

## Building brand loyalty in fashion lingerie e-commerce

### 1. Introduction

Fashion industry is an important contributor to European Union economies (Ananda *et al.*, 2015) and the area of undergarment purchasing is an important focus of interest for researchers and the fashion industry. The global lingerie market is estimated to be around US\$30 billion, with a projected growth of perhaps 9% over the next 5 years, and the intimates segments is growing at a faster pace around the world than the lingerie market itself. According to a report by Fashionbi.com, the largest market for lingerie is North America and the United States, while in Europe the highest growth has occurred in Germany and Italy. Overall, the lingerie market is growing with support from the luxury sector, emerging markets and new trends, such as shapewear and eco-friendly intimate apparel made from natural fabrics.

This market is highly brand competitive and volatile and is characterized by a high number of categories and product types, but little is known as yet about consumers' motivations to purchase, their brand evaluations or fashion perceptions (Hume and Mills, 2013). Shorter lead times in manufacturing across the diverse range of lingerie garments that make up most suppliers' offers are becoming increasingly important in such a competitive market.

If a business is not already selling on the Internet, it is in trouble. If it is, it needs to address very carefully its order taking and fulfilment processes and their efficiency (Site 1). Those companies that use on-line channels, regardless of their size and characteristics, have excellent sales opportunities through e-commerce (Tiessen *et al.*, 2001), but this requires building a strong basis for differentiation in the international market (Knight *et al.*, 2004; Luo *et al.*, 2005). The increasing use of e-commerce and social media has affected the fashion industry; there is a remarkable focus on the marketing strategy perspective within this sector (Ananda *et al.*, 2015). In addition, the physical characteristics and functionality of undergarments are very important for the consumer. In study of Hume and Mills (2013), brand recognition is highly significant for companies whose customers repurchase based on the comfort, functionality and quality of garments. According Suzianty *et al.*, (2015), client fashion e-commerce, has as one of its concerns product quality and warranty replacement and return of the garments; therefore, the conditions exist to suggest that companies in the textile

underwear marketed by Internet, tend to have higher sales and relationship with its customers long term when taking into account the quality of both the product and the distribution channel.

There are few studies that empirically prove these positives effects in Internet sales in the fashion sector; therefore, the need to propose a causal model to continue this line of research is presented, the objectives of this study seeks to determine: (Obj1) the importance of quality and product innovation in achieving a high level of customer satisfaction in the e-commerce lingerie fashion market and generating positive effects in terms of trust and loyalty; (Obj2) whether the reputation acquired by a company related to interactions in the virtual community reinforces brand loyalty among its e-commerce customers.

This article is developed as follows: first the model is developed with its hypotheses, then the methodology, results and conclusions are presented.

## 2. Literature review

### 2.1. Product quality and innovation

The construction and maintenance of brand loyalty is the focus of several marketing theories, as is the establishment of sustainable competitive advantage over time, specifically for companies that sell online, which focus on strategic ways of managing their websites to attain these objectives (Gommans *et al.*, 2001) . Authors cited (Pan *et al.*, 2012), suggest that there are direct and indirect impacts of product quality on loyalty. This refers to the offer of products or services the value of which is perceived by customers as exceeding their purchase expectations in terms of price (price strategy), innovation or quality (differentiation strategies) and how these strategies enable leadership in a specific market (Porter, 2008; Aghamirian *et al.*, 2015) . For companies, it is essential to have a customer orientation in order to meet their needs, adapt and innovate, bearing in mind that they should specialize in niche markets in which they can be leaders (Knight *et al.*, 2004). In studies of marketing lingerie, quality has been related to the longevity of products, product life, functionality (e.g. shapewear/support) and comfort, these generating repurchase (Hume and Mills, 2013). The products could be easily imitated by others enterprises, in fashion market are necessary to build an

innovation strategy so as to ensure that businesses compete in an invincible position, based on meeting the new needs of customers (Zhenxiang and Lijie, 2011).

Based on the above, we hypothesize as follows:

*H1: Perceived product quality positively influences customers' satisfaction in lingerie fashion e-commerce.*

*H2: Perceived innovation in products positively influences customers' satisfaction in lingerie fashion e-commerce.*

## 2.2 Influence of the virtual community

According, a virtual community comprises a set of individuals who voluntarily relate to each other over the Internet, motivated by professing interest in a brand, organization or product. The experience of a brand on the Internet encompasses all the subjective perceptions from an individual's contact with a brand on the network and is a determining factor in building emotional ties over the long term between the customer and the company (Morgan-Thomas and Veloutsou 2013). Companies that sell online have to create emotional value associated with the purchase in order to generate a positive influence on the brand experience, therefore positioning themselves in terms of differentiation (Fornell and Larcker, 1981). Following this theory, several authors have created the concept of commitment to the customer, this being a multidimensional assembly comprising cognitive and emotional decision making in the brand-building process (Brodie *et al.*, 2013).

According (Brodie *et al.*, 2013), there is a growing trend for online shoppers to participate actively in processes of interaction among themselves to share information about their experiences of virtual shopping, triggering a process that affects the image or reputation of the companies involved. Thus, a differentiating factor for these companies is engagement in interaction with these interest groups that are formed in social networks; this entails company management considering its communication in these areas with the aim of achieving trust and loyalty (Casaló *et al.*, 2013; Aula, 2010) as it is important to interact properly with the virtual community to generate positive

brand value (Brodie *et al.*, 2013). According (Aula, 2010) the management of social networks in relation to reputation must be a priority strategy for success in e-commerce. Taken together, strategies for managing communities represent a potential source of competitive advantage for fashion firms (Pihl, 2014). Thus, we hypothesize that:

*H3: The influence of the virtual community positively influences reputation in lingerie fashion e-commerce.*

*H4: Reputation positively influences loyalty in lingerie fashion e-commerce.*

*H5: The influence of the virtual community positively influences trust in lingerie fashion e-commerce.*

### 2.3. Loyalty, satisfaction and trust

Brand loyalty is one of the most commonly used measures for testing the effectiveness of a company's strategy. As (Kassim and Abdullah, 2008) state, this involves two components: one attitudinal and the other behavioural, or emotional. The first of these relates to repeated purchase, but the second is the most important because it transcends brand preference.

Furthermore, another factor often analysed in e-commerce is trust, defined as the belief that the seller will behave ethically and will not take advantage of the vulnerability of the buyer (Mohamed Fadel Bukhari *et al.*, 2013). In the sector of clothing e-commerce, customers perceive trust through of: the virtual community (open discussions/forums), Shipping service used, response customer service, privacy security (Provides Q & A), product guarantee, provides information, transaction report, payment method (Suzianty *et al.*, 2015), Trust has been validated to the purchase of fashion e-commerce in Spain by Escobar-Rodríguez and Bonsón-Fernández (2016).

Satisfaction, as subjective relief granted as an emotional response from the consumer relations, involves a close relationship with the organization (Westbrook and Oliver, 1991). The satisfaction of the e-consumer is an important confidence builder and is related to the customer loyalty factor (Corbitt *et al.*, 2003). In fashion e-commerce the consumer satisfaction reduce consumer risk and increase consumer demand (Hjort and Lantz, 2016). Low levels of satisfaction not only reduce sales, also generate additional

costs; for example, product returns have negative profit implications for retailers since they have to cover the costs incurred by cooperating logistic partners carrying out delivery (Heuer *et al.*, 2015). Therefore, we consider that customer satisfaction in e-commerce is a personal perception that values different aspects such as product quality, the buying process, trust and brand.

We therefore hypothesize as follows:

*H6: Satisfaction positively influences trust in lingerie fashion e-commerce.*

*H7: Satisfaction positively influences reputation in lingerie fashion e-commerce.*

*H8: Trust positively influences loyalty in lingerie fashion e-commerce.*

[Insert figure 1]

### 3. Research approach

#### 3.1. Measurement

The items measuring each variable were found in the literature, all items are adopted formative character, supported in previous studies (Appendix 1). The questionnaire was designed using a 7-point Likert scale to elicit responses, adopting the usual method to measure variables that are not directly quantifiable, to discard language problems and comprehension of the questionnaire, a pre-test was carried out with 10 marketing professors who eliminated unnecessary items and made modifications that allowed to leave a minimum of 3 items per variable meeting the methodological needs (Churchill and Iacobucci 2004).

#### 3.2. Data collection and sample

Leonisa International collaborated in this research through its subsidiary in Barcelona, Spain. The company has been selling lingerie products in Spain and Europe for the last 20 years, largely through e-commerce and the website (Site 2) ([www.leonisa.com](http://www.leonisa.com)). It is worth noting that the company competes in a specialized niche market that seeks innovation and product quality, aspects that Leonisa.com highlights in its products. Initially, the company's production was aimed at the mass market without any differentiation. Ten years after its founding (1966), Leonisa International made its first exports to Costa Rica to open up the doors of its commercial expansion. In 1970, it was already selling in 11 countries and became one of the first Colombian companies in the sector to export its goods. This shift to an export orientation implied a change in the paradigm of production: the concept of differentiated products was introduced to meet the needs of women according to their stages of development or activities. Thus, the company began producing for adult women, youth, sports and even children and adolescents, emphasizing its slogan "Leonisa, yes she is a woman" throughout its 47-year history. Leonisa has evolved as a philosophy, adopting a global view of female fashion lingerie. It has identified its target market as Latina women residing anywhere in the world and the company has evolved into a "multichannel" signature, with an umbrella brand under which the different concepts of lingerie are grouped (Ramírez 2006). It also has a marketing research and design department that makes proposals and develops fashion concepts that allow participation in fairs, such as an important event for intimate apparel held in Lyon (France). As such, the company is suitable for testing the proposed hypotheses.

Data were collected through an online questionnaire, this methods having been successfully applied in similar studies on e-commerce (Agudo-Peregrina, 2014; San Martín and Herrero, 2012). For the selection of the sample, the marketing department of the company Leonisa.com, sent the questionnaire to the entire database of its active customers, which allowed to obtain a significant sample of buyers of the brand. The full sample obtained comprised 114 questionnaires, from which those with incomplete or unclear responses were omitted, thus yielding a final sample of 95 questionnaires (these were mainly from women residing in Spain and the rest of Europe). The minimum sample size for this model is 40; the model complies with the sample parameters needed to be analysed by PLS (Hair *et al.*, 2013) (Appendix 1).

## 4. Empirical results

### 4.1. Data analysis

This study employed a regression analysis of latent variables, based on the optimization technique of partial least squares (PLS) to elaborate the model. PLS is a multivariate technique for testing structural models and estimates the model parameters that minimize the residual variance of the dependent variables of the whole model (Hair *et al.*, 2013). It does not require any parametric conditions and is recommended for small samples, also, as the proposed model is novel, PLS analysis is recommended for this case (Hulland 1999, Matute-Vallejo *et al.*, 2015).

### 4.2. Measurement model evaluation

The simple reliability of the measurement scales used was calculated considering the Cronbach's alpha values, all of which were above 0.70 (Nunnally and Bernstein 1994). In the analysis of variance, all the values for the average variance extract (AVE) were above 0.60, and for composite reliability, all the values were superior to 0.65 (Steenkamp and Geyskens 2006), exceeding the minimum acceptable values for validity (Table 1).

[Insert Table 1]

To confirm discriminant validity among the constructs, the square root of the AVE must be superior to the correlation between the constructs (Fornell and Larcker 1981). Table 2 presents the square roots of the AVE (on the diagonal) and the correlations among the constructs. The discriminant validity was verified by comparing the value of the average variance extracted (AVE) of each variable with the squared correlation of each construct's variable. The values obtained from the square root of the AVE were higher than those in the constructs, and therefore, it can be considered that each variable is more strongly related to their own items than to those of other variables, which is acceptable, the values indicate adequate discriminant validity of the measurements (Fornell and Larcker 1981).



[Insert Table 2]

For test reliability, Table 3 verifies that the weights for each indicator were significant and thus, to measure the internal coherence of the measurement of all the indicators in relation to their corresponding variables, validation included the use of Dillon-Goldstein's rho, known as the coefficient of composite reliability, in which all the values are greater than the minimum acceptable value of 0.70 (Gefen *et al.*, 2000).

#### 4.3. Structural model analysis

To test the predictive ability of the model, a bootstrapping procedure was performed with a number of sub-samples ( $N = 500$ ). All the R-squared values are greater than 0.10 with a significance of  $t > 1.96$  (Fralk and Miller 1992). The variances of the dependent variables explained (R-squared) are not less than 0.10, Reputation: (R-squared: 0,282), Satisfaction: (R-squared: 0,677), Trust: (R-squared: 0,752) and Loyalty (R-squared: 0,628), indicating that the independent explanatory variables are adequate and confirming the satisfactory predictive capability of the model (Fralk and Miller 1992). The hypotheses were validated and the relationships were positive, mostly with high significance (Table 4).

[Insert Table 3]

[Insert figure 2]

#### 5. Conclusions and managerial implications

The purpose of this study was to determine: (Obj1) the importance of quality and product innovation in achieving a high level of customer satisfaction in the e-commerce lingerie fashion market and generating positive effects in terms of trust and loyalty; Obj2) whether the reputation acquired by a company related to interactions in the virtual community reinforces brand loyalty among its e-commerce customers.



Hypotheses validated the interrelationships between quality and product innovation in attaining a high level of virtual customer satisfaction in lingerie fashion e-commerce, this being an important antecedent of trust. In addition, the reputation acquired by a company related to interactions in the virtual community among its electronic customer ultimately affects the degree of brand loyalty in lingerie fashion e-commerce.

The results demonstrate the salience of theoretical conceptions regarding product characteristics (quality, innovation and satisfaction) and brand constructs (virtual community, reputation and trust) (Fig. 2). The factors that directly affect satisfaction and indirectly affect brand loyalty in the lingerie market are the perception of quality and product innovation, validating hypotheses H1 and H2 and clearly showing that in fashion products, attention must be paid to these attributes. This result endorses the strategy of the company, verifying that the customers highly value product quality and also believe that the firm's products are innovative, in line with the fact that Leonisa.com offers specialized lingerie and body shapewear. These results, allow to associate to the purchase of clothing on the Internet the search for the customers of products of quality and innovation, according to the studies for clothes of Hume and Mills (2013) and Suzianti *et al.* (2015).

The virtual community exerts an influence on reputation and trust (H3, H5), validating (Touchette *et al.*, 2015) study, which showed that the profile of social virtual networks pages provide an opportunity for apparel brands to increase consumer-brand interactions through the use of branded entertainment. According (Muntinga *et al.*, 2011), interactions with the virtual community stimulate the interactions with the brand. This level of engagement will increase brand loyalty. Likewise, the interactions of the brand in the network with its "communities of style" represent a potential source of competitive advantage, reinforcing the notion that fashion firms need to find approaches to manage this new "consumer-dominated information platform" successfully (Pihl 2014).

An important result is the relationship between customer satisfaction and brand reputation (H7), which shows a direct effect. This relationship can be understood as demonstrating that the reputation that the brand generates from the purchase and use of its products can positively influence the image that the client has in mind when giving a

rating, thus leading in turn to a positive assessment that contributes to the firm's global reputation.

In conclusion, this exploratory study is one of the first to present a model that validates positive relationships in terms of the creation of satisfaction and brand loyalty, as well as showing the factors concerning strategic market differentiation (quality and innovation in products) that are required in this virtual channel (H4, H6, H8), confirming studies on purchasers in this sector from previous years (Hume and Mills 2013, Escobar-Rodríguez and Bonsón-Fernández, 2016).). Moreover, this model has examined the satisfaction–loyalty relationship among the virtual community within this product segment, an important factor for customers when deciding which brand to choose in the electronic purchasing process.

The findings suggest that companies must not neglect the level of satisfaction in generating client policies, quality products and services (new materials, new products, new fashion ideas) and also that they must maintain high levels of reputation and trust concerning the brand on the part of customers and stakeholders. In strategic planning regarding social media, it is essential to consider the blogs of influence in fashion lingerie, as well as engaging in the management of social networks (Facebook, Twitter, Instagram) and mailing as channels of direct communication with customers. Here, the use of new multimedia technologies is useful as part of a loyalty strategy and particularly ensuring brand loyalty. According to Zhenxiang and Lijie (2011) quality and innovation product is quite crucial towards the enterprise; to guarantee the quality of goods sold online, feedbacks of consumers could also reflect the quality of goods. Consequently, greater emphasis should be placed on user experience services, is necessary to designing user-friendly page and interactive forum advantage of the feedbacks to ensure that consumers could acquire a variety of information about products displayed on the website.

This paper presents a case study of a brand as exploratory research in the lingerie industry. It is recommended that future studies should focus on analysing samples from a group of companies in the lingerie industry to extend the results.

The proposed model is novel and no similar model could be found in the literature, integrating the physical perceptions of products and the emotional perceptions of brand

loyalty. Thus, the model requires further validation, both with the same types of product and other products the characteristics of which can serve this purpose.

Moreover, the virtual community variable could be analysed in greater depth by breaking it down into more specific variables, such as *engagement*, *social media manager*, etc., to determine where more attention needs to be paid, specifically in terms of digital marketing actions that would positively enhance the effect on the purchase, reflected in customer loyalty.

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### Websites List

Site 1: Global market review of lingerie – forecasts to 2020

[http://www.just-style.com/market-research/global-market-review-of-lingerie-forecasts-to-2020\\_id240847.aspx](http://www.just-style.com/market-research/global-market-review-of-lingerie-forecasts-to-2020_id240847.aspx)

Site 2: Oficial web Leonisa

<http://www.leonisa.com>



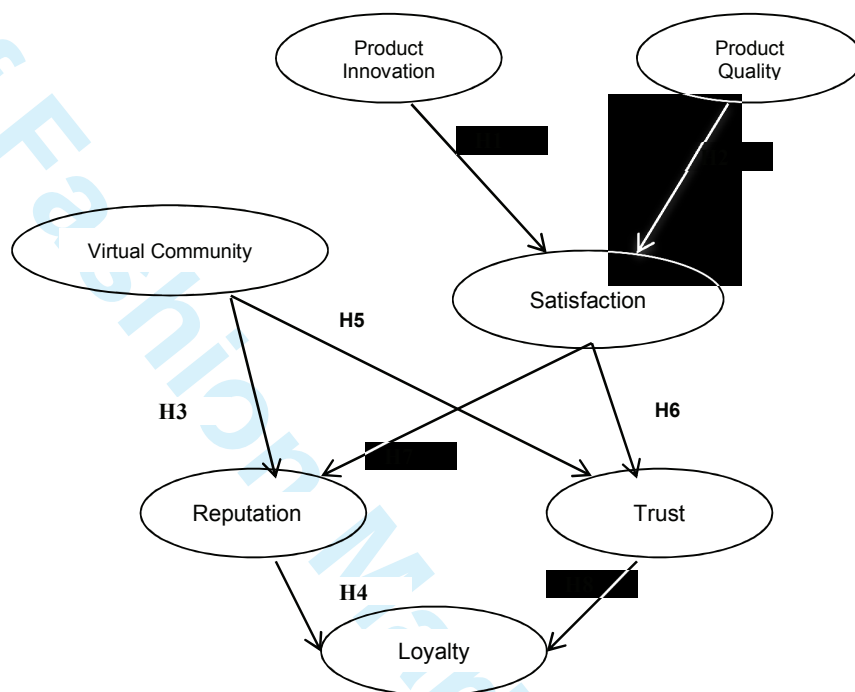


Fig. 1: Proposed model (source: Authors' own elaboration)

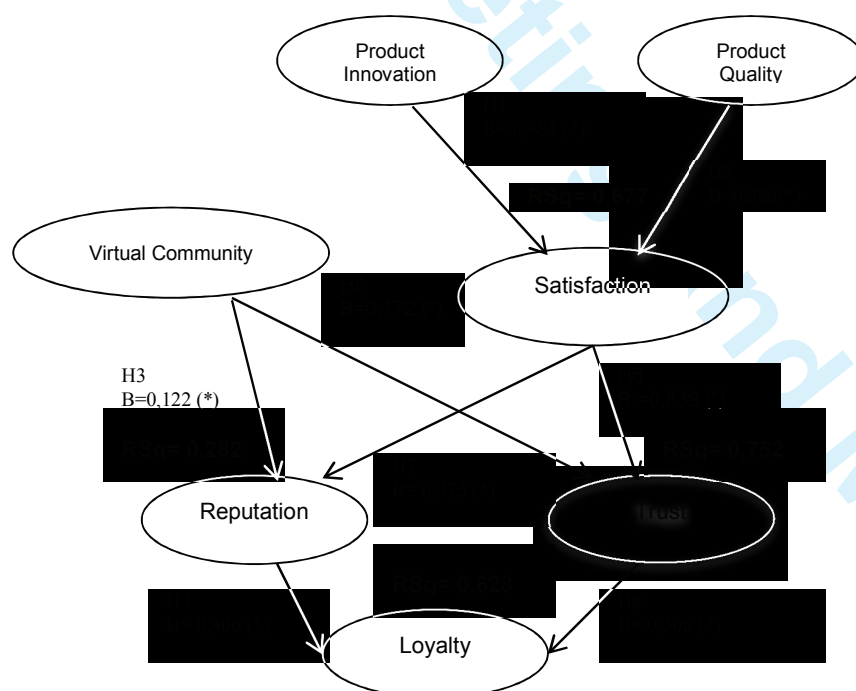


Fig. 2: Results of testing the model (significance  $*p < 0.05$ )



Table 1: Cronbach's alpha coefficients, construct reliability and average variance extracted (AVE).

Construct	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Community Influence	0.848	0.901	0.752
Innovative Product	0.871	0.921	0.796
Loyalty	0.946	0.962	0.863
Quality Product	0.947	0.966	0.905
Reputation	0.949	0.964	0.869
Satisfaction	0.927	0.948	0.821
Trust	0.937	0.960	0.888

Table 2: Discriminant validity matrix

	CI	IP	LO	QP	RE	ST	T
CI	<b>0.867</b>						
IP	0.461	<b>0.892</b>					
LO	0.377	0.679	<b>0.929</b>				
QP	0.400	0.787	0.676	<b>0.951</b>			
RE	0.293	0.519	0.661	0.548	<b>0.932</b>		
ST	0.360	0.788	0.667	0.767	0.519	<b>0.906</b>	
T	0.374	0.773	0.711	0.811	0.505	0.865	<b>0.942</b>

Table 3.  
Indicator weights

Indicator	Weight	t-value <sup>1</sup>
1FR	0.892	152.480
2FR	0.924	99.981
3FR	0.916	91.492
4FR	0.921	174.921
1S	0.913	142.236
2S	0.846	106.886
3S	0.916	148.263
4S	0.891	137.255
Q1	0.866	117.121
Q2	0.903	106.886
Q3	0.930	148.263
Q4	0.906	119.618
1L	0.938	204.500
2L	0.935	193.909
3L	0.860	73.177
4L	0.913	138.450
IS1	0.883	95.040
IS2	0.924	160.150
IS3	0.917	157.203
1INN	0.891	107.264
2INN	0.856	70.927
3INN	0.838	60.642

4INN	0.877	85.379
1PRQ	0.898	116.504
2PRQ	0.936	162.257
3PQR	0.888	66.681
4PQR	0.887	13.960

† All items were significant with a p-value <0.001.

Table 4: Structural model tests – summary results

Hypothesis	Results	Influence	SPC	p-value	Supported	Construct	R-squared
H1	Accepted	IP → ST	0.484	0.001	If (p <0.05)	Satisfaction	0.677
H2	Accepted	PQ → ST	0.389	0.006	If (p <0.05)		
H3	Accepted	VC → RT	0.122	0.0025	If (p <0.05)	Reputation	0.282
H7	Accepted	ST → RT	0.406	0.000	If (p <0.05)		
H5	Accepted	VC → TH	0.172	0.001	If (p <0.05)	Trust	0.752
H6	Accepted	ST → TH	0.839	0.001	If (p <0.05)		
H4	Accepted	RP → LO	0.406	0.000	If (p <0.05)	Loyalty	0.628
H8	Accepted	TH → LO	0.506	0.000	If (p <0.05)		

#### Appendix 1. Questionnaire

Construct	Supporting literature
<b>Reputation</b> (1FR) I believe that the Leonisa International brand has great recognition and prestige. (2FR) I think the Leonisa International brand has a "good name". (3FR) I believe that the Leonisa International brand has a good reputation. (4FR) I think the Leonisa International brand is one of the most important in swimwear and lingerie.	(Kassim and Abdullah 2008)
<b>Satisfaction</b> (1S) I am satisfied with the products I have purchased from the Leonisa.com website. (2S) I am satisfied with the experience of surfing the Leonisa.com website. (3S) I am satisfied with the purchasing process conducted on the Leonisa.com website. (4S) I feel comfortable with the web services of Leonisa.com.	(Kassim and Abdullah 2008)
<b>Trust</b> (Q1) I trust the information displayed on the Leonisa.com website about its products. (Q2) I trust the promises and assurances given concerning products on the Leonisa.com website. (Q3) The Leonisa.com website gives me confidence to buy online. (Q4) I trust my bank and the Leonisa.com website handling confidential information.	(Brodie <i>et al.</i> , 2013)
<b>Loyalty</b> (1L) When I need to buy lingerie or swimwear, I think of the Leonisa.com website as the first option. (2L) I think the Leonisa.com website is my favourite for buying lingerie and/or swimwear. (3L) I think the Leonisa.com website is the best online store for buying lingerie and/or swimwear. (4L) I often like to buy from the Leonisa.com website.	(Dennis <i>et al.</i> , 2009)
<b>Influence of Virtual Community</b> (IS1) I appreciate the comments of other users about the Leonisa.com website on social networks (Facebook, Twitter, etc.). (IS2) I think there is important information related to Leonisa.com on the Internet.	(Casaló <i>et al.</i> , 2013; Corbitt <i>et al.</i> , 2003)

(IS3) I think the Leonisa.com website is positively valued in social networks by other clients.	
<b>Innovation</b> (1INN) I believe that products purchased from the Leonisa.com website are novel. (2INN) I think that the website offers innovative products from Leonisa.com. (3INN) Products purchased from the Leonisa.com website are unique and hard to find on the Internet. (4INN) I believe that products purchased from the Leonisa.com website offer me special features that other brands do not have.	(Čater and Čater 2010)
<b>Quality Product</b> (1PRQ) I believe that products purchased from the Leonisa.com website are of good quality. (2PRQ) I believe that products purchased from the Leonisa.com website are always of good quality. (3PRQ) I believe that products purchased from the Leonisa.com website have fulfilled my expectations. (4PRQ) I am very satisfied with products purchased from the Leonisa.com website.	(Čater and Čater 2010)

(Source: Authors' own elaboration)