



The impact of pre-sale and post-sale factors on online purchasing satisfaction: a survey

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Online
purchasing
satisfaction

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Received November 2008
Revised January 2009,
September 2009
Accepted October 2009

Abstract

Purpose – This work seeks to contribute a series of reflections and conclusions in response to the following questions: what variables determine satisfaction in the pre-sale phase and post-sale phase of B2C electronic commerce? How are the variables of the pre-sale phase related to those of the post-sale phase of B2C electronic commerce?

Design/methodology/approach – The authors develop a theoretical scale that includes the important variables of quality in the pre-sale and post-sale phases of B2C electronic commerce. After the empirical validation of the theoretical scale, we measure the impact of the pre-sale dimensions on the post-sale dimensions.

Findings – The results confirm the principal hypotheses of the study, that is to say, the dimensions of the pre-sale phase have a significant impact on the dimensions of the post-sale phase of B2C electronic commerce.

Research limitations/implications – This research shows that, in B2C electronic commerce, the organisation's actions in the pre-sale phase will, to a great extent, condition its actions in the post-sale phase.

Practical implications – This paper highlights the importance of high-performance in the pre-sale phase in order to achieve success.

Originality/value – This paper bridges a gap in the empirical works in the field of quality in electronic commerce by studying the importance and implications of the different phases in the electronic purchase.

Keywords Electronic commerce, Quality, Quality management, Sales, After sales service

Paper type Research paper

Introduction

Business-to-customer (B2C) electronic commerce generates a type of business-customer transaction that is very different from the traditional physical purchase. In effect, electronic transactions in B2C electronic commerce constitute another way of interacting with customers and display two notable differential characteristics (Douglas *et al.*, 2003; Constantinides, 2002; Bitner, 2001):

- (1) the absence of the seller; and
- (2) the absence of physical premises.

In the digital context, the functions of the sales staff, including welcoming, informing, advising and explaining to the customer, are performed by the interface and the tangible aspects of the physical encounter are replaced by the computer monitor in electronic transactions (Corbitt *et al.*, 2003; Bitner, 2001; Douglas *et al.*, 2003; O'Neill *et al.*, 2001). The vast differences between the physical and electronic purchase justify



the study of the phases, dimensions and factors that characterise electronic commerce B2C and influence the overall quality perceived by the online customer, especially when the customer abandons the process in the early stages of the electronic purchase or when problems arise in the delivery stage or in the after-sales service. In the case of a mistake in the delivery of a product sold online, could it be that the information about the product was not sufficient and the customer did not know exactly what he/she was buying? Or that the information was complete but there were problems in selecting the logistics supplier and the online seller lacked control over that provider?

In order to analyse such aspects and to seek answers to these questions, the objectives of this research focus on the analysis of the content of each phase of B2C electronic commerce, and on the relationships between the key variables that define the different phases. In line with those objectives, the article begins with a study of the electronic purchase stages proposed in the relevant academic literature to the point where a proposal can be made that serves as a reference for this work. The next step is to define the relevant variables for each of the established phases and that will configure the theoretical scale to measure the quality for each phase. After the description of the principal characteristics of the fieldwork, we complete the research by establishing the relationships between the variables that define each phase, as well as their principal strategic and operational implications for firms selling on the internet.

Phases of service encounters in B2C electronic commerce

The review of the literature enabled us to obtain the different proposals for the stages of the electronic purchase: for example, Chen and Chang (2003) identify three phases. First, they distinguish a component or phase that they call “interactivity”, which comprises the quality of the connection and the design of the website. They then identify the “transaction” phase, which covers issues such as value, convenience, security, entertainment and assessment. Their third phase, “fulfillment”, addresses order processing, delivery and after-sales service.

From another approach, Cao and Gruca (2004) state that the online purchase has two clearly differentiated stages. The first is the pre-purchase stage, in which the customer navigates the website, makes a choice, takes a decision, makes the payment and is informed about delivery. The online vendor must design this part of the process satisfactorily so that the customer does not detect any errors or defects and consequently abandon the purchase. The issues to be considered in this stage are product selection, product information and the functioning of the website. Having completed this stage, the customer enters the post-purchase service provided by the online vendor; in other words, everything that occurs after closing the purchase. In this stage, the aspects regarding on-time delivery, order tracking, condition of product and customer support are evaluated.

According to Jiang and Rosenbloom (2005), the purchase process is divided into two subsystems: the subsystem of convenience and that of fulfilment. The first of those focuses on the pre-sale and transaction phases, in which the following issues are assessed:

- convenience and speed of the order process;
- quantity, quality and relevance of product information;

-
- website functioning; and
 - economic charges and delivery options.

The fulfilment subsystem includes the phases of order fulfilment and after-sales service, with the following aspects being measured:

- customer support;
- order tracking; and
- the match between the product description and what was really delivered.

Another noteworthy work is that of Parasuraman *et al.* (2005), who distinguish two stages in the online electronic purchase and develop a scale of quality for each of them. Thus, the E-S-QUAL scale aims to measure the quality of the principal or core service of the firm. The dimensions of quality for the principal service coincide with the criteria that customers use when they assess a routine online encounter in which they experience no queries or problems with the transaction. The dimensions that those authors consider when evaluating the quality of service experienced by the customer are:

- efficiency;
- compliance;
- availability of the system; and
- confidentiality.

Moreover, the E-RecS-QUAL scale aims to measure the dimensions of quality that correspond to the recovery service; in other words, all the significant criteria of how the firm acts in a situation where the customer has queries or needs to solve some problem. This scale addresses issues such as response capability, compensation and contact.

The work of Posselt and Gerstner (2005) is also of interest, since it assesses the impact of the pre-sale and post-sale stages on online satisfaction. In the pre-sale stage, they use the following variables:

- ease of finding the desired product;
- the design and appeal of the website;
- the types of products available;
- clarity of product information;
- prices in comparison with those of other websites;
- delivery charges;
- delivery options;
- clarity of information; and
- the total cost of the purchase displayed before acceptance of order.

In the post-sale stage, they evaluate:

- the availability of the product;
- the possibility of knowing the status of the order;
- the delivery of the product within the expected time;

- the delivery of the correct product as described;
- ease of access to the firm;
- courtesy of personnel; and
- complaints resolution.

At this point, we consider it appropriate to propose a two-stage model of the electronic purchase, in which the moment of the confirmation of the order defines the end of the first stage and the beginning of the second. More specifically, we distinguish a first phase of the electronic purchase, the pre-sale stage, and a second phase, the post-sale stage (see Figure 1). The details of the proposed scales for the two stages are presented in the following section.

Dimensions and attributes of the two phases of the electronic purchase

We now propose two scales of quality. The first scale contains the dimensions and attributes that measure quality in the pre-sale stage of the electronic purchase, while the second covers the dimensions and attributes measuring quality in the post-sale stage.

Pre-sale stage

The following dimensions represent the aspects of the service that the customer experiences in the online purchase encounter and refer to the stage prior to the purchase and during the closure of the purchase, including payment. These dimensions, which are also explained by specific attributes detailed in Table I, are *design, information, security, adaption and offer*.

Design. The web page becomes the meeting point between the customer and the firm. It represents the firm and replaces the figure of salesperson and the functions of the traditional tangible aspects of physical encounters. Yang *et al.* (2003) stress, customers must find it easy to browse because otherwise they will feel confused, find it difficult to use and reject it.

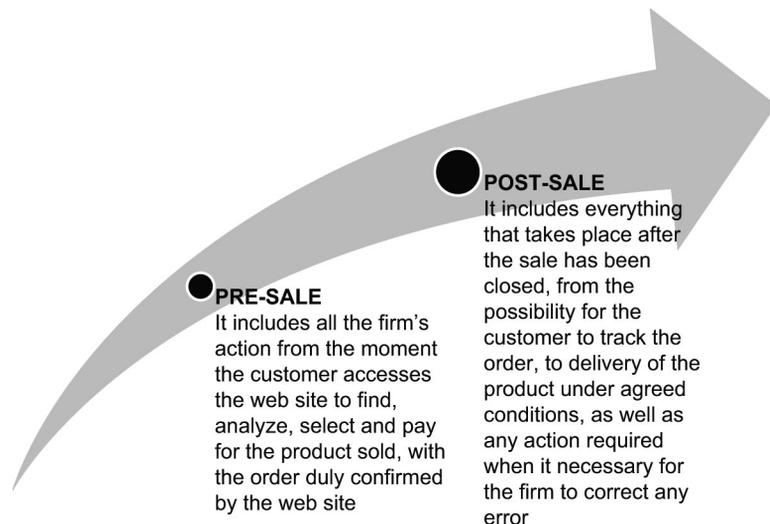


Figure 1.
Phases of electronic
commerce

Phase	Dimension	Concept	Attributes	Bibliographical references
Pre-sale	Design	Website's ability to attract aesthetically and facilitate browsing	Attractive design	Grabner-Kräuter (2002), Belanger <i>et al.</i> (2002), Kim and Stoel (2004a, b), Kim <i>et al.</i> (2006), Yang and Fang (2004), Yang <i>et al.</i> (2005)
			Intuitive and quick browsing	
Information	Information about the product and terms of purchase	Information about the product and terms of purchase	Explanation and orientation of the website content	Song and Zinkhan (2003), Kim and Stoel (2004a, b), Kim <i>et al.</i> (2006), Yang and Fang (2004), Yang <i>et al.</i> (2005)
			Browsing tools	
Security	Transmit trust and confidence to the customer	Transmit trust and confidence to the customer	Information about the product offer	Kim and Stoel (2004a, b), Kim <i>et al.</i> (2006), Yang and Fang (2004), Yang <i>et al.</i> (2005)
			Information about payment conditions and costs	
Adaptation	Adaptation to the needs of the customer	Adaptation to the needs of the customer	Availability of the product	Kim and Stoel (2004a, b), Kim <i>et al.</i> (2006), Yang and Fang (2004), Yang <i>et al.</i> (2005)
			Personal and financial customer data protection	
Value of offer	What does the customer obtain and what does it cost?	What does the customer obtain and what does it cost?	The information asked of the customer is reasonable	Kim and Stoel (2004a), Kim <i>et al.</i> (2006), Surjadaja <i>et al.</i> (2003), Wolfingbarger and Gilly (2003), Yang <i>et al.</i> (2004)
			Delivery methods	
Post-sale	Delivery	The firm quickly complies with what it promised and keeps the customer duly informed	Options and flexibility in the choice of product	Agatz <i>et al.</i> (2008), Lim and Dubinsky (2004), Min <i>et al.</i> (2006), Surjadaja <i>et al.</i> (2003), Szymanski and Hise (2000), Wolfingbarger and Gilly (2003)
			Wide and varied range	
Guarantee	After-sales customer care	After-sales customer care	Fair prices	Cai and Jun (2003), Kim <i>et al.</i> (2006), Santos (2003), Song and Zinkhan (2003), Surjadaja <i>et al.</i> (2003), Yang <i>et al.</i> (2004), Yang and Fang (2004)
			Economic charges	
			Compliance with the agreed terms of payment	
			Compliance with the agreed terms of delivery	
			Quick delivery times	
			Information about the status of the order	
			Accessibility of the firm (telephone, e-mail, fax, etc.)	
			Sales policy of the firm when there are errors or the customer changes his/her mind (returns policy, guarantee, etc.)	
				Chen and Dubinsky (2003), Collier and Bienstock (2007), Mohanty <i>et al.</i> (2007), Page-Thomas <i>et al.</i> (2006), Parasuraman <i>et al.</i> (2006), Tarn <i>et al.</i> (2003)

Table I.
Dimensions of the
pre-sale and post-sale
phases of B2C electronic
commerce

Information. The type of information that must be provided includes information about the prices to be paid, delivery charges, stock availability of product, delivery time and information about the products and services. All of that must be duly confirmed (by e-mail, for example) expressly stating the product ordered, quality and characteristics, total cost and terms of delivery (Mohanty *et al.*, 2007; Page-Thomas *et al.*, 2006; Collier and Bienstock, 2007; Kim *et al.*, 2006; Kim and Lennon, 2004).

Security. The issues regarding the security of the online transaction that can heighten the perceived risk and lack of trust (Lee and Turban, 2001; Hoffman *et al.*, 1988; Grabner-Kraüter and Kaluscha, 2003; Grabner-Kraüter, 2002). In this dimension, security is mainly related to the protection of the personal and financial data that the customer must provide in order to make the purchase.

Adaptation. This dimension represents the website offering the customer the possibility of choosing between different options and even participating in the design of the product/service. One of the most outstanding aspects is the range of options and modes in the offer of the service/product (Kim, 2002). This section also includes the range of delivery options (Feinberg *et al.*, 2002) and the option of different forms of payment (credit or debit card, cash-on-delivery, bank transfer, etc.) (Kim, 2002; Kolesar and Galbraith, 2000).

Offer. This dimension covers the value of the website's offer, which results from the combination of the benefits obtained by the customer (product/service offered) against the economic costs of access to those benefits. As Rosenoer *et al.* (2000) indicate, the freedom from all physical restrictions that the firm on internet enjoys favours sales by enabling the firm to offer a potentially infinite variety of products and services. With regard to costs, these may include tariffs for delivery distance, taxes and postage and packing, etc. (Brynjolfsson and Smith, 2000).

Post-sale stage. This stage includes the dimensions comprising the customer's experience after closing the online purchase, which are *delivery* and *guarantee*. The attributes of these dimensions are shown in Table I.

Delivery. The dimension *delivery* includes the variables prompt delivery, delivery of products without errors or faults, compliance with the terms of delivery, compliance with the terms of payment and information about the status of the order (Rutner and Langley, 2000; Jackson *et al.*, 1986; Ellram *et al.*, 1999; Servera Francés *et al.*, 2006; Kolesar and Galbraith, 2000; Xing and Grant, 2006).

Guarantee. It is very important that the firm establishes the necessary means for the customer to resolve any problems that may occur after closing the purchase. One way the firm can do this is to offer a returns policy and simple access to a representative of the firm who can address customer complaints and suggestions and show a real interest in listening to customers and attending to their requirements (Tarn *et al.*, 2003; Smith, 2005).

Research objectives and fieldwork

This research has three basic objectives:

- *Objective 1* – To determine the dimensionality of the scale of quality of the firm's actions in the pre-sale phase from the customer perspective. We propose the hypothesis (*H1a*) that the dimensions "design", "information", "security", "adaptation" and "value of the offer" form that scale. We also propose a second

hypothesis (*H1b*) that the dimensions of the pre-sale scale have a positive effect on the customer's disposition to repeat and disposition to recommend.

- *Objective 2* – To determine the dimensionality of the scale of quality of the firm's actions in the post-sale phase, also from the customer perspective. We propose the hypothesis (*H2a*) that the dimensions "delivery" and "guarantee" constitute that scale. As a second hypothesis (*H2b*), we propose that the dimensions of the post-sale scale have a positive effect on the customer's disposition to repeat and disposition to recommend.
- *Objective 3* – To analyse the impact of the firm's actions in the pre-sale phase on the customer's perception of the post-sale phase. We propose the hypothesis (*H3*) that the customer's perceptions of the pre-sale phase influence his/her perceptions in the post-sale phase.

The population of the study was defined as those lecturers at the University of Las Palmas de Gran Canaria (ULPGC) who had recently purchased on the internet. The choice of lecturer as the sample unit was considered suitable because it fits the profile of the average online purchaser in terms of education, income and age, as well as buying the products most commonly sold on internet, and guaranteeing the physical delivery of the product. The suitability of those characteristics stems from the fact that they fit not only the profile of the online purchaser and purchase pattern in Spain (AECCEM, 2007, 2008; AIMC, 2007) but also international profiles (Li *et al.*, 1999; Yoon *et al.*, 2002; Miyazaki and Fernández, 2001). The population of lecturers at the ULPGC is approximately 1,600. After a telephone survey of 835 ULPGC lecturers, we established that the estimated population that fitted the desired characteristics comprised 452 individuals. At the end of the survey process, the final sample comprised 191 informants. With those data, the sample error was 5.4 per cent, with a reliability level of 95 per cent ($Z = 1.96$, $p = q = 50$ per cent).

The survey used a self-administered personal questionnaire to ask each respondent to answer various questions regarding his/her perception of the firm's actions – by means of a nine-point Likert type scale – in each of the variables in each of the theoretical scales proposed for each phase. Moreover, after we had reviewed the practices previously employed by other authors (Parasuraman *et al.*, 2005; Yang *et al.*, 2004; Jun *et al.*, 2004; Parasuraman *et al.*, 1988, 1994; Cronin and Taylor, 1992), the respondents were asked to give three scores (overall perceived quality, disposition to repeat the purchase experience and disposition to recommend the experience to others), also on a nine-point Likert-type scale.

Results

A principal components analysis with Varimax rotation was applied to the data base of each scale (see Tables II and III), with the criteria of the eigenvalue being 1 or higher in the choice of factors. As Tables II and III show, the KMO ratio (values between 0.7 and 0.8) are considered good and the Bartlett's sphericity test (the level of significance must be below 0.05) of both models confirmed the viability of the factor analysis. The data show:

- that the results of the factor analysis can be considered satisfactory, since they explain around 65 per cent of total explained variance;

Table II.
Principal components
analysis for the pre-sale
scale

Dimension	Attributes	Communality	Factor load
Design	Attractive design	0.629	0.784
	Easy browsing	0.599	0.768
	Signposting	0.591	0.752
	Tools	0.657	0.784
Information	Delivery information	0.675	0.797
	Order confirmation	0.682	0.809
	Methods of delivery	0.519	0.713
Costs	Prices	0.706	0.837
	Economic charges	0.689	0.803

Notes: KMO: 0.749; Bartlett's sphericity test: 400.001 (0.000); scale reliability (Cronbach's α): 0.726; total explained variance: 63.862 per cent

Table III.
Principal components
analysis for the post-sale
scale

Dimension	Attributes	Communality	Factor load
Delivery	Compliance with terms of payment	0.585	0.748
	Compliance with terms of delivery	0.689	0.830
Guarantee	Interest in claims and complaints	0.718	0.806
	Sales policy	0.711	0.840
	Accessibility	0.605	0.778

Notes: KMO: 0.682; Bartlett's sphericity test: 171.603 (0.000); scale reliability (Cronbach's α): 0.658; total explained variance: 66.149 per cent

- that the correlations between the factors and the different attributes, expressed by means of factor loads, are highly significant with levels exceeding 0.5; and
- that the proportion of explained variance of each attribute, expressed in terms of communality, is acceptable (above 0.5) (Hair *et al.*, 1988).

With regard to the reliability of the scales, measured by Cronbach's α , the level of reliability of the total scale for each model exceed the minimum recommended value of 0.7 (Nunally, 1978), although, in the case of exploratory scales, values of around 0.6 are acceptable (Flynn *et al.*, 1990). The final result was a factor scale of three dimensions (design, information, costs) for the pre-sale phase and another of two dimensions for the post-sale phase (delivery and guarantee), with some modification to their initial configurations.

The second step was to apply a first-order confirmatory analysis. Firstly, a set of statistics was analysed (standardised CMIN, GFI, AGFI, RMSEA, PGFI, PNFI, NFI and CFI) to assess the goodness of fit of each of the models. This enabled us to confirm the capability to reproduce the matrix of sample parameters, variances and covariances calculated for the sample. The figures in Tables IV and V show that the indicators of goodness of fit are acceptable (Bollen, 1989; Marsh *et al.*, 1988; Hair *et al.*, 1988).

Secondly, and regarding the compound reliability of the dimensions, which explains the degree of internal consistency of the attributes – in other words its capacity to represent the common latent variable (dimension) – the values are acceptable in both

Dimension	Attributes	Standardised regression weights	p	Compound reliability	Extracted variance
Design	Attractive design	0.708	0.009	0.79	0.48
	Easy browsing	0.650	0.005		
	Signposting	0.642	0.007		
	Browsing tools	0.771	0.005		
Information	Delivery information	0.754	0.011	0.71	0.46
	Order confirmation	0.725	0.014		
	Methods of delivery	0.513	0.012		
Costs	Fair prices	0.508	0.015	0.60	0.44
	Economical charges	0.782	0.013		

Notes: Indicators of goodness of fit: CMIN = 25.738; p = 0.367; CMIN/DF = 1.072; GFI = 0.970; AGFI = 0.944; RMSEA = 0.020; PNFI = 0.625; PGFI = 0.517. Correlations between factors: 0.373 (information-costs), 0.426 (information-design), 0.276 (design-costs)

Table IV. Confirmatory analysis for the pre-sale scale

Dimension	Attributes	Standardised regression weights	p	Compound reliability	Extracted variance
Delivery	Compliance with terms of payment	0.604	0.016	0.44	0.30
	Compliance with terms of delivery	0.460	0.09		
Guarantee	Interest in claims and complaints	0.819	0.019	0.76	0.51
	Sales policy	0.734	0.010		
	Accessibility	0.572	0.005		

Notes: Indicators of goodness of fit: CMIN = 4.978; p = 0.290; CMIN/DF = 1.244; GFI = 0.989; AGFI = 0.960; RMSEA = 0.036; PNFI = 0.571; PGFI = 0.389. Correlations between factors: 0.447 (delivery-guarantee)

Table V. Confirmatory analysis for the post-sale scale

tables and for both scales, except for the dimension *delivery*, which displays a value below the recommended minimum of 0.60 (Bagozzi and Yi, 1988). The average extracted variance was also calculated: this indicates the overall level of variance in the indicators that is explained by the latent variable (Barrio García and Luque Martínez, 2000). According to Fornell and Larcker (1981), the average extracted variance must obtain values close to 0.50, which means that 50 per cent of the variance of the construct is explained by its indicators. The average level of extracted variance exceeded that figure and therefore is acceptable although the dimension *delivery* displayed a lower level than recommended.

Thirdly, the convergent validity was analysed. This refers to the congruence (or high correlation) of the different indicators or attributes of a scale and indicates that the construct (dimension) is related to the observed variables or attributes in a theoretically adequate way (Bollen, 1989). As a minimum condition of convergent validity, the average extracted variance of the attributes associated with a given factor must exceed

0.50 (Fornell and Larcker, 1981). Tables IV and V show that both scales meet that condition.

With regard to discriminant validity, this refers to the extent to which the measures of different concepts differ. In other words, discriminant validity is achieved if each attribute only estimates one factor – that is, the factors measure different things (Bagozzi *et al.*, 1991). Tables IV and V show that the correlation between each pair of factors for each scale is below 0.80, which indicates that the variables do not explain redundant information and that they represent different constructs (Bagozzi, 1994). Moreover, Fornell and Larcker (1981) state that discriminant validity is satisfied when the attributes of a dimension display a common variance above the squared correlation or variance shared between the dimension or construct and each of the other dimensions or constructs. It can be seen from Tables IV and V that, for all the models, the correlations between factors are below the square root of the average extracted variance of the associated factors.

In addition, the predictive validity of the two scales was compared. To that end, three regression analyses were applied, in which the respective dependent variables were overall quality, disposition to repeat and disposition to recommend while the independent variables were the factors in each model. As Tables VI and VII show, all

Table VI.
Regression analysis for
the pre-sale scale

Dimension	Standardised regression coefficient	<i>t</i>	Significance
<i>Regression analysis with overall perceived quality</i> (adjusted $R^2 = 0.288$; $F(p) = 26.581$ (0.000))			
Design	0.417	6.805	0.000
Costs	0.271	4.423	0.000
Information	0.228	3.725	0.000
<i>Regression analysis with disposition to recommend</i> (adjusted $R^2 = 0.148$; $F(p) = 11.999$ (0.000))			
Information	0.281	4.192	0.000
Costs	0.252	3.756	0.000
Design	0.139	2.076	0.039
<i>Regression analysis with disposition to repeat</i> (adjusted $R^2 = 0.151$; $F(p) = 12.235$ (0.000))			
Design	0.300	4.491	0.000
Information	0.209	3.130	0.002
Costs	0.174	2.597	0.010

Table VII.
Regression analysis for
the post-sale scale

Dimension	Standardised regression coefficient	<i>t</i>	Significance
<i>Regression analysis with overall perceived quality</i> (adjusted $R^2 = 0.290$; $F(p) = 39.823$ (0.000))			
Guarantee	0.445	7.275	0.000
Delivery	0.316	5.169	0.000
<i>Regression analysis with disposition to recommend</i> (adjusted $R^2 = 0.203$; $F(p) = 25.131$ (0.000))			
Delivery	0.355	5.483	0.000
Guarantee	0.291	4.495	0.000
<i>Regression analysis with disposition to repeat</i> (adjusted $R^2 = 0.271$; $F(p) = 36.394$ (0.000))			
Guarantee	0.429	6.925	0.000
Delivery	0.309	4.984	0.000

the dimensions in both scales display positive relationships with the three variables under analysis (overall quality, disposition to repeat and disposition to recommend) and the validity of criteria and nomological validity are confirmed. It can be seen that the dimensions of the post-sale scale, especially the dimensions regarding behavioural intentions, have greater predictive value than those of the pre-sale scale.

On the basis of the above data, *H1a* and *H2a*, regarding the dimensionality of the final scales, are partially accepted to the extent that the final scales represent a modification of the models originally proposed. *H1b* and *H2b* are accepted since the data confirm the predictive validity of the pre-sale and post-sale scales.

With the aim of achieving Objective 3, once the factor structure of the virtual pre sale and post-sale experience was known, we proceeded to identify the bivariate correlations between the variables constituting the pre-sale phase and those constituting the post-sale phase. The data obtained are shown in Table VIII and confirm *H3*, since they reveal the presence of significant correlations between the variables of the two-stage model.

The data displayed in Table VIII show that the variables of the dimension *design* (attractive design, browsing, signposting and browsing tools) do not display positive correlations with the variables of the dimension *delivery* (compliance with payment and delivery), but do with those of *guarantee* (interest in complaints, sales policy and accessibility). This seems logical since, if the customer finds the design complicated and, not favouring self-service, he/she will demand more of the dimension *guarantee*, in other words, greater support and orientation from the customer attention service (treatment of complaints, returns, etc.).

Pre-sale		Post-sale				
		Guarantee		Accessibility	Delivery	
		Interest in complaints	Sales policy		Compliance with payment	Compliance with delivery
Design	Attractive design	0.296 (0.000)	0.297 (0.000)	0.288 (0.000)	- 0.122 (0.093)	- 0.024 (0.742)
	Browsing	0.395 (0.000)	0.311 (0.000)	0.311 (0.000)	0.113 (0.118)	0.023 (0.752)
	Signposting	0.272 (0.000)	0.210 (0.004)	0.235 (0.001)	0.133 (0.067)	0.097 (0.180)
	Browsing tools	0.387 (0.000)	0.332 (0.000)	0.341 (0.000)	0.052 (0.477)	0.024 (0.743)
Information	Delivery information	0.292 (0.000)	0.213 (0.003)	0.102 (0.158)	0.203 (0.005)	0.550 (0.000)
	Order confirmation	0.316 (0.000)	0.222 (0.002)	0.062 (0.393)	0.282 (0.000)	0.347 (0.000)
	Methods of delivery	0.292 (0.000)	0.184 (0.011)	0.055 (0.452)	0.018 (0.803)	0.294 (0.000)
Costs	Fair prices	0.132 (0.069)	0.130 (0.072)	0.185 (0.010)	0.065 (0.371)	0.241 (0.001)
	Economic charges	0.202 (0.005)	0.179 (0.013)	0.164 (0.023)	0.134 (0.065)	0.238 (0.000)

Table VIII.
Correlations between the
pre-sale phase and
post-sale phase

The variables of the dimension *information* (delivery information, order confirmation, and delivery methods) reveal a positive and significant correlation with the variables of the dimension *guarantee* (except accessibility) and dimension “delivery”. This demonstrates that correct information in the pre-sale phase has a positive impact both on the dimension “guarantee” and on the dimension “delivery”, since it reduces possible customer complaints and errors in payments and deliveries.

Moreover, the variables of the dimension *costs* (fair prices and economic charge) correlates with the variable “compliance with delivery” from the dimension *delivery*, which demonstrates that fair prices and reliable deliveries are factors that must be present in all electronic transactions if the survival of the firm is to be guaranteed.

The above relationships show that the organisation’s actions in the pre-sale phase conditions, to a great extent, its actions in the post-sale phase. In other words, the post-sale actions are proof that the firm has played its role well in the pre-sale phase.

Conclusion

The academic literature on service quality has already addressed the influence of the firm’s actions in the different stages of the service encounter. However, the study of the importance and implications of the different phases in the electronic purchase has not received the attention it merits. That issue is relevant to the actions of firms operating on the internet, especially those organisations that sell products that cannot be delivered digitally. In effect, from the moment that the firm controls the physical delivery, as occurs in most cases, there may be a discrepancy between what was promised and what occurs and is accomplished and resolved in the post-sale phase.

Based on the results, we can draw a series of conclusions that are summarized in Table IX, and on which we now comment. First of all, the dimensions *design*,

Hypothesis	Comment	Conclusion
H1a. The dimensions <i>design, information, security, adaptation</i> and <i>value of the offer</i> form the scale of the firm’s actions in the pre-sale phase	The final result was a factor scale of three dimensions for the pre-sale phase: design, information and costs	Partially accepted
H1b. The dimensions of the pre-sale scale have a positive effect on the customer’s disposition to repeat and to recommend	The data confirm the predictive validity of the pre-sale scales	Accepted
H2a. The dimensions “delivery” and “guarantee” form the scale of the firm’s actions in the post-sale phase	The final result was a factor scale of two dimensions for the post-sale phase: delivery and guarantee	Accepted
H2b. The dimensions of the post-sale phase have a positive effect on the customer’s disposition to repeat and to recommend	The data confirm the predictive validity of the pre-sale scales	Accepted
H3. The customer’s perceptions of the pre-sale phase influence his/her perceptions in the post-sale phase	The data reveal that the organisation’s actions in the pre-sale phase conditions its actions in the post-sale phase	Accepted

Table IX.
Summary

information and *costs* constitute the factor structure of the pre-sale scale of quality. Secondly, the dimensions *delivery* and *guarantee* define the factor structure of the post-sale scale of quality. Our analyses show that both scales have a significant and positive impact on overall perceived quality and future behavioural intentions. However, the post-sale scale has a slightly greater effect on those constructs than the pre-sale scale. This reflects that the post-sale actions have greater influence on the success of the firm that sells online since those completed actions strengthen the perceptions of the firm's actions in the pre-sale phase. This situation demonstrates that the firm must exercise continuous control in order to avoid discrepancies between what was promised in the pre-sale phase and what was finally accomplished and resolved in the post-sale phase.

Moreover, there are significant correlations between the variables of the pre-sale scale and the post-sale scale. The reasons for that include the fact that any deficient action by the firm in the pre-sale phase has a negative effect on the post-sale phase. Also, the intensity and the characteristics of the actions in the post-sale phase depend to a great extent on the success of the pre-sale phase; this is accentuated in the electronic purchase due to its differential characteristics, namely the absence of the seller and the absence of physical premises.

Finally, apart from the need to replicate the research hypotheses with other data bases and so increase the goodness of fit of some statistical indicators, future lines of research and the actions of online retail websites should focus on relations with logistic agents and the improvement of customer care.

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