



## Article

# How does the online service level influence consumers' purchase intentions before a transaction? A formative approach<sup>☆</sup>



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## ABSTRACT

The present paper tries to study the impact of online services level in contexts where transactions have not been done yet, through the adoption of a formative approach. In this scene, the present research considers two main dimensions of online services (pre-purchase services and transaction-related services) in a context of clothing purchasing process. Before defining the research and determining the sector to be analyzed, 7 focus groups were conducted. From the obtained conclusions, this study was carried on in the textile sector. A survey with 370 effective respondents was carried out. To measure the different concepts in the model, several scales were used based on literature proposals. Our model was estimated through partial least squares with SmartPLS (Ringle, Wende, & Will, 2005). Empirical findings provide that both transactions related services and pre-purchase services are determinants of the navigation experience. At the same time, navigation experiences affect attitude to the web, which affects purchase intention. All of this in the SME clothing e-retailing industry.

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## Introduction

The Internet provides a marketplace where buyers and sellers develop transactions directly, interactively, and in real-time beyond the physical limitations of traditional brick and mortar retailers (Kiang & Shang, 2015; Yun & Good, 2007). As Kiang and Shang (2015) state, a recent survey projects a 3-fold boom in the number of Internet users from today's 300 million to more than a billion by 2003, and new technologies coming online, such as wireless-application-protocol-enabled phones and digital TV. Despite the overwhelmed statistics regarding Internet development, both successful and unsuccessful cases of Internet marketing have been reported.

According to Kiang and Shang (2015), we argue that the purchasing behaviours of on-line shoppers play an important role in the success of e-retailers. If we can identify the factors that influence the consumer's buying decision, e-retailers will be able to design their marketing strategy accordingly to maximize customer experience and increase total sales. Customer service is not a new concept

but nowadays companies can use the new technologies to improve e-service experiences (Brohman, Parasuraman, Watson, & Piccoli, 2015).

Not in vain, companies are increasingly providing services online either as a replacement for or as an adjunct to traditional offline services (Pujari, 2004); maybe because of that, businesses that deliver superior value derived from excellent services and quality products are likely to win customer loyalty (Otim & Grover, 2006). This explains the rapid increase in transaction-based e-services and the need to find out what services mix should firms offer to satisfy consumers while realistically considering operational and financial constraints (Zlqbal & Baran, 2003).

As Lai (2014) states, the speedy development of information communication technology (ICT) and electronic commerce (e-commerce or EC) has allowed consumers to purchase products and services online. At the same time, the huge growth of online shopping has driven intense competition among e-commerce sellers, who increasingly see the customer experience as vital (Lai, 2014).

The mediocre success of many online service offerings suggests that there is still much to understand about consumer behaviour in the emerging and increasingly important field of online services. The Marketing Science Institute (2013) establishes the study of understanding customers and their customer experiences as TIER 1 (research priority 1) for the period 2014–2016. More specifically, how do digital technology change customer experiences and the consumer path to purchase? As Hackman (2006, p. 145)

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underlines, “rigorous empirical research in this area remains inadequate. This is because it remains unclear whether the antecedent factors of behavioural intentions established in offline settings will adequately explain consumers’ stated and actual behaviours when adapted to the online context”. As [Otim and Grover \(2006\)](#) summarize, the study of web-based service delivery is in its early stages, so that more investigation in this field is needed. Even more, maybe, and although the post-purchase services are important, companies need to think in previous stages of services level that can help consumers to improve their navigation experience and make consumers conditional on their attitude to the web and their purchase intention.

So and although there is abundant research examining the growing complexity of customer experience with online services, most of it has adopted a simplified view of examining the effect of individual factors ([Hung, Chen, & Huang, 2014](#)). According to [Yang, Jun, and Peterson \(2004\)](#), most of these studies use traditional scales, as SERVQUAL scale or some of these dimensions. But, as the authors state, it may not be sufficient for measuring service quality across industries and situations, not to mention online service quality. The instrument does not consider unique facets of online service quality. Based on this, and following [Otim and Grover \(2006\)](#)’s proposal, the present paper has been built up to study the impact of online services levels in contexts where transactions have not been done yet. To do this, two main dimensions of online services have been taken as a starting point: pre-purchase services and transaction-related services. As both authors explain ([Otim & Grover, 2006](#), p. 528), “service delivery through websites pertains to the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services”.

So, the present paper will concentrate on the effects of pre-purchase services and transactional services. This distinction has been used by recent papers as the research carried out by [Hoekstra, Huizingh, Bijmolt, and Krawczyk \(2015\)](#). Additionally, and following the [Buil, Martínez and De Chartony \(2010\)](#)’s proposal, the paper defends these online service dimensions in a formative way. In the research of online service, the studies adopt a reflective perspective in the conceptualization of this construct and use of first-order models where online service is measured through different indicators. However, various studies advise the use of models of higher order when the constructs analyzed are complex ([Podsakoff, Shen, & Podsakoff, 2006](#)), as well as its use allows to treat each dimension as a major component thereof, improve the representation of construct and provide the best evaluation mode ([Mac Kenzie et al., 2005](#)). In sum, through this conceptualization of online services using a formative approach, this work overcomes limitations of previous studies, in which the dominant paradigm of measurement in marketing is followed, that is, the focus reflective, and have conceptualized the online service as a construct of first order.

It is important to underline that post-purchase services do not appear in this study because, and according to [Cao and Gruca \(2004\)](#), this service level is less important to determine the consumers’ attitudes and behaviours in the short term. This service level can become a major factor on loyalty strategies. In sum, as the [Boston Consulting Group \(2000\)](#) report points out, e-retailers are very likely to compete on the basis of pre purchase service, and less on the basis of post-purchase services.

In sum, through this research some contributions can be reached. According to [Van Riel, Liljander, and Jurriens \(2001\)](#), it is relevant for academics and practitioners to have a better understanding of the way consumers evaluate these two services components in virtual environments. That is, although diverse papers have already developed models explaining user satisfaction and behaviour in different virtual environments, little empirical research has been carried out to investigate pre-purchase services and transactional services effects. In other words, following

[Hackman \(2006\)](#), a comprehensive empirical test of the links between main constructs (such as service dimensions, satisfaction, attitudes and behavioural intentions) in the context of online services is missing. For this reason, and in line with [Boshoff \(2007\)](#), a first contribution is that this paper tries to measure customers’ perceptions of electronic service in a comprehensive model in order to better understand their effects in terms of satisfaction, attitudes and intentions. At the same time, and as a second contribution, this paper proposes the distinction between two main services levels: transactional related services and pre-purchase services. The main contribution of this paper is the distinction between transaction and pre-purchase services, which have been defined in a formative way.

Third, and as [Lederer and Maupin \(2015\)](#) underline, the World Wide Web offers small businesses the opportunity to reach a wider customer base. However, before deciding to launch a web site, a small business manager needs an understanding of the web and how to use it to achieve business goals. In this sense, the use of Internet in small companies has received little attention from the literature ([Grandon & Pearson, 2004](#)). This is partly due to the fact that the way these companies use the Internet is a reflection of the general manager’s (usually the owner) personality and desire to innovate ([Al-Qirim, 2006](#)). Many studies ([Peet, Brindley, & Ritchie, 2002](#)), however, show that the use of Internet by SMEs is mostly merely testimonial, with only a few interactive websites and even fewer offering online sales. In short, it can be said that traditionally, SMEs use the web basically to present, advertise and promote company products, rather than to sell them. In contrast, large companies, especially in the financial sector, have already experienced the advantages of the web as a sales tool. So, the third contribution of this paper is the focus on the study of a SME young clothing manufacturer that has been virtually built for this study: Resaka. In this scene, the present research considers a broad set of web-based services in the context of a clothing purchase process. In doing so, empirical findings provide relevant managerial implications based on the actual experience of customers.

The remaining sections of this paper are organized as follows. Firstly, a revision of relevant literature and a proposal of a conceptual model for examining the antecedent factors of behavioural intentions for online services are developed. Secondly, a discussion of the data collection procedure and the research method applied are done. Finally, a presentation of the results from data analysis is showed. The paper is concluded with a discussion of the research findings and guides for future research

### Online service level before the transaction

The results demonstrate that overall, consumer preferences for features of transaction-based e-services differ between offline and online consumers ([Zlqbal & Baran, 2003](#)). The reason is that online consumers identify and value the advantages of online services. So, although there are certainly challenges shared by both traditional retailers and e-retailers, e-retailers face a set of specific demands in the online environment, including the fact that on the Internet a competitor is only a click away ([Yun & Good, 2007](#)). This large and rapid competition justifies the relevance of developing online services to capture the attention of surfers. That is, e-business requires more than offering a website, “even though many companies naively hope that just being online would be enough to generate interest and improve business” ([Suh, 2005](#), p. 309).

In this context, a critical topic to win in the virtual world is the ability to offer better online services. As [Zeithaml, Parasuraman, and Malhotra \(2002\)](#) and [Hung et al. \(2014\)](#) point out, service quality delivery through websites is an essential strategy to success, possibly more important than low price and web presence.

These authors discovered that some services (i.e. those related to navigability, flexibility, efficiency, site aesthetics, and price knowledge) were critical in the online environment, in addition to several dimensions that were also important in offline shopping (i.e. reliability, responsiveness, access, assurance, and customization/personalization).

This relevance of online sales services offered has led us to develop a proposal for an integrative model to explain all the effects that such services are able to concatenate, reaching stimulation of online purchase intentions. As Lee and Kwon (2011) state, to date, quite of theories have been proposed to explain why and how consumers are motivated to continue to use web-based services. Most of them add determinant constructs to traditional models (i.e. Lee & Kwon, 2011 that add familiarity and intimacy into the expectation-confirmation model). Studies of e-service quality have consistently used adaptations of service-quality measurement tools that have been adopted and extended from traditional service-quality frameworks (Kiran & Diljit, 2012). However, a fresh insight into the investigation of key determinants of Web-based service quality (Kiran & Diljit, 2012), with an emphasis on how customers perceive service quality before the transaction, has much to offer.

In this sense, following Otim and Grover (2006), the present paper is based on the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). As both authors explain, this theory supports the proposition that an individual's behaviour is determined by behavioural intention to perform that behaviour (Fishbein & Ajzen, 1975). Behavioural intention is a function of some determinants (i.e. online services, satisfactory navigation experiences and favourable attitudes) that will finally lead to certain outcomes, which may be either favourable or unfavourable (to buy or not to buy). In sum, through the offer of services online, direct and indirect effects lead to stimulation of the online purchase intention. This concatenation of effects occurs in a reasoned manner to trigger the final action of purchase.

In this context, web designers try to build websites where the surfer can find satisfactory navigation experiences and e-services can explain this effect. In fact, customers' overall satisfaction is influenced by their satisfaction with the core service and supplementary services (Van Riel et al., 2001). So, and according to Otim and Grover (2006), both pre-purchase services (support of product search and evaluation, web appearance/aesthetics and product pricing) and transactional services (delivery arrangements, privacy/security policy and billing and payment mechanism) affect positively on the development of satisfactory navigation experiences. So, and as Hung et al. (2014) state, personalized customer services are another important attribute of e-service quality for the success of online stores. In this sense, understanding customer characteristics (e.g. online shopping attitude, perceived convenience, perceived risks, customer innovativeness, and impulse purchase) can help them enhance the quality of their personalized services (Hung et al., 2014).

In sum, this paper defends that online services can be measured following the Otim and Grover (2006)'s proposal (pre-purchase and transactional services dimensions). But, also the paper defends a formative approach to a better understanding the online service conformation.

Related to pre-purchase services, it has been proved that consumers prefer using media that can accurately portray the characteristics of the specific products they are intending to buy. Specially, consumers like using the Internet to find out about and search for information on products such as music, films, books, and consumer electronics, presumably because of the detailed information that is available online (Burke, 2002). In these product categories, those web pages with attractive appearance, that provide a clear and complete products and price information, produce more satisfying surfing experience (Burke, 2002). That is,

pre-purchase services positively impact on navigation (Szymanski & Hise, 2000; Wolfenbarger & Gilly, 2003).

Related to transactional services, navigation experience also improves when aspects such as security and privacy are clearly exhibited. Several studies state that certain security attributes can help to make the website user's experience more agreeable. Also, the presence of other transactional services – like billing and payment facilities or delivery arrangements – improves navigation experience (Szymanski & Hise, 2000; Tamimi, Sebastianelli, & Rajan, 2005).

In general terms, those companies that offer a broad range of services during the buying-selling process are named customer-orientated companies. They identify and anticipate the needs and desires of consumers and deliver services with superior value in order to satisfy customers' needs (Suh, 2005). That is, online satisfaction is affected by online service value and quality (Hackman, 2006; Hoekstra et al., 2015). Both online service value and quality, are obtained through pre-purchase services and transactional services developed to get e-satisfaction (Hoekstra et al., 2015; Szymanski & Hise, 2000). As Hoekstra et al. (2015) demonstrated in their study based on an empirical study of 380 companies across a wide range of industries, both pre-purchase and transactional related services affect customer performance (satisfaction). In this sense, the following hypothesis could be stated:

**H1.** Transactional related services positively affect navigation experience (satisfaction)

**H2.** Pre-purchase related services positively affect navigation experience (satisfaction)

Attitude to the website is another desired effect related to service level because of its repercussion on behavioural aspects. In this sense, several authors have examined the attitudes which various online communication actions awaken in consumers; understanding that these attitudes predispose or distance the consumer from product purchase. This justifies the interest in studying customers' attitudes to a web.

Among the most important determinants of consumers' attitudes to a website, the amount and diversity of the services level is especially significant. Specifically, regarding pre-purchase services, aspects such as those concerning web content (amount and variety of product information) have been analyzed. That is, it seems that those webs that include greater product and price information would lead to better attitudes (Koufaris, 2002); contrary poorer webs with worse appearances would lead to inferior attitudes. In the same line, Thatcher and George (2004) found that some pre-purchase services (web aesthetics and appearance) have an indirect effect on customer loyalty, mediated by commitment attitudes towards a web. That is, items related to pre-purchase services are able to affect attitudes (Wolfenbarger & Gilly, 2003).

But not just pre-purchase services affect attitudes and intentions. Some studies have focused deeply on pre-purchase assessments (Wolfenbarger & Gilly, 2003); also the attitudinal effects of transactional services (like billing and payment mechanism, delivery arrangements and security and privacy policies) have been considered. The reason is that a higher presence of these kinds of services will also improve favourable attitudes towards the web (Koufaris, 2002; Yang et al., 2004). However, Lim and Dubinsky (2005) report that transactional services do not always report favourable attitudes. These authors found no significant relationship between security and privacy norms and the attitude created to a website. In spite of this, the general opinion supports the idea that a website will cause negative feelings when it is preceded by unsure statements, billing and payment difficulties and complex delivery arrangements. From this point of view, a website is agreeable and arouses pleasurable feelings if it is able to provide

updated information, to identify errors fast and to solve them and to ensure correct operation during the transaction process (Liu and Arnett, 2000).

In sum, according with Hoekstra et al. (2015)'s results, informational and the transaction-related website functions have a significant positive impact on website success in terms of customers attitudes. So firms can improve website performance through providing relevant website functions throughout the entire customer purchase process (transactional and pre-purchase stages). Then, the following hypothesis could be stated:

**H3.** Transactional related services positively affect attitude to the web

**H4.** Pre-purchase related services positively affect attitude to the web

But besides the services offered, navigation experience is another determinant of positive attitudes to a website. In general terms, E-commerce businesses are particularly concerned about keeping customers satisfied so that they keep coming back. Belanger, Hiller, and Smith (2002) state that certain website attributes can help to make the Internet user's experience of the website more pleasant, developing favourable attitudes towards it. In the same line, authors such as Agarwal and Venkatesh (2002) also analyze affective responses aroused by a website that satisfies certain key design elements developed to satisfy customers. For example, Cappel and Huang (2007) study the close link between users' feelings and website navigability, so websites, which function well and are perceived as appropriate, will be liked more/better accepted than other less usable websites that generate frustration and confusion. More recently, Ha and Janda (2014) or Visinescu, Sidorova, Jones, and Prybutok (2015), among others, confirm this relationship. Then, it could be stated that:

**H5.** Satisfactory navigation experience positively affects attitude to the web

Finally, the identification of variables influencing repeat purchasing behaviour and word-of-mouth recommendation is a crucial area of virtual research (Hackman, 2006; Srinivasan, Anderson, & Ponnnavolu, 2002). The reason is that as Yun and Good (2007) review, loyal customers visit their favourite websites twice as often as non-loyal customers, and loyal customers spend more money.

So, in a context where the transaction is not done, enterprises want to know if after the consumers' navigation experience, they will agree to buy on this website in the future (purchase intention). In this sense, and according to Floh and Treiblmaier (2006), the attitude to the website is one of the antecedents of the purchase intention. Exactly, the attitude that a website evokes is a key aspect in the stimulation of online shopping and in the future recommendation of the website, the firms and its products (Floh & Treiblmaier, 2006). This link between attitudes and purchase intention has been widely analyzed in the literature (Curran, Meuter, & Surprenant, 2003; Dabholkar, 1996; Otim & Grover, 2006). Not surprisingly, many studies have tried to explain the importance of building pleasant websites that awake feelings of affection, due to the behaviours that these webs are able to unleash in virtual transactions (Floh & Treiblmaier, 2006; Ha & Janda, 2014; Visinescu et al., 2015). This explains the stronger relationship between attitude-behaviour in the virtual context than in the real context. In effect, empirical studies comparing customer feelings and loyalty in online and offline environments show substantial differences in terms of customer attitudes and behaviour connexion (Shankar, Urban, & Sultan, 2002). So, the following hypothesis could be stated:

**H6.** Favourable attitudes to a web positively affect purchase intention

## Methodology

### *Sector selection and research planning: a qualitative study*

Before defining the quantitative research and determining the sector to be analyzed, 7 focus groups were conducted (n1 = 6 participants; n2 = 6 participants; n3 = 6 participants; n4 = 6 participants; n5 = 6 participants; n6 = 6 participants; n7 = 8 participants). The aim of this prior analysis is to identify key design variables that small and medium enterprises (SME) should carefully observe to construct successful transactional websites. Traditionally, the literature has taken a quantitative approach to this topic, ignoring the fact that the interaction of individuals in focus groups can contribute enormously towards transactional website design for SMEs that often lack the resources required to carry out large quantitative studies (Küster & Vila, 2011). At the same time, a secondary objective of this analysis is to determine the suitability of the sector analyzed (cloth retailing) in the population under study.

So, and following Wong and Sohal (2003), several focus group sessions were held in different contexts in order to guarantee the highest possible participation. Groups 1 and 2 were mainly formed by females over 45 years old, most of them with higher studies. Group 3 was a middle aged (30–45 years old) male group, mainly without higher studies. Group 4 was a younger cluster of participants comprising males and females with higher studies. Group 5 was formed by young females (under 30 years old) with higher studies. Group 6 was a mixed male and female cluster, between 30 and 45 years old, and most of them with university studies. Finally, group 7 was a miscellaneous group both, in terms of gender and in terms of higher studies. All the members in this last group were over 30 years old.

After this qualitative study was done, two main conclusions were obtained. More information of this qualitative study can find in a previous work (Küster & Vila, 2011). Firstly, usability emerged as a key design variable for building successful transactional SME websites, together with security and product and price information. This result corroborated our decision to work with diverse service items, related both with pre-purchase phase (i.e. product and price information) and transactional services (i.e. security and usability).

Secondly, the focus groups showed that clothing is one of the easiest products to sell online. Compared to traditionally successful articles for online sales (plane and train tickets, books, CDs and leisure), online banking, cinema tickets and clothes emerged as three interesting options for online shopping.

From these two conclusions, this present study was carried on in the textile sector. The sector has been under growing pressure for decades, especially from Asia which is forcing small and medium-sized textile companies offering design, brand and label to seek alternatives which allow North American and European companies to recover lost competitiveness. So, a fictitious website was designed for a non-existent clothing company directed at the segment of middle class consumers. Two graphic designers produced the website and the content structured in 6 sections shown horizontally on a menu bar, which appeared on all the pages.

### *Sample*

Our sample consisted of 370 respondents who participated in exchange for a pen-drive (USB) valued at 15 euros. They were recruited in two different underground stations. They were invited to participate in the research. If they accepted, they were taken to an office with a specially prepared room so they could navigate around the fictitious website of an invented company Resaka. The reached sample size makes not possible to generalize results to the global population but can provide us an idea about the analyzed environment.

Total sample composition was 57% women and 43% men, 40% had 3 year university studies and 48% had a secondary education. More than 50% of the interviewees said they earned more than 2000 euros a month. The age range varied between 18 and 25 years.

The interviewees were exposed to the website. They were all told that they had a fictitious cheque for 200 euros that they could spend shopping on the website. After 30 min they were given a questionnaire to provide their impressions after navigation.

#### *Measures: reliability and validity assessment*

To measure the different concepts in the model, several scales were used based on proposals in the literature. Appendix 1 shows the items considered in detail.

#### *Purchase intention*

The literature review by Lee and Lin (2005) suggests that purchase intention provides a fairly acceptable approach to online shopping behaviour. Therefore, to use the terminology in Blackwell, Miniard, & Engel (2001), *purchase intention* represents what we think we will buy. Therefore, to construct the scale “purchase intention” we contemplated 4 items. The first 3 items have already been used by Belanger et al. (2002) and the final item came from the proposal by Lee and Lin (2005). These authors used the items shown in Table 2, following the scales proposed by Gefen (2000) and Jeong et al. (2003), respectively.

#### *Attitude to the web*

To measure *attitudes*, 5 out of the 6 items proposed by Ko, Chang-Hoan, and Roberts (2005) were used to approximate attitude towards a website. This scale is based on the work by Chen and Wells (1999), since the traditional brand attitude scales cannot be used to measure attitude towards a medium such as Internet. The item not considered in the initial proposal is satisfaction with the service received as satisfaction was measured independently.

#### *Navigation experience (satisfaction)*

*User satisfaction with a website* was measured with the 4 items from Flavian, Guinaliu, and Gurrea (2006). So, in the present study satisfaction was evaluated by considering it as a process which ranges from taking the decision to use the website, continuing with the experience and transaction and finishing with the service provided until the entire cycle has concluded. Also it was considered Zhu and Kraemer (2002)'s proposal to include consumer global satisfaction through a single item.

#### *Online services: pre-purchase services and transactional services*

Otim and Grover (2006) consider that customer service-related success factors include pre-purchase, during and post-purchase service. Following this proposal, two scales were used to measure transaction related services and pre-purchase services. The first one is adapted from Ting-Peng and Hung-Jen (2002), Torkzadeh and Dhillon (2002), Rodgers, Negash, and Suk (2005), and Otim and Grover (2006). It adds 9 items related to delivery arrangements (4), security (3) and billing and payment (2). The second one is adapted from Lee and Lin (2005), Rodgers et al. (2005), and Otim and Grover (2006). It adds 14 items related to support product search and evaluation (8), web appearance (4), and product pricing (2).

The constructs used in our study were adapted from previous studies and measured by multiple item 5-point Likert-type scales, as shown in more detail in Appendix 1. Transaction related

and pre-purchase services have been measured as formative constructs. According to Buil et al. (2010) and Diamantopoulos and Papadopoulos (2010)'s arguments, we defend the use of formative constructs to measure transaction and pre-purchase services because this is a valid and generalizable procedure to proceed with second order factorial structures, not only between indicators and the dimensions of the first order, but also between the dimensions of the first order and second-order construct. At the same time, these models do not require measurement indicators to be correlated, and measure models include an error term which is not associated with the individual measurements, but with the whole construct (Diamantopoulos, 2006).

Our model was estimated through Partial Least Squares with SmartPLS (Ringle, Wende, & Will, 2005). According to Hair, Ringle, and Sarstedt (2011), PLS-SEM is a promising method that offers enormous potential for SEM researchers especially in the marketing and management information systems disciplines. “PLS-SEM is, as the name implies, a more “regression-based” approach that minimizes the residual variances of the endogenous constructs. Compared to CB-SEM, it is more robust with fewer identification issues, works with much smaller as well as much larger samples, and readily incorporates formative as well as reflective constructs. Simulation studies show that the differences between CB-SEM and PLS-SEM estimates are at very low levels. Thus, the extensively discussed PLS-SEM bias is often of minor relevance for practical applications because estimates will be asymptotically correct under consistency at large conditions (i.e., both a large sample size and large numbers of indicators per latent variable) (Jöreskog and Wold, 1982)” (Hair et al., 2011, p. 143). In sum, and according to Wetzels, Odekerken-Schröder, and Van Oppen (2009), we defend the use of PLS in our study because online services are considered formative second order factors. This same methodology can be found in the study of Bruhn, Georgi, and Hadwich (2008).

It must be noticed that transaction and pre-purchase related services represent second order constructs. Other works, as Kiran and Diljit (2012)'s one, use similar methodology. Kiran and Diljit (2012) carried out an exploratory factor analysis and confirmatory factor analysis using structural equation modelling was carried out in order to develop and validate a measurement model for Web-based service quality, which included three second-order dimensions and eight first-order dimensions.

In these cases, and following Cepeda-Carrión and Roldán-Salgueiro (2004) proposal, the method followed in PLS to pass from a second order model to a first order one is based on two stages or phases. In the first stage, the model with indicators prime factors was estimated by adding all the above indicators as indicators of factor (construct) also second order. This method is the hierarchical component model, proposed by Wold (1982). Although the method of hierarchical components reused indicators, its advantage is that thanks to this, the model with second-order factors can be estimated using the normal algorithm PLS. In a second step, the PLS analysis model was estimated using the scores calculated by the programme for each of the first-order components, rather than the data. The scores of the first-tier component are the average loads of items of each component weighted with loads estimated in the first stage. After this procedure, the theoretical model was estimated.

As evidence of convergent validity, results indicate that all items are significantly ( $p < .01$ ) related to their hypothesized factors, and the size of all the standardized loadings are higher than .60 (Bagozzi & Yi, 1988) and the average of the item-to-factor loadings are higher than .70 (Hair, Anderson, Tatham, & Black, 1998). According to Hair, Hult, Ringle, and Sarstedt (2014), we have followed the criterion of keeping a formative indicator when its weight is not significant if its corresponding loading is significant, as in this case of delivery ( $t = 1.30$ ).

**Table 1**  
Validation of the final measurement model. Reliability and convergent validity.

Variable	Indicator	Factor loading	Factor weight	t-Value (bootstrap)	CA	CR	AVE
Transaction related services	Billing	–	0.42**	3.29	N/A	N/A	N/A
	Delivery	–	0.16**	1.30			
	Security	–	0.62**	7.73			
Pre-purchase services	Pricing	–	0.17**	2.00	N/A	N/A	N/A
	Search	–	0.73**	9.96			
	Appearance	–	0.24**	2.80			
Navigation experience	NAV1	0.78**	–	24.08	0.91	0.93	0.73
	NAV2	0.88**	–	46.91			
	NAV3	0.79**	–	29.52			
	NAV4	0.90**	–	87.58			
	NAV5	0.92**	–	118.22			
Attitude to the web	ATT1	0.88**	–	63.28	0.90	0.93	0.72
	ATT2	0.92**	–	88.33			
	ATT3	0.88**	–	72.90			
	ATT4	0.78**	–	23.91			
	ATT5	0.79**	–	29.65			
Purchase Intention	INT1	0.87**	–	55.33	0.86	0.90	0.70
	INT2	0.84**	–	37.97			
	INT3	0.85**	–	47.15			
	INT4	0.79**	–	26.35			

Source: Own elaboration.

Note: CA: Cronbach's alpha; CR: composite reliability; AVE: average variance extracted.

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 1 also demonstrates the high internal consistency of the constructs. In each case, Cronbach's alpha exceeded Nunnally & Bernstein's (1994) recommendation of .70. Composite reliability represents the shared variance among a set of observed variables measuring an underlying construct (Fornell & Larcker, 1981). Generally, a composite reliability of at least .60 is considered desirable (Bagozzi & Yi, 1988). This requirement is met for every factor. Average variance extracted (AVE) was also calculated for each construct, resulting in AVEs greater than .50 (Fornell & Larcker, 1981).

Evidence for discriminant validity of the measures is provided in Table 2. The shared variance between pairs of constructs was always less than the corresponding AVE (Fornell & Larcker, 1981). On the basis of these criteria, we concluded that the measures in the study provided sufficient evidence of reliability, convergent and discriminant validity.

## Results

Fig. 1 and Table 3 summarize the results, showing the key role of transaction related services information in the web as they improve both the attitude to the web ( $\beta = .10$ ;  $p < .05$ ) and the navigation experience of the customer ( $\beta = .29$ ;  $p < .01$ ). So, H1 and H3 can be accepted.

Pre-purchase services do not directly improve consumer attitude to the web ( $\beta = .07$ ;  $p > .05$ ) but do it indirectly by improving the navigation experience ( $\beta = .45$ ;  $p < .01$ ) which has a significant

**Table 2**  
Validation of the final measurement model. Discriminant validity.

	1	2	3	4	5
1. Attitude to the web	<b>.72</b>				
2. Purchase intention	.47	<b>.70</b>			
3. Navigation experience	.49	.42	<b>.73</b>		
4. Pre-purchase services	.26	.20	.39	<b>n/a</b>	
5. Transaction related services	.23	.29	.31	.37	<b>n/a</b>

Note: Diagonal represents the average variance extracted; while below the diagonal the shared variance (squared correlations) are represented.

correlation with the attitude to the web ( $\beta = .60$ ;  $p < .01$ ). In this sense, H4 is rejected but H5 is accepted.

The formative configuration of this construct allows us to state that the role of the different services is not equivalent. In this sense, firstly, and related to transaction related services, security and privacy statements and billing and payment mechanisms play a more significant role in transaction related services than information regarding delivery arrangements (positive and non-significant relationship). Secondly, and related to pre-purchase services, the support of product search and evaluation has a stronger influence on pre-purchase services than web appearance and product pricing; even if all the influences are positive and significant.

Finally, our results show that the attitude to the web is significantly related to the purchase intention ( $\beta = .69$ ;  $p < .01$ ). So, H6 is accepted.

## Conclusions and managerial implications

This study has tried to underline the importance of e-service level before the transaction has been done in a. These results must be considered taken into account the sample size limitation and the industry analyzed.

Four main conclusions can be underline. First, our results show that both; transaction related services (billing and payment mechanism, and security and privacy) and pre-purchase services (product pricing, support of product search and evaluation, and web appearance) are determinants of the navigation experience. These results are consistent with previous research (Hoekstra et al., 2015; Szymanski & Hise, 2000). So, and as Szymanski and Hise (2000), Wolfenbarger and Gilly (2003), Tamimi et al. (2005) or Hoekstra et al. (2015) state, these services levels positively impact on navigation experience.

Second, the formative configuration of pre-purchase and transaction related services offers useful information. As the results show, the role of the different services is not equivalent. Not in vain, Hung et al. (2014) underline the importance of knowing what consumers desire and value with the aim to build customized webpages with appropriated service levels.

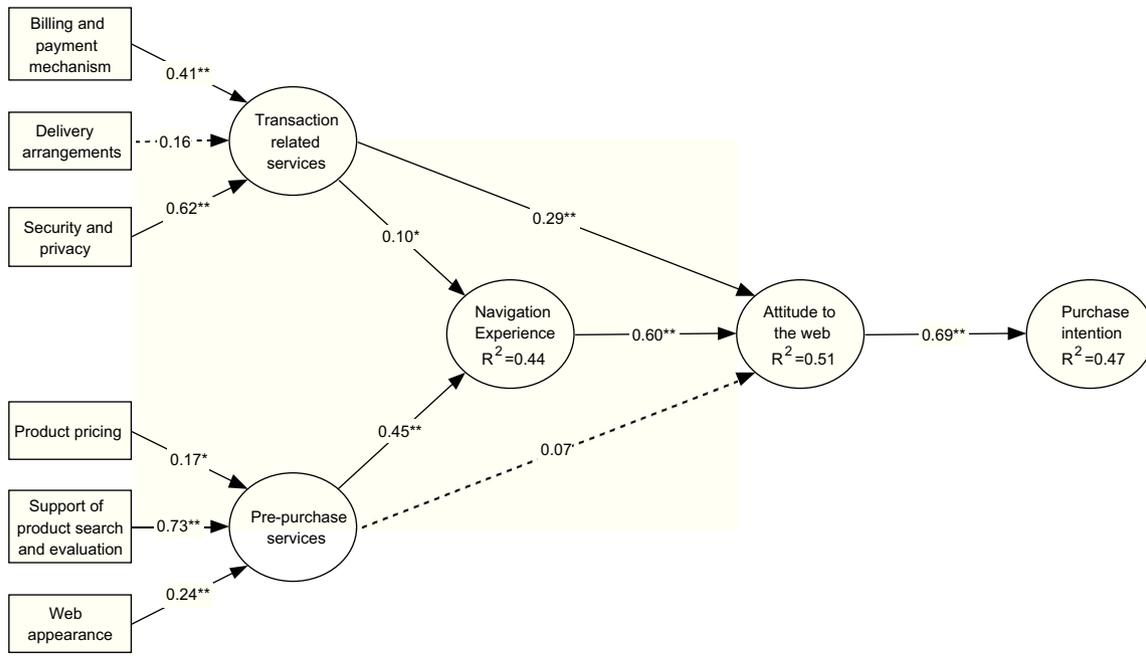


Fig. 1. Final model.

Source: Own elaboration.

Third, transaction related services are significant and positively related to the attitude to the web. Contrary, the absence of a significance relationship between pre-purchase services and attitude to the web could be explained by the indirect effect between these concepts. Additionally, and as Ha and Janda (2014) found, results can be different among countries. The authors analyzed the relationships among customized information, attitude towards web site and purchase intentions in two different countries (South Korea and UK). And not all the relations can be supported due to countries' differences.

Finally, and in line with previous studies, our results show that the attitude to a web is significantly related to the purchase intention. In this line, Visinescu et al. (2015) have recently proven this relationship in websites using 3D environments, although dimensionality can be difficult for the navigation experience, the attitude to the web, and purchase intention.

Based on these conclusions, the following managerial implications may be inferred. First, companies must pay attention to this

services level, before they start to think in other themes. Nowadays business experts and academics emphasize the loyalty and relational strategies as the unique way to maintain sustainable competitive advantage. But, well, to reach it, companies must pay attention in the early stages to the customer service they offer. Brohman et al., 2015 or Peng, Wang, He, and Tang (2015) underline the need to offer good levels of e-services. So, and due to the increasing number of web services and the diversity of service consumers' requirements, companies need to spend time and resources to know how to select and customize service models to satisfy consumers' personalized (Peng et al., 2015).

Second, in the sample analyzed, companies must consider that all the aspects of e-service can be important for the customer experience. In this scene, removing any of them should change the customer perceptions and affect future behaviours. So, and related to transactional related services, security and privacy statements and billing and payment mechanisms play a more significant role than information regarding delivery arrangements (positive and

Table 3 Hypothesis testing.

Hypothesis	Path	Standardized path coefficients	t-Value (bootstrapping)
H1	Transaction related services → Navigation experience	.29*	5.11
H2	Pre-purchase services → Navigation experience	.45*	8.57
H3	Transaction related services → Attitude to the web	.10*	2.02
H4	Pre-purchase services → Attitude to the web	.07*	1.45
H5	Navigation experience → Attitude to the web	.60*	10.55
H6	Attitude to the web → Purchase intention in this web	.69*	21.48
Formative constructs	Billing and payment → Transaction related services	.41**	3.28
	Delivery arrangements → Transaction related services	.16*	1.28
	Security and privacy → Transaction related services	.62**	7.72
	Product pricing → Pre-purchase services	.17*	1.99
	Support of product search → Pre-purchase services	.73**	9.95
	Web appearance → Pre-purchase services	.24**	2.79
$R^2$ (Navigation experience) = 0.44		Stone-Geisser $Q^2$ (Navigation experience) = 0.26	
$R^2$ (Attitude to the web) = 0.51		Stone-Geisser $Q^2$ (Attitude to the web) = 0.31	
$R^2$ (Purchase intention) = 0.47		Stone-Geisser $Q^2$ (Purchase intention) = 0.28	

Source: Own elaboration.

\*  $p < .05$ .

\*\*  $p < .01$ .

non-significant relationship). Related to pre-purchase services, the support of product search and evaluation has a stronger influence on pre-purchase services than web appearance and product pricing; even that all the influences are positive and significant.

Finally, web designers and companies must take into account that in the industry analyzed, the navigation experiences affect positively and significantly the attitude to the web; and these attitudes influence on purchase intention. So, consumers must feel satisfied with their website experiences, as a way to reach positive attitudes to the website and a positive predisposition to buy one product in this website. In this sense, companies must focus on developing appropriated websites where both the appearance and contents are carefully analyzed. The customer services must be included in this design; customer services that start before the transaction has been done.

In sum, in limited budget scenarios, in mature industries such as the industry analyzed here, where companies are competitive and fragmented into many small and medium-sized companies, the results show that pre-purchase services do not directly improve

consumer attitude to the web but do it indirectly by improving the navigation experience and that transaction related services should be paramount over pre-purchase services. In other environments, the managerial implications may be different. So, the limitations of this study include the fact that it concentrates on the Spanish textile sector which is a mature sector, and so the conclusions cannot be generalized to other sectors with other characteristics.

It must be noticed that the importance of some aspects of the shopping experience varied by product category (Zeithaml et al., 2002). So, future studies could be developed for testing other product categories to compare the obtained results in the present study. And, secondly, online shoppers certainly are not homogeneous. While there is controversy about the role that services will play in the purchase process online, alternative customer segments could be analyzed to test the impact that services play on each segment.

## Appendix 1.

### Measurement scales

Construct	Construct dimensions	Item coding	Item descriptions	Source
Transaction related services	Delivery arrangements	DA1	The delivery arrangements are clear and detailed	Adapted from Ting-Peng and Hung-Jen (2002), Otim and Grover (2006), Rodgers et al. (2005), Torkzadeh and Dhillon (2002)
		DA2	The delivery time is clear and detailed	
		DA3	Changes and refunds information is wide and complete	
		DA4	The web seems responsible towards changes in the delivery time and faulty products	
	Security	SEC1	I found secure to buy in this web	
		SEC2	I think the secure information in this web is proper	
	Billing and payment	SEC3	I feel that to buy in this web is not risky	
		BP1	I found easy to buy in this web	
Pre-purchase services	Support product search & evaluation	BP2	Billing and payment conditions are clear and detailed	
		SP1	I found the website fast and dynamic	
		SP2	On this website, everything is easy to understand	
		SP3	It is easy to use this website right from the start	
		SP4	It is easy to find the information I need on this website	
		SP5	The structure of contents of this site is easily understandable	
		SP6	It is easy to move around this website	
		SP7	This website is organized in such a way that I know where I am when I navigate its pages	
	Web appearance	SP8	When I navigate on this website, I feel in control	
		WA1	This website offers a global and completed information about all the products sold	
		WA2	Each product is well described	
		WA3	Information is visually easy to understand	
		WA4	Diversity of colour and patrons information is offer	
		PP1	Price information is clear	
Navigation experience (satisfaction)	Product pricing	PP2	Promotions and special offers are properly emphasized	
		NAV1	I think I have taken the correct decision to use this website	
		NAV2	Experience of this website has been satisfactory	
		NAV3	In general terms, I am satisfied with the way this website has managed the transactions	
		NAV4	In general, I am satisfied with the service provided by this website	
Attitude	NAV5	In general, I am satisfied with the online experience		
	ATT1	This website connects with me		
	ATT2	I would like to visit this website again		
	ATT3	I feel comfortable navigating this website		
	ATT4	This site is a good place to spend my time		
Purchase intention	ATT5	I consider this website to be a good site for fashion		
	INT1	I would buy from this website		
	INT2	I would create a personalized account with this website		
	INT3	I would use my credit card to shop on this website		
	INT4	I would recommend this website to other people		
				Adapted from Flavian et al. (2006)
				Adapted from Chen and Wells (1999), Ko et al. (2005)
				Adapted from Belanger et al. (2002), Lee and Lin (2005)

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