qualidade dos serviços públicos oferecidos por esse meio e grau de satisfação dos cidadãos com esses serviços. Os resultados mostram que os cidadãos que preferem usar a internet como meio de contato ou que usam o governo eletrônico são caracterizados por serem jovens, com estudos universitários ou estudantes. Por outro lado, aquelas pessoas que não usam administração eletrônica ou que preferem o canal face a face são, em sua maioria, pessoas idosas com educação primária. Em segundo lugar, embora os cidadãos percebam uma alta qualidade e tenham um alto grau de satisfação com esses serviços públicos, isso não se traduz em altas taxas de uso de governo eletrônico. Finalmente, a fim de aumentar o uso da administração eletrônica, o uso de interfaces simples, intuitivas e de fácil utilização é essencial, especialmente para os idosos e com o ensino primário.

Palavras-chave: administração eletrônica; qualidade de serviço; satisfação; intenções comportamentais; perfil sociodemográfico.

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1. INTRODUCTION

Since the appearance of the Internet, the number of people who use this technology has grown day by day and, at the same time, there are also increasingly more organizations all over the world who have some kind of presence in this communications Network. In this sense, 80.6% of the Spanish population from 16 to 74 years old have used the Internet in the last three months (Instituto Nacional de Estadística, 2017). Furthermore, many public organisms are using new technologies, particularly the Internet, as a new way of offering their services to citizens, firms and other entities, giving rise to what has been called in the literature electronic Administration or eGovernment (Srivastava & Teo, 2007; Tambouris, 2001). E-Government means four great benefits: the reduction of paper, the continuous provision of a public service, a reduction in the times of responding to citizens and lower rates of mistakes (Akman, Yazici, Mishra, & Arifoglu, 2005). However, there exists a gap between those citizens with access to electronic public services and those who do not use them. Standing out among the explanatory factors of this digital divide are a deficiency of computer infrastructures, particularly in rural areas, the absence of computer knowledge and the skills necessary to take part in the information society, and a lack of interest in what the information society can offer (Instituto Nacional de Estadística, 2017). The reduction of this gap has been the aim of many public organisms with a view to increasing the usage rates of these electronic services among citizens (Osman et al., 2014).

In the literature we can find different proposals to explain how organizations and people adopt the use of eGovernment, based on three widely used models: the Technology Acceptance Model (TAM), the Diffusion of Innovations Theory (DOI) and the Unified Theory of Acceptance and Use of Technology (UTAUT). According to the TAM, founded on the Theory of Reasoned Action (Ajzen & Fishbein, 1980), the use of a technology is determined by a person's attitude toward this technology. This depends on the perceived utility and the perceived ease of use (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989). Later, this model was extended, giving rise to new updates; the TAM2 model (Venkatesh & F. D. Davis, 2000) and the TAM3 model (Venkatesh & Bala, 2008). New variables and moderator factors are incorporated into these models, and the attitude toward the technology is done away with.

According to the Diffusion of Innovations Theory (Rogers, 1995), the use of an innovation depends on five factors: the degree to which this innovation is perceived as better than others that already exist (relative advantage), the degree to which the innovation is in consonance with the potential adopter's values, past experiences and needs (compatibility), the degree to which an innovation is difficult to understand and use (complexity), the degree to which the innovation can be tested (experimentation) and, finally, the degree to which the results of an innovation are visible for other people (visibility).

The UTAUT model was posited by Venkatesh, Morris, and Davis in 2003. Its aim was to integrate in a unique model eight previous models related with the acceptance of new technologies and consumer behavior: the Theory of Reasoned Action (Ajzen & Fishbein, 1980), the TAM (Davis, 1989), the Theory of Planned Behavior (Ajzen, 1991) and the Diffusion of Innovations Theory (Rogers, 1995), among others. According to this model, the use of a technology depends on four constructs: performance expectancy, effort expectancy, social influence and facilitating conditions. Four moderator variables were also proposed: age, sex, experience and behavioral intention.

One of the TAM's first applications to explain the use of eGovernment is in Carter and Bélanger's (2005) study. These authors propose a model which integrates the TAM, the Diffusion of Innovations Theory and the degree of trust that the citizen has in the Internet and in the Public Administration. The results that they obtain show that those citizens who use the Internet more for shopping, leisure, work, social relations, etc., are more inclined to use eGovernment. Likewise, the perceived ease of use (a construct belonging to the TAM) and trust in the Internet and in the Public Administration positively influence the use of eGovernment as well. Lin, Fofanah, y Liang (2011) also use an adaptation of the TAM and they conclude that the behavioral intention of eGovernment is determined by the information quality, the perceived utility, the perceived ease of use and the attitude toward use. The TAM is likewise taken as a reference to explain the use of eGovernment in Jordan (Al-Hujran, Al-Debei, Chatfield, & Migdadi, 2015). These authors suggest that the perceived public value, the ease of use and the citizen's attitude are going to influence the use of these public services. More recently, we in addition find works that, taking as a reference the UTAUT model, explain the use of eGovernment in different countries: Pakistan (Ahmad, Markkula, & Oivo, 2013), Turkey, (Kurfali, Arifoğlu, Tokdemir, & Paçin, 2017) and the United Arab Emirates (Mansoori, Sarabdeen, & Tchantchane, 2018).

Yet, in spite of the broad support that the TAM or the UTAUT have received in the literature, the previous studies show that there is not a consensus about the importance of the constructs or the exact formulation of these models. Thus, depending on the context, it is necessary to incorporate new constructs to more completely explain the use of a specific technology (Moon & Kim, 2001). Another aspect that has also been criticized in the TAM has been the lack of affective or motivational factors, which can influence people's behavior too (Bagozzi, 2007). Moreover, there are important differences in the acceptation and use of a technology depending on people's characteristics (Venkatesh, 2000). Due to these criticisms and the different aims proposed later in this study, these models will not be used in the design of the empirical work.

On the other hand, the measurement of the quality of the public services which are offered through the Internet has generated a great interest in the pursuit of improving this quality and, consequently, the citizens' satisfaction level (Sá, Rocha, & Cota, 2016). In this same sense, Teo, Srivastava and Jian (2009) state that the purpose of eGovernment must be to offer quality public services which mean a value added for the citizens. Specifically, in Spain the Sociological Research Center (CIS) annually carries out a survey ordered by the National Agency for the Evaluation of Public Policies and the Quality of Services (AEVAL) to find out the citizens' opinions about public services and concretely about those that are offered through the Internet. According to this survey, the highest rates of satisfaction with public services is obtained when the method of contact used is the Internet (AEVAL, 2016). Yet, the face-to-face channel (chosen by 74.43% of the respondents) continues being the preferred way of contacting the Public Administration. At a great distance, we find that the respondents prefer using the Internet (11.76%), followed by other means of contact which are less relevant.

Taking as a reference the data of the survey carried out by the CIS in 2014, whose sample size was 2,479 interviews, our work studies if the quality of the public service and the citizens'

satisfaction positively influences their preference for using the Internet as a means of contacting the Public Administration. And, secondly, we analyze if the citizens' demographic profiles have a significant influence on the use of these public services. To carry out the proposals of our research, we have previously done a bibliographic review about the conceptualization of service quality and user satisfaction, both for traditional services and for electronic services. Next, we propose a set of hypotheses which are embodied in the proposed conceptual model. Finally, we carry out the verification of the hypotheses and show our work's main conclusions and limitations.

2. LITERATURE REVIEW

2.1 Nature of an electronic service

The application of technology in service provision means the appearance of a new concept: electronic services (Rust, 2001). Examples of this type of services whose provision is done with the help of a technology can be: ATMs, vending machines, telephone banking, buying products and services through the Internet, etc. The main characteristics of this type of services is its being self-service (Dabholkar, 1996). Unlike traditional services, the provision of an electronic service can be done without the presence of employees, the employee-customer interaction being substituted by the customer interacting with technology (Bitner, Brown, & Meuter, 2000). In this way, customers begin and control the transaction, performing an active role in the service provision, so that they are capable of obtaining the product or service themselves. One of the main technologies used by public or private organizations, and even consumers, to offer their services is the Internet.

The first research which addressed the conceptualization and measurement of service quality appeared in the middle of the 1980s (Bitner, 1990; Grönroos, 1984; Parasuraman, Zeithaml, & Berry, 1985, 1988). The positive effects that offering a superior service quality has for any organization has been highlighted in numerous works. For example, Cronin and Taylor (1992) and Anderson and Sullivan (1993) empirically demonstrate that service quality has a positive influence on the consumers' satisfaction, which in turn influences their future shopping intention. So, how can one measure the quality of a service that is offered through the Internet?

2.2 Evaluation of the quality of electronic services

Parasuraman et al. (1985) state that service quality is more difficult to evaluate by the customer than product quality, as it includes evaluations not only of the results obtained but also of the service provision process. It is therefore a question of a highly subjective concept, similar to an attitude (Bitner, 1990; Zeithaml, 1988).

The majority of authors coincide in service quality being a multidimensional construct. Nevertheless, the agreement breaks down when specifying what its dimensions are. The second point of divergence between researchers has been what instrument turns out to be more valid to measure service quality. One the most known tools is the SERVQUAL model (Parasuraman et al., 1985, 1988). The five original dimensions of this scale are: tangibility, reliability, response

capacity, security and empathy. In this model, the service quality perceived by customers refers to their valuing of the excellence or superiority of a service. This comes from the comparison between what the customers expected to receive (that is to say, their expectations) and what they really receive or perceive that they receive (performance or perception of the result of the service). Yet, when the expectations and the perceptions are measured independently, the calculation of the scores difference (P-E) can present problems of reliability, discriminant validity and variance restriction (Brown, Churchill, & Peter, 1993). Consequently, these latter researchers propose that instead of calculating the score difference through different measures of the expectations and the perceptions, the difference should be measured directly to overcome the previous problems. On the other hand, Cronin and Taylor (1992) advocate using only perceptions to measure service quality (the SERVPERF model).

Nevertheless, there are authors who do not advise applying the theories and concepts about the quality of traditional services to the context of the Internet in the same way, given the significant differences which exist between the two means. In this sense, Parasuraman, Zeithaml and Malhotra (2005) point out that the literature on service quality in traditional markets has as its starting point the services offered by people and given that electronic services are characterized by the lack of human contact, the measurement instruments developed to measure the quality of traditional services may not be totally useful to evaluate the quality of an electronic service. Furthermore, customers are beginning to evaluate new dimensions typical of the Internet, such as the esthetics of the Web page or the quality of the information which appears in it, and that are not relevant in traditional services.

The literature which has addressed the evaluation of the quality of electronic services highlights that this construct has a multidimensional nature, there not being an agreement among researchers when identifying the dimensions. If we carry out a review of the dimensions proposed in the literature, there are basically two approaches when dealing with the conceptualization and measurement of the quality of electronic services (Box 1). The first approach has as its epicenter the technical characteristics of the Web page. However, in the evaluation of the quality of an electronic service we have to bear in mind all those aspects or circumstances which take place before, during and after the interaction with the Web page (Zeithaml, Parasuraman, & Malhotra, 2002). This second approach offers a more complete view of the domain of an electronic service' quality construct. From this perspective, if we wish to evaluate the quality of the electronic services in an integral manner, the measurement instrument must take into account: the evaluation of the interaction with the Web page (quality of process), the evaluation which the customer carries out of the product or service received (quality of result) and in the case of a problem arising, how the Web page or the online company handles it (quality of service recovery) (Collier & Bienstock, 2006, p. 263). Next, we describe the most important dimensions that have appeared in the literature.

2.2.1 Design

The design is the first element which users observe when they visit a Web page. It is recommended that the esthetic appearance of the Web page be attractive to the user, regarding the use of color, types

of letters, multimedia elements, etc. (Aladwani & Palvia, 2002; Loiacono, Watson, & Goodhue, 2002; Yoo & Donthu, 2001). Although it can be considered merely as an esthetic element, previous studies have demonstrated the design's influence on the intention to visit the Web again (Yoo & Donthu, 2001) and customer satisfaction (Tsang, Lai, & Law, 2010).

2.2.2 Funcionality

Functionality refers to the technically correct functioning of the Web page (Aladwani & Palvia, 2002; Collier & Bienstock, 2006). In this sense, the service which is offered through a Web page must be available at any time, the links must function correctly, the loading times must be swift and the Web page must not get blocked. In the context of eGovernment, Papadomichelaki and Mentzas (2012) suggest that this dimension must also be considered in the evaluation of the quality of public services.

2.2.3 Ease of use

In many studies, the Web page's ease of use during the electronic service provision is an important element of the service quality offered (Collier & Bienstock, 2006; Parasuraman et al., 2005). This refers to the easy and fast use of the Web page, so that the user can browse without difficulty from one section to another, facilitating their finding what they are seeking quickly and simply (Zeithaml et al., 2002). From the TAM perspective, some authors stress that the ease of use positively influences the use of eGovernment (Al-Hujran et al., 2015; Carter & Bélanger, 2005; Lin et al., 2011).

2.2.4 Privacy / Security

The privacy / security of personal information is one of the aspects which most concerns online customers (Study on eCommerce B2C 2016-ONTSI). This dimension refers to the degree to which customers believe that the Web page is secure and that their personal information is protected (Parasuraman et al., 2005, p. 219). There is a strong consensus in the literature that this dimension is one of the most important in the evaluation of the quality of an electronic service and one of those which most influences the customer's satisfaction (Janda, Trocchia, & Gwinner, 2002). The literature also emphasizes that privacy / security has a close relation with the trust construct. In this sense, the quality of the public service is determined as well by the degree of trust that the citizen has with respect to the security which the Web page offers (Papadomichelaki & Mentzas, 2012). Likewise, trust in the Internet and in Public Administrations is going to determine the use of eGovernment (Carter & Bélanger, 2005).

2.2.5 Quality of the information

The information which appears in the Web page can be evaluated from two perspectives: content and quality. As to the content or information that must appear, it is advisable for there to be general information about the firm, its products or services, its policies concerning privacy and contact information which can resolve the user's doubts or complaints (Aladwani & Palvia, 2002;

Liu & Arnett, 2000). Regarding the quality of the information, the main attributes which it must fulfill are: to be useful, up-to-date, complete and detailed, easy to read and understand, interesting and exact (Ranganathan & Ganapathy, 2002; Loiacono et al., 2002). This dimension is also very important in the satisfaction of users of electronic services based on offering information (e.g., eGovernment) (Tsang et al., 2010; Papadomichelaki & Mentzas, 2012).

2.2.6 Reliability

Reliability refers to the firm fulfilling its commitments regarding the delivery or provision of the electronic service in the conditions agreed upon (Wolfinbarger & Gilly, 2003). Specifically, reliability means that the product or service which is offered to the customer is exactly what has been requested, that it be delivered or handled quickly and on the date promised and in the case of the service provision involving the disbursement of a specific quantity of money, that the billing process be carried out correctly (Parasuraman et al., 2005; Wolfinbarger & Gilly, 2003). In the context of eGovernment, reliability also refers to correctly providing the public service, without mistakes and at any moment that the citizen requires (Papadomichelaki & Mentzas, 2012).

2.2.7 Response capacity

Lastly, a fundamental dimension in the evaluation of the quality of an electronic service is the way in which the Web page resolves problems or doubts which may arise during the provision. It is recommended that the Web page show data which facilitate the customer's contact with a member of the organization, that the customer service center be operational and that the response offered to the customer be swift and satisfactory (Wolfinbarger & Gilly, 2003; Zeithaml et al., 2002). Some previous studies show the influence of the solving of problems or doubts experienced by customers on their satisfaction (Santouridis, Trivellas y Reklitis, 2009) or on their loyalty intention (Wolfinbarguer and Gilly, 2003). Recently, in the field of public services the importance of solving problems when there are mistakes in the service provision is also evident (Van de Walle, 2016; Papadomichelaki and Mentzas, 2012).

BOX 1 EVALUATION OF THE QUALITY OF AN ELECTRONIC SERVICE

Study	Context	Dimensions
Aladwani and Palvia (2002)	Different electronic services (banking, bookshops, cars and pharmaceutical products)	Technical appropriateness, specific content, quality of the content, appearance of the Web page
Alanezi, Kamil and Basri (2010)	Public services	Design, reliability, response capacity, security/ privacy, personalization, information and ease of use

Continue

Study	Context	Dimensions
Collier and Bienstock (2006)	Online shopping	Quality of the process: functionality; exactitude of the information; design; privacy; ease of use; Quality of the result: punctuality in the delivery; fulfilling the shopping order; physical protection of the product; Quality of the service recovery: interaction with the consumer; resolving of problems/complaints; compensation
Fassnacht and Koese (2006)	Online shopping	Quality of the environment: graphic quality; clear presentation; Quality of the delivery: attractive range, quality of the information, ease of use; technical quality; Quality of result: reliability; functional benefit; emotional benefit;
Janda et al. (2002)	Online shopping	Performance; access; security; sensation; information
Liu and Arnett (2000)	Different electronic services (not specified)	Quality of the information and quality of service; use of the system; entertainment; quality of the system's design
Liu, Du and Tsai (2009)	Different Internet portals	Appropriateness of the information; appearance; ease of use; privacy and security
Loiacono et al. (2002)	Online shopping (CDs, books, plane tickets and hotel bookings)	Easy understanding; intuitive functioning; quality of the information; interactiveness; trust; response time; visual attractiveness; capacity of innovation; flow
Papadomichelaki and Mentzas (2012)	Public services	Ease of use, trust, functionality, reliability, information, helping the citizen
Parasuraman et al. (2005)	Online shopping	E-S-QUAL: Efficiency; performance; availability of the service; privacy; E-RecS-QUAL: response capacity; compensation; contact
Ranganathan and Ganapathy (2002)	Online shopping	Content of the information; design; security; privacy
Tsang et al. (2010)	Online travel agencies	Functionality; quality of the information; fulfillment and response capacity; security; appearance and presentation; relation with the customer
Wolfinbarger and Gilly (2003)	Online shopping	Design; performance/reliability; privacy/security; customer attention
Yoo and Donthu (2001)	Different electronic services (books, music, travel, cars, etc.)	Ease of use; design; speed; security

Source: Elaborated by the authors.

3. PROPOSED MODEL AND DEVELOPMENT OF HYPOTHESES

3.1 Sociodemographic profile and use of the Internet

In Spain, more than 31.5 million people 10 years old and more accessed the Internet on some occasion in 2015 (Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información, 2016). Yet, the use of the Internet differs depending on the person's sociodemographic characteristics. According to this study, the use of the Internet which men and women carry out is quite similar: 78.3% of men connect weekly to the Internet compared to 74.6% of women. Nevertheless, age significantly determines the use of the Internet, so that as the age increases, the percentage of people who use the Net decreases: from 16 to 24 years old (96.8%), from 25 to 34 years old (93.8%), from 33 to 44 years old (89.2%), from 45 to 54 years old (79.1%), from 55 to 64 years old (59.1%) and from 65 to 74 years old (30.7%). The user's occupation also influences the use of the Internet. Thus, the higher percentages are found in students (98%), the self-employed (89.6%), employees (85.6%) and active unemployed (74.3%). On the contrary, the lowest percentages are found in pensioners (40.2%) and people who do housework (40.5%). The level of studies differentiates in the use of the Internet as well. 96.6% of people who have university studies state that they connect weekly to the Internet. On the other hand, this percentage drops to 34.8% for people who only have primary education. Within the context of electronic commerce, recent studies have demonstrated that the person's sex, age and level of studies have a statistically significant influence on the use of the Internet for shopping. According to the National Observatory of Telecommunications and the Information (Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información, 2016), online shopping is mainly carried out by men, young people and people who have a medium-high educational level.

The relation which exists between the person's sociodemographic profile and the use of the Internet to contact Public Administrations has also been a subject of study in the literature. With respect to sex, many studies point out that there are not differences between men and women (Belanger & Carter, 2009; Colesca & Dobrica, 2008; Reddick, 2005; Taipale, 2013; Van Dijk, Pieterson, Van Deuren, & Ebbers, 2007). However, the age and the educational level appear as strong predictors of the use of eGovernment. In this sense, younger people have a greater tendency to use the Internet to carry out their procedures with the Public Administrations while older people prefer other channels (Belanger & Carter, 2009; Colesca & Dobrica, 2008). On the other hand, as the educational level increases, the use of eGovernment rises (Belanger & Carter, 2009; Colesca & Dobrica, 2008; Taipale, 2013; Van Dijk et al., 2007). As to employment, Van Dijk et al. (2007) state that workers, students and the unemployed use these services more intensely than pensioners, homemakers, or handicapped people. Based on these studies, we propose the following hypotheses which appear in Figure 1:

H_{1a}: sex influences the preference for the Internet as a means of contact with the Public Administration.
H_{1b}: age influences the preference for the Internet as a means of contact with the Public Administration.
H_{1c}: the educational level influences the preference for the Internet as a means of contact with the Public Administration.

H_{1d}: the marital status influences the preference for the Internet as a means of contact with the Public Administration.
H_{1e}: the work situation influences the preference for the Internet as a means of contact with the Public Administration.
H_{1f}: religiousness influences the preference for the Internet as a means of contact with the Public Administration.

H_{2a}: sex influences the use of eGovernment.
H_{2b}: age influences the use of eGovernment.
H_{2c}: the educational level influences the use of eGovernment.
H_{2d}: the marital status influences the use of eGovernment.
H_{2e}: the work situation influences the use of eGovernment.
H_{2f}: religiousness influences the use of eGovernment.

3.2 Quality of service, satisfaction and consumer behavior

In the context of traditional services, some studies emphasize that the use of the service which an organization presents is fundamentally determined by the service quality offered. In this sense, some researchers sustain that the service quality has a direct and positive influence on the intention to recommend the service to other people, on repeat purchases, on the recommendation of the supplier and on the acceptance of a higher price (Zeithaml, Berry, & Parasuraman, 1996). In the context of online shopping, the positive influence of the service quality on the consumers' behavior or behavioral intentions has also been demonstrated (e.g., their loyalty) (Parasuraman et al., 2005; Wolfinbarger & Gilly, 2003).

From a second perspective, there exists broad theoretical and empirical evidence which underscores that satisfaction has a mediator effect between the service quality and the consumer's behavior. Theoretically, this mediator effect of satisfaction is based on Bagozzi's (1992) model, where the cognitive evaluations (service quality) antecede emotions (satisfaction with the service) and on Oliver's (1997) model, according to which the cognitive evaluation of the service generates an affective or emotional response that leads to a behavior or behavioral intention. Empirically, studies also appear in the literature which maintain that satisfaction has a mediator effect between the service quality and the consumer's behavior. For example, Cronin and Taylor (1992) demonstrate that the service quality has a positive influence on satisfaction, which in turn determines the shopping intention. Dabholkar, Shepherd and Thorpe (2000) also support this mediator effect of satisfaction between the service quality and the intention of using the service in the future and the intention of recommending the service to other people. Cronin, Brady, and Hult's (2000) study demonstrates again the mediator effect of satisfaction between the service quality and three behavioral intentions: the intention of choosing the same provider again, the intention of recommending the service to other people and the likelihood of using the service again. More recently, in the area of hospital services, the mediator effect of satisfaction between the service quality and the customer's loyalty has been demonstrated as well (Chary & Pai, 2016; Shabbir, Malik, & Malik, 2016). From the point of view of online shopping, this mediator effect of satisfaction between the service quality and the consumer's behavior has also been noted (Collier & Bienstock, 2006).

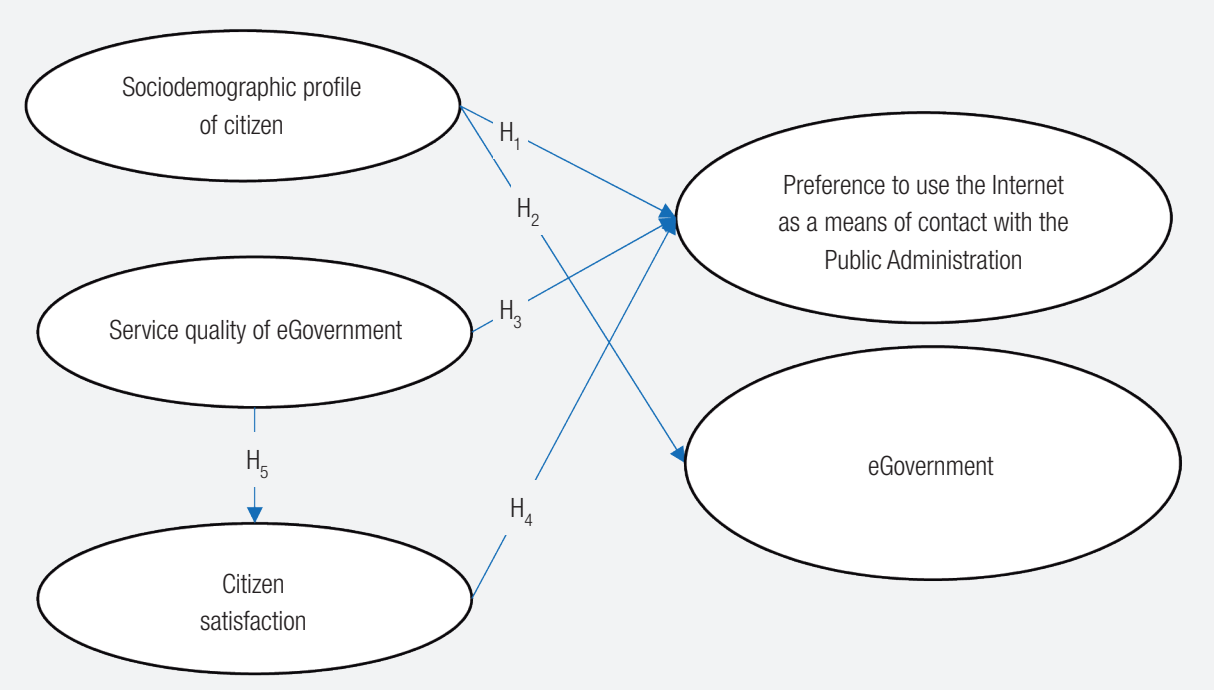
Within the context of eGovernment, Teo et al. (2009) indicate that the success of a Web page which a public service offers will depend on the citizens' satisfaction with this service and on the continuity in the use of this Web page. In this same line, previous studies also point out that the user's satisfaction with eGovernment significantly influences the use of these electronic services and their future development in society (Cohen, 2006; Reddick & Roy, 2013; Teo et al., 2009; Verdegem & Verleye; 2009; Welch, Hinnant, & Moon, 2004). As to the factors that are determinant of satisfaction with eGovernment, the service quality, the system quality, the information quality, the trust in the Public Administration and the security/privacy of the transactions stand out (DeLone & McLean, 2003; Teo et al., 2009; Verdegem & Verleye, 2009; Wang & Liao, 2008; Welch et al., 2004). Therefore, the following hypotheses are formulated which are reflected in Figure 1.

H_3: the quality of the public service offered through the Internet positively influences the preference to use eGovernment as a means of contact.

H_4: the satisfaction with the public service offered through the Internet positively influences the preference to use eGovernment as a means of contact.

H_5: the quality of the public service offered through the Internet positively influences the user's satisfaction.

FIGURE 1 CONCEPTUAL MODEL PROPOSED



Source: Elaborated by the authors.

4. METHODOLOGY

To carry out the proposals of our research, we have used the data of the survey done by the Sociological Research Center (CIS) in 2014, ordered by the National Agency for the Evaluation of Public Policies and the Quality of Services (AEVAL). The size of the sample is 2,479 interviews, belonging to a population of residents in Spain, 18 years old or more, of both sexes. The sampling procedure used in this study was multistage, stratified by conglomerates, with a randomly proportional selection of the primary sampling units (municipalities) and the secondary units (sections), and by random routes and gender and age quotas for the last units (people). The questionnaires have been administered via personal interviews in homes. For a confidence level of 95.5% (two sigmas), and P = Q, the real error is ±2.0% for the set of the sample and in the supposition of a simple random sampling. The surveys were done from the 11th to the 25th of June 2014.

To verify the hypotheses H_1, H_2, H_3 and H_4, the analysis of the contingency tables was recommended given the categorical nature of the dependent and independent variables (Hair, Anderson, Tatham, & Black, 1999). In this analysis, the Chi-squared independence test verifies the hypothesis that the variables are independent, compared to the alternative hypothesis that one variable is distributed differently for the diverse levels of the other. On the other hand, the corrected typified residuals indicate if the difference between the frequency observed and the frequency expected is statistically significant. To verify hypothesis H_5 we will use structural equation model methodology with the AMOS V.22 statistic software. This methodology is appropriate to verify relations of dependence when there exist latent constructs (not directly observable) measured in a set of observable variables or indicators (Byrne, 2009).

4.1 Sociodemographic profile and preference for means of contact with the Public Administration

In Table 1 appears the relation between the person's sociodemographic variables and the means of contact preferred to contact the Public Administration. As can be noted, the values of the Chi-squared statistics are statistically significant for all the variables ($p<0.05$), which means that there exists a relation of dependence between the means of contact chosen and the person's sociodemographic characteristics. The corrected typified residuals measure the degree of association between the variables. For a confidence level of 95%, those residuals greater than 1.96 indicate that the number of people is greater than expected if the variables were independent, while the residuals less than -1.96 signify that the number of people is less than that expected under the condition of independence. From the corrected typified residuals, the sociodemographic profile of the people who choose each of the different means of contact is described.

The means preferred by the majority of the citizens to contact the Public Administration is face-to-face (73.68%). These people are characterized by having primary studies, being older than 48, Catholic, who are retired or pensioners, widows or widowers, married or separated and are mainly women. Secondly, and far off, the preferred means of contact is through the Public Organism's Web page (12.27%). The people who choose this means mainly have university studies, are less than 49 years old, are frequently students, consider themselves to be non-believers or atheists, are single and a high proportion of them are men. In third place, the respondents prefer phone contact (9.10%).

This means is chosen by people who are characterized by being workers and with a great majority of people less than 48 years old. Lastly, the means of contact least preferred by the respondents was email (4.95%). The majority of the people who choose this means have university studies, are mostly less than 48 years old, consider themselves to be atheists or non-believers, have a job and are single. Therefore, the preference for the means of contact with the Public Administration is determined in a statistically significant manner by the respondents' sociodemographic characteristics, which leads us to accept the hypotheses H1a, H1b, H1c, H1d, H1e and H1f. Furthermore, the variables which have a greater influence are the educational level and the age (greater significance of the corrected typified residuals).

TABLE 1 INFLUENCE OF THE SOCIODEMOGRAPHIC PROFILE ON THE MEANS OF CONTACT PREFERRED

Sociodemographic variable (χ^2; sig.)	In person (1652; 73.68%)	By phone (204; 9.10%)	By email (111; 4.95%)	Through the Web page (275; 12.27%)
Sex (χ^2:10.800; 0.013)				
Men	787 (-2.398)	98 (-0.334)	57 (0.475)	160 (3.198)**
Women	865 (2.398)*	106 (0.334)	54 (-0.475)	115 (-3.198)**
Age (χ^2: 76.826; 0.000)				
48 years old or less	840 (-8.331)**	129 (2.164)*	80 (3.485)**	208 (6.981)**
49 years old or more	812 (8.331)**	75 (-2.164)*	31 (-3.485)**	67 (-6.981)**
Educational level (χ^2: 236.115; 0.000)				
Primary education	402 (10.473)**	24 (-2.807)**	0 (-5.257)**	3 (-8.121)**
Secondary education	1025 (1.022)	131 (0.861)	56 (-2.435)**	165 (-0.516)
University studies	225 (-11.665)**	49 (1.731)	55 (8.219)**	107 (8.706)**
Marital status (χ^2: 57,649; 0,000)				
Married	950 (2.866)**	98 (-2.313)*	59 (-0.556)	142 (-1.452)
Single	463 (-6.055)**	84 (3.093)**	47 (2.502)*	114 (3.761)**
Widow/er	115 (3.777)**	12 (0.025)	2 (-1.862)	2 (-3.861)**
Separated	58 (2.658)**	1 (-2.175)*	1 (-1.306)	6 (-0.798)
Divorced	66 (0.286)	9 (0.375)	2 (-1.182)	11 (0.068)
Work situation (χ^2: 119.879; 0.000)				
Works	637 (-6.609)**	109 (3.255)**	63 (3.074)**	148 (3.985)**

Continue

Sociodemographic variable (χ^2; sig.)	In person (1652; 73.68%)	By phone (204; 9.10%)	By email (111; 4.95%)	Through the Web page (275; 12.27%)
Retired or pensioner (has worked before)	364 (6.413)**	29 (-1.781)	10 (-2.723)**	20 (-5.247)**
Pensioner (has not worked before)	49 (2.133)*	6 (0.380)	0 (-1.745)	2 (-2.042)*
Unemployed and has worked before	370 (0.523)	38 (-1.262)	23 (-0.365)	65 (0.645)
Unemployed and seeking first job	20 (0.377)	3 (0.435)	1 (-0.261)	2 (-0.715)
Student	71 (-4.135)**	10 (-0.384)	8 (0.817)	34 (5.347)**
Unpaid housework	141 (4.305)**	9 (-1.586)	6 (-0.727)	4 (-3.908)**
Religious beliefs (χ^2: 65.914; 0.000)				
Catholic	1214 (6.801)**	133 (-1.413)	57 (-4.270)**	155 (-5.067)**
Believer in another religion	60 (-0.108)	10 (0.993)	3 (-0.550)	9 (-0.363)
Non-believer	246 (-4.167)**	39 (0.903)	30 (2.935)**	63 (2.861)**
Atheist	132 (-5.179)**	22 (0.419)	21 (3.240)**	48 (4.441)**

Source: Elaborated by the authors.

Notes:

The respondents who answered do not know or did not answer were eliminated.

Five respondents were eliminated who preferred contact by mail given its scant relevance.

The sample has been divided by age, taking as a reference the average age of 48 years old.

*p < 0.05 (corrected typified residuals with absolute value over 1.96)

**p < 0.01 (corrected typified residuals with absolute value over 2,58).

4.2 Sociodemographic profile and use of eGovernment

70.38% of the people of the CIS survey state that they have used the Internet in the last twelve months (1,578 people). Of these, 69.83% declare that they have used the Internet as a means of contact with the Public Administration, while the rest, although they use the Internet, use other means of contact (30.17%). Table 2 shows that the respondents' sociodemographic variables, with the exception of sex, significantly influence the use of the Internet to carry out any procedure or query with the Public Administration (significant Chi-squared values: $p<0.05$). Moreover, the variables which present a greater influence are: the educational level, the religious beliefs and the age (corrected typified residuals higher than in absolute value). In this sense, the majority of the respondents who use eGovernment have university studies, declare themselves to be atheists, are 48 years old or less, are frequently students and are mainly divorced. On the contrary, most of those who do not use eGovernment have primary or secondary studies, are retired or do unpaid housework, consider themselves to be Catholics or believers in another religion, are 49 years old or more and are often widows/widowers. Therefore, the hypotheses H_{2b}, H_{2c}, H_{2d}, H_{2e} and H_{2f} are also accepted, while hypothesis H_{2a} is rejected.

TABLE 2 USE OF EGOVERNMENT ACCORDING TO SOCIODEMOGRAPHIC VARIABLES

Sociodemographic variable (χ^2; sig.)	Use eGovernment (1.102; 69.83%)	Do not use eGovernment (476; 30.17%)
Sex (χ^2: 0.685; 0.408)		
Men	576 (0.828)	238 (-0.828)
Women	526 (-0.828)	238 (0.828)
Edad (χ^2: 11,600; 0,001)		
48 years old or less	828 (3.406)**	318 (-3.406)**
49 years old or more	274 (-3.406)**	158 (3.406)**
Educational level (χ^2: 71,789; 0,000)		
Primary education	34 (-6.025)**	50 (6.025)**
Secondary education	727 (-3.465)**	356 (3.465)**
University studies	341 (6.746)**	70 (-6.746)**
Marital status (χ^2: 12.507; 0.014)		
Married	554 (-1.050)	253 (1.050)
Single	453 (1.382)	178 (-1.382)
Widow/er	15 (-2.145)*	14 (2.145)*
Separated	28 (-1.556)	19 (1.556)
Divorced	52 (2.031)*	12 (-2.031)*
Work situation (χ^2: 35.539; 0.000)		
Works	595 (1.688)	235 (-1.688)
Retired or pensioner (worked before)	76 (-3.709)**	60 (3.709)**
Pensioner (did not work before)	1 (-1.379)	2 (1.379)
Unemployed and worked before	286 (0.840)	114 (-0.840)
Unemployed and seeking first employment	13 (-1.685)	11 (1.685)
Student	99 (2.681)**	24 (-2.681)**
Unpaid housework	32 (-3.189)**	30 (3.189)**
Religious beliefs (χ^2: 32.181; 0.000)		
Catholic	657 (-3.256)**	325 (3.256)**
Believer in another religion	34 (-2.266)*	26 (2.266)*
Non-believer	238 (0.732)	95 (-0.732)
Atheist	173 (5.117)**	30 (-5.117)**

Source: Elaborated by the authors.
Notes:
The respondents who answered do not know or did not answer were eliminated.
The sample has been divided by age, taking as a reference the average age of 48 years old.
*p < 0.05 (corrected typified residuals with absolute value over 1.96)
**p < 0.01 (corrected typified residuals with absolute value over 2.58).

4.3 Influence of service quality and satisfaction on preference to use the Internet as means of contact with the Public Administration

In the survey used by the CIS, the aspects which configure the service quality offered through a Public Organism's Web page are the following: the ease of use of the Web page, the information which it contains, the time it takes to obtain the information or carry out the procedure, the functions of user help/service, the information which it contains about other possible aspects or procedures, the easy comprehension of the content (clear language) and the possibility of visiting it in various languages. Of the 1,102 respondents who state that they use eGovernment, 622 evaluate these aspects completely on a scale from (1) very satisfied, (2) quite satisfied, (3) not very satisfied, to (4) not at all satisfied. In general, the degree of satisfaction is quite high (Table 3), with 73.81% to 85.4% saying that they are quite or very satisfied. The global satisfaction with the service received through the Web page is measured with an ordinal scale of five options: very satisfied (1), quite satisfied (2), neither satisfied nor dissatisfied (3), not very satisfied (4), and not at all satisfied (5). In this case, 75.44% of the respondents are quite satisfied or very satisfied with the public service received through these means. Nonetheless, although the perceived quality with the different aspects of the Web page and the global level of satisfaction with the service received are quite high, only 21.06% of these people state that their preferred channel is the Public Organism's Web page, while 78.94% prefer to resolve their procedures using other means of contact.

TABLE 3 DEGREE OF SATISFACTION WITH THE EGOVERNMENT SERVICES

Elements of the service quality of the eGovernment	Very satisfied	Quite satisfied	Neither satisfied nor dissatisfied	Not very satisfied	Not at all satisfied
Ease of use	15.40%	65.87%	-	16.51%	2.22%
The information that it contained	16.03%	66.35%	-	15.87%	1.75%
The time it took to achieve the information or carry out the procedure	16.03%	58.57%	-	21.75%	3.65%
The functions of user help/service	11.75%	62.06%	-	22.70%	3.49%
The information it contained about other possible aspects or procedures	11.90%	66.19%	-	19.21%	2.70%
The easy comprehension of the content (clear language)	14.76%	61.90%	-	19.52%	3.81%
The possibility of visiting it in different languages	13.65%	71.75%	-	12.38%	2.22%
Global satisfaction with the eGovernment service	13.33%	62.11%	9.32%	12.28%	2.96%

Source: Elaborated by the authors.

Next, we ask if there is an aspect of the Web page evaluated positively by the citizens which significantly influences their preference to use this means of contact with a Public Organism. As in shown in Table 4, only the Web page's ease of use has a statistically significant influence (χ^2: 3,520; 0,061). In this sense, the people who choose the Web page as a means of contact with the Public Administration are characterized as being quite or very satisfied with the ease of use of the Web page. The degree of satisfaction with the rest of the elements which configure the service quality, as well as the degree of global satisfaction, do not have a statistically significant influence on the preference for using the Web page as a means of contact (insignificant Chi-squared values: p>0.1). Therefore, the service quality and the user's satisfaction with the public service received through the Internet do not have a statistically significant influence on the preference for using the Internet as a means of contact. This leads us to reject hypotheses H_3 and H_4.

TABLE 4 INFLUENCE OF THE SERVICE QUALITY AND SATISFACTION ON MEANS OF CONTACT

Degree of satisfaction (χ^2; sig.)	Web page (131; 21.06%)	Other means of contact (491; 78.94%)
Ease of use (χ^2: 3.520; 0.061)		
Not very or not at all satisfied	17 (-1.876)	99 (1.876)
Quite or very satisfied	114 (1,876)	392 (-1,876)
The information that it contained (χ^2: 1.154; 0.283)		
Not very or not at all satisfied	19 (-1,074)	91 (1,074)
Quite or very satisfied	112 (1,074)	400 (-1,074)
The time it took to get the information or carry out the procedure (χ^2: 2,010; 0,156)		
Not very or not at all satisfied	27 (-1.418)	131 (1.418)
Quite or very satisfied	104 (1.418)	360 (-1.418)
The functions of user help/service (χ^2: 2.686; 0.101)		
Not very or not at all satisfied	27 (-1.639)	136 (1.639)
Quite or very satisfied	104 (1.639)	355 (-1.639)
The information that it contained about other possible aspects of procedures (χ^2: 0.193; 0.660)		
Not very or not at all satisfied	27 (-0.440)	110 (0.440)
Quite or very satisfied	104 (0.440)	381 (-0.440)

Continue

Degree of satisfaction (χ^2; sig.)	Web page (131; 21.06%)	Other means of contact (491; 78.94%)
The easy comprehension of the content (clear language) (χ^2: 0.012; 0.915)		
Not very or not at all satisfied	31 (0,107)	114 (-0,107)
Quite or very satisfied	100 (-0,107)	377 (0,107)
The possibility of visiting it in other languages (χ^2: 0.622; 0.430)		
Not very or not at all satisfied	22 (0.789)	69 (-0.789)
Quite or very satisfied	109 (-0.789)	422 (0.789)
Global satisfaction (χ^2: 1.021; 0.312)		
Not very or not at all satisfied, or neither satisfied nor dissatisfied	28 (-1.010)	126 (1.010)
Quite or very satisfied	103 (1.010)	365 (-1.010)

Source: Elaborated by the authors.
Note: Those respondents who answered a variable with do not know or do not remember have been eliminated.

Influence of the service quality dimensions on satisfaction with the eGovernment

Lastly, we evaluate the influence of these aspects which configure the service quality offered through the Web page on the global satisfaction with the eGovernment. As a previous step to the estimation of the model, it is necessary to check if the variables observed follow a multivariate normal distribution (Table 5). To do so, we use Mardia's (1970) test. The results obtained show the rejection of the variables following a normal distribution at a level of 0.05 (critical levels of asymmetry and kurtosis in absolute value greater than 1.96). Likewise, the hypothesis of multivariate normality can also be rejected as it has a critical coefficient equal to 54.902 (above 5.99 at a level of 0.05). Given that the variables do not follow a multivariate normal distribution, it is recommended to estimate the model's parameters with the asymptotic distribution-free method (Byrne, 2009).

TABLE 5 EVALUATION OF THE MULTIVARIATE NORMALITY

Variable	Minimum	Maximum	Asymmetry	Critical coef.	Kurtosis	Critical coef.
Various languages	1	4	0.642	6.577	1.924	9.859
Clear language	1	4	0.518	5.308	0.572	2.931
Other information	1	4	0.521	5.343	0.917	4.697
Help	1	4	0.461	4.719	0.498	2.551

Continue

Variable	Minimum	Maximum	Asymmetry	Critical coef.	Kurtosis	Critical coef.
Time	1	4	0.413	4.233	0.240	1.231
Information	1	4	0.411	4.213	0.874	4.480
Ease of use	1	4	0.471	4.823	0.906	4.640
Global satisfaction	1	5	1.100	11.269	0.759	3.888
Multivariate	-	-	-	-	55.336	54.902

Source: Elaborated by the authors.

Table 6 shows the standardized regression loadings when estimating the model proposed. As can be observed, all are significant. Yet, there are two elements which have a greater influence on the respondents' global satisfaction with the service that they have received: the Web page's ease of use and the information which appears in it being easily comprehensible. The least relevant element is that the Web page has the option to be read in various languages. This is a result to be expected given that the majority of the users are Spanish citizens. The variance explained of the global satisfaction variable was 59.8%, above the recommended value of 30% (Hair et al., 1999). In the light of these results, we can conclude that the service quality positively influences the citizen's satisfaction, which leads us to accepting hypothesis H_5.

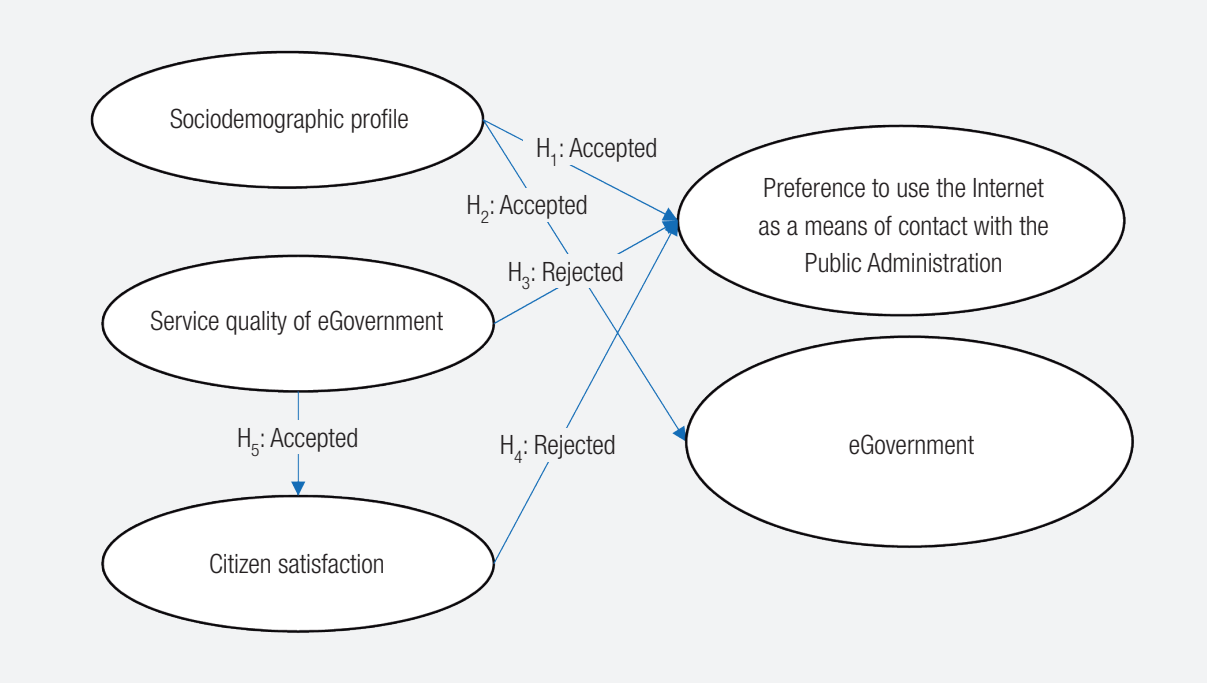
TABLE 6 INFLUENCE OF THE ASPECTS OF THE WEB PAGE ON GLOBAL SATISFACTION

			Standardized regression loading	Standard error	Critical coef.
Ease of use	→	Global satisfaction (R^2: 0.598)	0.229***	0.079	4.305
Information	→		0.104*	0.066	2.396
Time	→		0.125**	0.058	2.837
Help	→		0.116*	0.071	2.305
Other information	→		0.103*	0.071	2.181
Clear language	→		0.174***	0.062	3.853
Various languages	→		0.070*	0.056	1.986

Source: Elaborated by the authors.
Notas: * $p < 0.05$ (C.R. > 1.96); ** $p < 0.01$ (C.R. > 2.576); *** $p < 0.001$ (C.R. > 3.31)

Figure 2 graphically summarizes the verifications of the hypotheses carried out.

FIGURE 2 RESULTS OF THE VERIFICATIONS OF THE HYPOTHESES



Source: Elaborated by the authors.

5. DISCUSSION, IMPLICATIONS AND CONCLUSIONS

Many governments are concerned about the gap which exists between the efforts made by the Public Administrations to offer their services through the Internet and the degree of adoption by citizens (Osman et al., 2014). This is why the present work has gone deeply into three factors which could be related with using or not using eGovernment: the citizens' sociodemographic profile, the public service quality offered through the Internet and the citizens' degree of satisfaction with this public service.

Firstly, our work shows that the preference for different means of contact with the Public Administration (face-to-face, by phone, email or Web page) is closely linked to the citizen's sociodemographic profile. In this way, four segments of citizens can be established according to the means chosen. These segments differ as to sex, age, educational level, marital status, work situation and religious beliefs. Likewise, it also stands out that the sociodemographic profile is related to using or not using eGovernment. Specifically, the results stress that the variables sex, educational level, age, marital status, religious beliefs and work situation influence the use of the Internet in a statistically significant manner as a means to carry out any procedure or query with the Public Administration. Furthermore, the variables which have a greater influence are: the educational level and the age.

In this sense, the citizens who prefer using the Internet as a means of contact or who actually use eGovernment are characterized as being young people who have university studies or are students. On the other hand, those people who do not use eGovernment or who prefer the face-to-face channel as a means of contact are in their majority older people with primary studies. Curiously, these two segments of the population correspond with being an Internet user / online shopper and not being an Internet user / online shopper, respectively (Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información, 2016). It is also necessary to highlight that the digital divide linked to sex in relation to the use of eGovernment is closing, a result which had already been anticipated for the Spanish case (Rufín Moreno, Molina, Figueroa, & Moreno, 2013). We therefore believe that as the use of the Internet becomes generalized to all the population, especially to older people with a low level of studies, the use of the Internet for shopping and the use of eGovernment will increase.

Secondly, the literature shows that the use of the service that an organization offers is conditioned by the service quality provided and by the customers' degree of satisfaction. However, although the levels of quality and satisfaction with Spanish eGovernment are very high, this is not translated into high rates of use of this means of contact. Even only 21.06% of those citizens who state that they use eGovernment prefer contacting the Public Administration through the Internet, the rest favoring the use of other channels. In this line, we have also posited if the positive/negative evaluation of an element of the Web page positively/negatively influences the preference for using the Web page as a means of contact. In this sense, most citizens who prefer the electronic channel state that they are quite or very satisfied with the Web page's ease of use. Neither a high evaluation of the rest of the elements of the Web page nor a general high level of satisfaction with the service received positively influences the preference for using the Internet. Therefore, in the context of Spanish eGovernment, high levels of service quality and high levels of satisfaction do not translate into a greater use or higher preference for the Internet as a means of contact.

Lastly, our work shows that the evaluation of different aspects of the Web positively influences the citizen's satisfaction with the public service received. Therefore, the relation between service quality and satisfaction confirmed in the literature by many studies is also demonstrated in this work. Specifically, the two elements which have a greater influence are: the Web page's ease of use and for the information which appears in it to be easily comprehensible. Therefore, the Public Administrations must develop simple, intuitive interfaces with a clear and easy to understand language to increase the use of eGovernment in Spain. These elements are particularly vital for older people or those who have a low level of education.

As limitations it must be borne in mind that the use of eGovernment is measured according to the citizens having made a query or information search, but not that they have completed the provision of any service through the Internet. Therefore, the term "use" must be taken with caution. Moreover, from our point of view, we believe that some elements could be incorporated as part of the evaluation of the quality of the public services of the Spanish eGovernment. For example, in some procedures, the citizen has to offer personal information through the Internet. The degree to which users believe that the Web page is secure, that their personal information is protected and the degree of trust in these electronic services are elements which must be taken into account to increase the use of eGovernment (Alzahrani, Al-Karaghouli, & Weerakkody, 2016; Kurfali et al., 2017). Likewise,

another element which could also be evaluated as part of the measurement of the eGovernment's quality is its reliability or to what extent the citizens believe that the service through the Internet fits and responds to their needs. Previous studies have demonstrated that this dimension has a great influence on the customer's satisfaction (Collier & Bienstock, 2006; Wolfinbarger & Gilly, 2003) and on the continued use of a Web page (Parasuraman et al., 2005). And a third aspect which also should be considered as part of the service quality is the Web page's design. This is the first element that the users observe and if the design is attractive, this will increase both the intention of visiting it again (Yoo & Donthu, 2001) and the user's satisfaction (Tsang et al., 2010).

REFERENCES

Agencia Estatal de Evaluación de las Políticas Públicas y la Calidad de los Servicios. (2016). *Estabilidad y mejoría en los servicios públicos*. Madrid: Ministerio de Hacienda y Administraciones Públicas.

Ahmad, M. O., Markkula, J., & Oivo, M. (2013). Factors affecting e-government adoption in Pakistan: a citizen's perspective. *Transforming Government: People, Process and Policy*, *7*(2), 225-239.

Ajzen, I. The theory of planned behavior. (1991). *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.

Ajzen, I., Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs: Prentice-Hall.

Akman, I., Yazici, A., Mishra, A., & Arifoglu, A. (2005). E-Government: a global view and an empirical evaluation of some attributes of citizens. *Government Information Quarterly*, *22*(2), 239-257.

Aladwani, A. M., & Palvia, P. C. (2002). Developing and validating an instrument for measuring user-perceived web quality. *Information & Management*, *39*, 467-476.

Alanezi, M. A., Kamil, A., & Basri, S. (2010). A proposed instrument dimensions for measuring e-government service quality. *International Journal of U- and E-Service, Science and Technology*, *3*(4), 1-18.

Alawneh, A., Al-Refai, H., & Batiha, K. (2013). Measuring user satisfaction from e-Government services: lessons from Jordan. *Government Information Quarterly*, *30*(3), 277-288.

Al-Hujran, O., Al-Debei, M. M., Chatfield, A., & Migdadi, M. (2015). The imperative of influencing citizen attitude toward e-government adoption and use. *Computers in Human Behavior*, *53*, 189-203.

Alzahrani, L., Al-Karaghouli, W., & Weerakkody, V. (2016). Analysing the critical factors influencing trust in e-government adoption from citizens' perspective: a systematic review and a conceptual framework. *International Business Review*, *26*(1), 164-175.

Anderson, E. W., Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, *12*, 125-143.

Bagozzi, R. P. (2007). The legacy of technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems*, *8*(4), 244-254.

Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social psychology quarterly*, *55*(2), 178-204.

Belanger, F., & Carter, L. (2009). The impact of the digital divide on e-government use. *Communications of the AC*, *52*(4), 132-135.

Bitner, M. J. (1990). Evaluating service encounters: the effects of physical surroundings and employee responses. *Journal of Marketing*, *54*(2), 69-82.

Bitner, M. J., Brown, S. W., & Meuter, M. L. J. (2000). Technology infusion in service encounters. *Journal of the Academy of Marketing Science*, *28*(1), 138-149.

Brown, T. J., Churchill, G. A., Jr., & Peter, J. P. (1993). Improving the measurement of service quality. *Journal of Retailing*, *69*(1), 127-139.

Byrne, B. M. (2009). *Structural equation modelling with Amos: basic concepts, applications, and programming*. New York: Routledge.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, *15*(1), 5-25.

Chary, S., & Pai, Y. (2016). Measuring patient-perceived hospital service quality: a conceptual framework. *International Journal of Health Care Quality Assurance*, *29*(3), 300-323.

Cohen, J. E. (2006). Citizen satisfaction with contacting government on the internet. *Information Polity*, 11(1), 51-65.

Colesca, S. E., & Dobrica, L. (2008). Adoption and use of e-government services: the case of Romania. *Journal of Applied Research and Technology*, *6*(2), 204-217.

Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. *Journal of Service Research*, *8*(3), 260-275.

Cronin, J. J., Jr., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing*, *76*(2), 193-218.

Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: a reexamination and extensión. *Journal of Marketing*, *56*, 55-68.

Dabholkar, P. A. (1996). Consumer evaluations of new technology-based self-service options: an investigation of alternative models. *International Journal of Research in Marketing*, *13*(1), 9-51.

Dabholkar, P. A., Shepherd, C. D., & Thorpe, D. I. (2000). A comprensive framework for service quality: an investigation of critical conceptual and measurement issues through a longuitudinal study. *Journal of Retailing*, *76*(2), 139-173.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-339.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, *35*(8), 982-1003.

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, *19*(4), 9-30.

Fassnacht, M., & Koese, I. (2006). Quality of electronic services: conceptualizing and testing a hierarchical model. *Journal of Service Research*, *9*(1), 19-37.

Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing*, *18*(4), 36-44.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1999). *Análisis multivariante*. (5a ed.). Madrid: Prentice Hall.

Instituto Nacional de Estadística. (2016). *Perfil sociodemográfico de los internautas: análisis de datos INE 2016*. Retrieved from www.ontsi.red.es/ontsi/sites/ontsi/files/Perfil%20sociodemogr%C3%A1fico%20de%20los%20internautas%20%28datos%20INE%202016%29.pdf

Janda, S., Trocchia, P. J., & Gwinner, K. P. (2002). Consumer perceptions of internet retail service quality. *International Journal of Service Industry Management*, *13*(5), 412-431.

Kurfali, M., Arifoğlu, A., Tokdemir, G., & Paçin, Y. (2017) .Adoption of e-government services in Turkey. *Computers in Human Behavior*, *66*, 168-178.

Lin, F., Fofanah, S. S., & Liang, D. (2011). Assessing citizen adoption of e-Government initiatives in Gambia: a validation of the technology acceptance model in information systems success. *Government Information Quarterly*, *28*(2), 271-279.

Liu, C.-T., Du, T. C., & Tsai, H.-H. (2009). A study of the service quality of general portals. *Information Management*, *46*, 52-56.

Liu, C., & Arnett, K. P. (2000). Exploring the factors associated with web site success in the context of electronic commerce. *Information Management*, *38*, 23-33.

Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2002). WebQual: a measure of Website quality. In *Proceedings of 13o American Marketing Association Winter Educators' Conference: Marketing Theory and Application* (pp. 433-437), Austin, TX.

Mansoori, K. A. A., Sarabdeen, J., & Tchantchane, A. L. (2018). Investigating Emirati citizens' adoption of e-government services in Abu Dhabi using modified Utaut model. *Information Technology & People*, *31*(2), 455-481.

Mardia, K. V. (1970). Measures of multivariate skewness and kurtosis with applications. *Biometrika*, *50*, 519-530.

Moon, J.-W., & Kim, Y.-G. (2001). Extending the TAM for a world wide web context. *Journal of Information & Management Science*, *27*(1), 15-22.

Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información. (2016). *B2C e-commerce survey*. Retrieved from www.ontsi.red.es/ontsi/es/content/perfil-sociodemogr%C3%A1fico-de-los-internautas-datos-ine-2016

Oliver, R. L. (1997). *Satisfaction*: *a behavioral perspective on the consumer*. New York: The McGraw-Hill Companies.

Osman, I. H., Anouze, A. L., Hindi, N. M., Irani, Z., Lee, H., & Weerakkody, V. (2014). I-meet framework for the evaluation e-government services from engaging stakeholders' perspectives. *European Scientific Journal*, *1*, 17-29.

Papadomichelaki, X., & Mentzas, G. (2012). E-GovQual: a multiple-item scale for assessing e-government service quality. *Government Information Quarterly*, *29*(1), 98-109.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41-50.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, *64*(1), 13-40.

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, *7*(3), 213-233.

Ranganathan, C., & Ganapathy, S. (2002). Key dimensions of business-to-consumer Web sites. *Information & Management*, *39*, 457-465.

Reddick, C. G. (2005). Citizen interaction with e-government: From the streets to servers? *Government Information Quarterly*, *22*(1), 38-57.

Reddick, C. G., & Roy, J. (2013). Business perceptions and satisfaction with e-government: findings from a Canadian survey. *Government Information Quarterly*, *30*(1), 1-9.

Rogers, E. M. (1995). *Diffusion of innovations*. New York: Free Press.

Rufín Moreno, R., Molina, C. M., Figueroa, J. C. S., & Moreno, M. R. (2013). Gender and E-Government Adoption in Spain. *International Journal of Electronic Government Research*, *9*(3), 23-42.

Rust, R. T. (2001). The rise of e-service. *Journal of Service Research*, 3, 283-284.

Sá, F., Rocha, A., & Cota, M. P. (2016). From the quality of traditional services to the quality of local e-Government online services: a literature review. *Government Information Quarterly*, *33*(1), 149-160.

Santouridis, I., Trivellas, P., & Reklitis, P. (2009). Internet service quality and customer satisfaction: examining internet banking in Greece. *Total Quality Management & Business Excellence*, *20*(2), 223-239.

Shabbir, A., Malik, S. A., & Malik, S. A. (2016). Measuring patients' healthcare service quality perceptions, satisfaction, and loyalty in public and private sector hospitals in Pakistan. *International Journal of Quality & Reliability Management*, *33*(5), 538-557.

Srivastava, S. C., & Teo, T. S. H. (2007). E-government payoffs: evidence from cross-country data. *Journal of Global Information Management*, v. *15*(4), 20-40.

Taipale, S. (2013). The use of e-government services and the internet: the role of socio-demographic, economic and geographical predictors. *Telecommunications Policy*, *37*(4-5), 413-422.

Tambouris, E. (2011). European cities platform for online transaction services. In *Proceedings of 11o The European Conference on E-Government*, Ljubljana, Slovenia.

Teo, T. S. H., Srivastava, S. C., & Jiang, L. (2009). Trust and electronic government success: an empirical study. *Journal of Management Information Systems*, *25*(3), 99-132.

Tsang, N. K. F., Lai, M. T. H., & Law, R. (2010). Measuring e-service quality for online travel agencies. *Journal of Travel & Tourism Marketing*, *27*(3), 306-323.

Van de Valle, S. (2016). When public services fail: a research agenda on public service failure. *Journal of Service Management*, *27*(5), 831-846.

Van Dijk, J., Pieterson, W., Van Deuren, A., & Ebbers, W. (2007). E-Services for Citizens: The Dutch Usage Case. In M. A.Wimmer, J. Scholl, Å. Grönlund (Eds.). *EGOV 2007: Electronic Government - Lecture Notes in Computer Science* (Vol. 4656). Berlin, Heidelberg: Springer.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, *11*(4), 342-365.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, *39*(2), 273-312.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, *27*, 425-478.

Verdegem, P., & Verleye, G. (2009). User-centered E-Government in practice: a comprehensive

model for measuring user satisfaction. *Government Information Quarterly*, *26*(3), 487-497.

Wang, Y.-S., & Liao, Y.-W. (2008). Assessing eGovernment systems success: a validation of the DeLone and McLean model of information systems success. *Government Information Quarterly*, *25*(4), 717-733.

Welch, E. W., Hinnant, C. C., & Moon, M. J. (2004). Linking citizen satisfaction with e-government and trust in government. *Journal of Public Administration Research and Theory*, *15*(3), 371-391.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: dimensionalizing, measuring and predicting e-tail quality. *Journal of Retailing*, *79*(3), 183-198.

Yoo, B., & Donthu, N. (2001). Developing a scale to measure the perceived quality of an internet shopping site (Sitequal). *Quarterly Journal of Electronic Commerce*, *2*(1), 31-46.

Zeithaml, V. A. (1988). Customer perceptions of price, quality and value: a means end model and synthesis of evidence. *Journal of Marketing*, *52*, 2-22.

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. J. (2002). Service quality delivery through Websites: a critical review of extant knowledge. *Journal of Academy of Marketing Science*, *30*(4), 362-375.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, *60*(2), 31-46.

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