Millennial Consumer Preferences in Social Commerce Web Design

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Abstract

Purpose – Considering the context in which social commerce has changed the way consumers search for information and share experiences, the objective of this study is to understand how three factors of web design (usability, functionality, and sociability) influence consumers' cognitive and affective assessments and affect their intention to buy.

Design/methodology/approach – Using the PLS technique on a sample of 230 millennials who are regular social commerce users, this study is adapted to the social context of the existing literature on website quality, as well as theories of social learning and consumer intention to buy.

Findings – We used the results to compare the study's 9 hypotheses, thereby linking variables of web design and socialization in e-commerce environments with components of social learning theory.

Originality/value – This article expands the understanding of the influence of design in social network website environments on consumer assessments and, consequently, their intention to buy, highlighting the importance of design for affective assessments. It also provides relevant information to professionals on how to design their websites to improve consumer purchase attitudes and behaviors, allowing them to focus on how to improve the user experience through web design within the context of continuously changing devices and consumer preferences.

Keywords: Social commerce; Web design; Intention to buy; Social learning; Millennials.

Review of Business Management

1 Introduction

Social commerce (SC) has become a means by which companies like Amazon and eBay add value to their services thanks to the use of Web 2.0 tools, which encourage customer participation during the purchase process (Wang and Zhang, 2012). Currently, SC is one of the biggest stars of the digital world, with a global income of $90 billion anticipated in 2020 (Aladwani, 2018).

It is crucial for companies interested in capitalizing on SC to understand the mechanisms by which users make decisions and conduct transactions (Baghdadi, 2013). With a proper understanding, companies can expand their customer base and optimize their strategies. Accordingly, web design is a determining factor in user adoption processes (Huang and Benyoucef, 2017), as it has a significant impact on their purchase decisions and, consequently, the benefits.

Although various studies have examined how factors of web design and factors related to attitude and learning influence the intention to buy (Huang and Benyoucef, 2015; Shanmugam, Sun, Amidi, Khani, and Khani, 2016; Shaouf, Lu, and Li, 2016), which shows that it a fundamental topic of studies within the field of SC (Han, Xu, and Chen, 2018), there is little understanding about the connection that exists between these dimensions. Similarly, despite it being established that there are differences in how different age groups use and value SC (Huang and Benyoucef, 2017; Williams, 2018), there is very little empirical analysis focused on how the preferences of the millennial public are considered in the design of these sites. This study considers these two main aspects, proposing a research model that includes three key factors in the design of SC (usability, functionality, and sociability), and two relevant factors in the study of social learning (cognitive and affective assessment), in order to determine how these variables influence the millennial public's intention to buy. In order to validate the proposed model, the study is based on a sample of 230 millennials, using the PLS (partial least squares) technique to analyze their responses. The results show that web design is a key factor for millennial consumers when making cognitive and emotional assessments of a website, consequently favoring their intention to buy.

2 Social commerce

The use of the internet as a space to make purchases, search for information, and create new businesses has attracted a large number of users (Hall and Tiropanis, 2012). This trend has been further strengthened with the appearance of social networks, which offer more interactive sales channels. Consumers can also create, receive, and share information about products and purchase experiences with other users (Chang, 2017), as well as companies.

E-commerce initially focused on maximizing the efficiency of search strategies, one-click buying, and virtual catalogs, etc. (Carroll, 2008). Customers therefore interacted with the platforms individually and independently (Kim and Srivastava, 2007) since navigation was only conducted in one direction, from the company to the customer (Parise and Guinan, 2008). The development of social networks has turned e-commerce into a customer-oriented social setting (Wigand, Benjamin, and Birkland, 2008). In this environment, companies can understand their customers, giving them an idea of customer purchase experiences and expectations and helping them develop successful commercial strategies (Constantinides and Fountain, 2008).

The introduction of social tools (social networks, forums, etc.) in e-commerce websites has favored the foundation of SC. SC is understood as the development of e-commerce activities and other transactions through environments based on social media and Web 2.0 technologies (Hajli, 2014; Liang and Turban, 2011). In these environments, consumers can interact in social purchase activities, such as product searches, information exchange, and collaborative decision-making (Shen and Eder, 2012). SC allows customers to express themselves and share their information with other customers

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and companies (Shanmugam *et al.*, 2016), not only focusing on making a purchase (Molinillo, Liébana-Cabanillas, and Anaya-Sánchez, 2018a), but also on socializing. SC platforms have two configurations (Liang and Turban, 2011; Molinillo et al., 2018a): social networks with options to communicate with other customers and advertising and transaction systems (e.g., Facebook, Instagram, etc.); and websites dedicated to sales with e-commerce designs and features, including social tools, such as forums, review and evaluation systems, etc. (e.g., Amazon, AliExpress, and Threadless).

SC has had a major impact on commercial processes and is beneficial for consumers and business owners (Hajli, 2013). Consumers can make a more social, collaborative purchase based on collective intelligence used to make more accurate decisions (Dennison, Bourdage-Braun, and Chetuparambil, 2009). Business owners can identify behaviors, preferences, and expectations that allow them to offer better services (Constantinides, Romero, and Gómez Boria, 2008) and attract buyers through current consumer recommendations, thus establishing and strengthening relationships (Marsden, 2010).

3 Theoretical model

3.1 Web design

A website's quality can be defined as the performance of the electronic commerce system in terms of information and services (Liao, Palvia, and Lin, 2006). Likewise, design is one of the main factors that determine users' perceptions of quality (Wolfinbarger and Gilly, 2002), which in turn affects their behavior (Liang and Lai, 2002). Companies should strive to offer websites with quality designs (Liang and Turban, 2011), which invite users to visit them and make purchases (Fan and Tsai, 2010). Huang and Benyoucef (2017) argue that in order to make the most of SC, it is necessary to study the design's usability, functionality, and sociability, as they help reduce errors, generate positive attitudes, and increase the intention to buy/use the system (Huang and Benyoucef, 2015; Wu, Shen, and Chang, 2015).

3.1.1 *Web usability*

Usability is defined as the capacity of software to be understood, learned, operated, and to appear attractive to users (Fernández, Insfran, and Abrahão, 2011). It specifically refers to the degree to which users can use a website to achieve their objectives effectively, efficiently, and satisfactorily (Huang and Benyoucef, 2017; Venkatesh, Hoehle, and Aljafari, 2014). According to Huang and Benyoucef (2017), usability is measured by a series of attributes: ease of use, esthetics, organization, accessibility, adaptability, simplicity, and information quality. On the other hand, Rosenzweig (2015) considers the main characteristics to be the ease of learning how to use a website, efficiency, rectification of errors, and satisfaction with the experience. Usability is a fundamental variable of website quality, increasing the intention to use, user acceptance (Davis, 1989), and intention to buy (Ben Yahia, Al-Neama, and Kerbache, 2018).

3.1.2 *Functionality*

Functionality refers to a set of website features and properties that meet the needs that arise as a user is conducting a specific task (Stefani and Xenos, 2011). Functionality includes the following attributes (Huang and Benyoucef, 2017; Liao and Shi, 2017): response time, information usefulness, contact methods, help and search functions, payment security, information protection, and consumer satisfaction. Functionality is a factor that has traditionally been used in the design of SC (Huang and Benyoucef, 2017). Furthermore, when consumers are offered a high level of functionality, they can use SC better by interacting with the information and services available (Shaouf *et al.*, 2016). A quality web design should provide adequate functional support that meets consumers' needs at every stage of the purchase process (Huang and Benyoucef, 2017).

3.1.3 *Web sociability*

Sociability is one of the variables that contribute to the quality of SC (Guo and Barnes, 2011). Using Web 2.0, it makes the most of the power of technology in a more collaborative, interactive way, encouraging the creation of communities that connect users, providing them with access to knowledge and experiences (Dennison *et al.*, 2009). Huang and Beyoucef (2017) indicate the following attributes that serve as a measure of an SC site's sociability: social communities, recommendation systems, creation of social connections, content generation and distribution, establishing conversations, and consumer participation. Accordingly, sociability in SC offers an experience that allows consumers to connect with each other, find people with similar interests, share information, and communicate while making purchases (Yang, Li, Kim, and Kim, 2015).

3.2 The dimensions of social learning

On SC sites, customers can access the knowledge and experience of other users regarding products that interest them (Huang and Benyoucef, 2017). This process is known as social learning (Bandura and Walters, 1977). Numerous authors have studied the processes that affect learning and how individuals behave in response to stimuli they receive when making transactions; however, these studies only focus on a part of the internal process, the cognitive dimension, omitting the affective aspect, which is of relevant importance. It is currently understood that all internal psychological processes that occur during learning can primarily be divided into two dimensions: cognitive assessment and affective assessment (Illeris, 2003).

The term "assessment" can be defined as an automatic association (conscious or unconscious) between a response and/or internal affective state and a stimulus or specific situation, whether positive or negative (Castelfranchi, 2000). Chen, Lu, and Wang (2017) define cognitive and affective assessments within the perspective of

the purchase process in SC as follows: cognitive assessment is the evaluation an individual makes of the information or stimuli he/she perceives through rational psychological processes based on knowledge and experience; affective assessment is the evaluation an individual makes of the feelings or sensations he/she experiences as a result of the stimuli he/she perceives, which develop emotionally through internal psychological processes based on expectations or motivations.

By interacting with a website, customers develop corresponding learning behaviors associated with that site based on these two assessments (Lee, Chen, and Ilie, 2012). These behaviors directly affect their attitudes towards products and websites, which will influence their purchases (Lorenzo, Kawalek, and Ramdani, 2012). Social learning is essential to SC, since buyers learn from the knowledge and experience of others (Chen, Lu, and Wang, 2017).

3.3 Intention to buy

The intention to buy refers to the likelihood of consumers buying a certain product in the future (Wu, Yeh, and Hsiao, 2011). In a digital environment, the intention to buy is defined as the consumer's desire to buy a product or service from a website (Ha and Janda, 2014). The literature highlights that the intention to buy has a significant relationship with actual purchases (Park, Jeon, and Sullivan, 2015). In other words, products will be bought at a higher rate by consumers who state that they have positive intentions to buy said products. Consequently, the intention to buy turns out to be a crucial factor in predicting the effectiveness of the stimuli developed in digital environments (Lu, Fan, and Zhou, 2016).

4 Hypotheses and research model

4.1 Hypotheses

Several studies have demonstrated that usability, functionality, and sociability affect consumers' assessments (e.g., Kim and Park,

2013) by helping them overcome the risk inherent in online environments and improving their experiences (Lee *et al.*, 2012; Liang and Lai, 2002). Similarly, it should be taken into account that everyone perceives and processes information differently based on their cognitive capacities, experiences, and attitudes, which is related to their learning processes.

SC has support elements for navigation and error prevention, which allows consumers to solve problems, thereby leading to more efficient decision-making and generating positive behavioral intentions (Ben Yahia *et al.*, 2018), including purchase and use (Huang and Benyoucef, 2017; Lee and Chen, 2011). It is therefore necessary for users to assess the website positively, both on a utilitarian and affective level (see Chen, Lu, and Wang, 2017; Lee *et al.*, 2012). Accordingly, customers satisfied with usability will make positive assessments that lead to developing attitudes that motivate them to continue using the website (Jarvenpaa and Todd, 1996). Specifically, the development of a usable website reduces the required cognitive effort and increases cognitive capacity (Helander and Khalid, 2000). It helps reduce cognitive effort as the information is in front of users, meaning they do not have to remember it, which promotes positive emotions (Cheng and Patterson, 2007). Aspects related to usability in online environments, such as ease of reading, stability, and consistency, have a positive effect on cognitive and affective assessments (Lee and Chen, 2011).

H1. *The usability of an SC site has a positive influence on cognitive assessment.*

H2. *The usability of an SC site has a positive influence on affective assessment.*

When website users cannot locate the information they need, they feel disoriented, which is why websites should have features that improve their experience (information, searches, esthetics, etc.) (Huang and Benyoucef, 2017).

If the website is not functional, users have to search for complementary information, which is a difficult task and makes the whole process take longer. Search time is accordingly linked to the website's functionality. If it is excessive, users will consequently have a negative assessment (Lee *et al.*, 2012). This aspect is related to the site's characteristics, specifically with density and visual complexity (Tuch, Bargas-Avila, Opwis, and Wilhelm, 2009), navigability, and orientation (Pallud and Straub, 2014). This helps consumers identify the products they are searching for and finish the tasks they intend to carry out. SC should therefore contain elements and features that help users reduce the cognitive load and favor changes in the nature of the tasks that simplify navigation (Chen, Lu, and Wang, 2017). Quality information that is well-organized, visual attractiveness, and the ease of use directly affect the emotions consumers feel while using a website, and consequently, their online purchase decisions (Liu, Li, and Hu, 2013).

H3. *The functionality of an SC site has a positive influence on cognitive assessment.*

H4. *The functionality of an SC site has a positive influence on affective assessment.*

The external interaction processes (participation and communication) constitute the social dimension of user-SC relationships, which also serve to integrate people in communities, allowing individuals to develop sociability. Socialization is a key aspect for consumers to obtain greater value in SC (Huang and Benyoucef, 2017). This occurs thanks to the effects of external interaction on the internal psychological process, both cognitive and affective (Illeris, 2003). If the interaction between the user and the website is satisfactory, the individual will develop a positive attitude and be predisposed to use the site (Novak, Hoffman, and Duhachek, 2003). The importance lies in the fact that users search for knowledge and support in SC through social interactions, helping with decision-making (Hajli, 2012).

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This fact is directly related to users' satisfaction, leading to affective reactions that make them feel more comfortable and confident (Chen, Lu, Wang, Zhao, and Li, 2013). Likewise, interactions between users help them develop a feeling of presence in virtual environments, which leads to a greater degree of commitment and a positive affective assessment (Chen, Lu, and Gupta, 2017). Prior studies (e.g., Chen, Lu, and Wang, 2017) show that the social dimension of SC has a positive effect on affective and cognitive assessments.

> **H5.** *The sociability of an SC site has a positive influence on cognitive assessment.*

> **H6.** *The sociability of an SC site has a positive influence on affective assessment.*

According to Illeris (2003), all cognitive learning is related to the emotions that come into play. Accordingly, the two types of learning are interconnected in such a way that utilitarian and emotional factors interact during the learning and assessment process. Along these lines, Lee *et al.* (2012) propose the existence of a relationship between the two variables in an online environment, and recent studies on SC (e.g., Chen, Lu, Wang, and Pan, 2018; Osatuyi and Qin, 2018) have demonstrated that the cognitive dimensions of behavior affect the user's emotions. We therefore propose that the cognitive assessment of learning affects affective assessment.

> **H7.** *The cognitive assessment of learning affects affective assessment.*

When interacting with a website, customers form an attitude on a cognitive and affective level (Lee *et al.*, 2012), which plays a fundamental role in the decision-making process (Kempf, 1999). This relationship has been demonstrated in online contexts, and is supported by the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA) (see Chen, Lu, and Wang, 2017). Accordingly, the attitudes users develop based on their assessments, satisfaction, and feeling of control in regard to the SC site constitute the main determining factors that explain their intention to buy (Vellido, Lisboa, and Meehan, 2000). In virtual contexts, it has been demonstrated that when users experience a satisfactory learning process (cognitive and affective), they show greater intentions to use/visit a website again (Lee and Chen, 2011; Lee *et al.*, 2012). Accordingly, users will assess the utilitarian and affective aspects prior to making a purchase, and when their assessments are positive their intention to buy will increase (Chen, Lu, and Wang, 2017):

> **H8.** *The cognitive assessment of an SC site has a positive influence on the intention to buy.*

> **H9.** *The affective assessment of an SC site has a positive influence on the intention to buy.*

Figure 1 shows the proposed research model.

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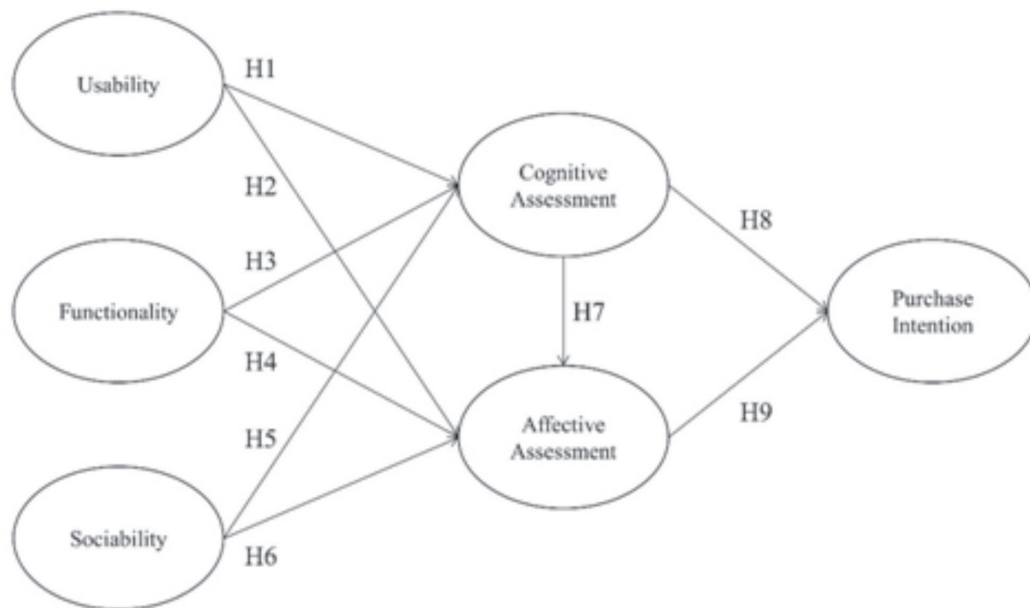Rev. Bras. Gest. Neg., São Paulo, v.22, n.1, p. 123-139, jan/mar. 2020.

Figure 1. Research model.

5 Methodology

The study subjects were regular SC users belonging to the millennial generation (1985-1999) (Molinillo, Liébana-Cabanillas, and Anaya-Sánchez, 2018b). This generation shows a greater predisposition to make online purchases than their predecessors (Lissitsa and Kol, 2016), as well as different attitudes and reactions, which means this group has a broader acceptance of social networks and making purchases using these networks (see Williams, 2018).

The data were obtained from an online survey distributed to SC users via messages on the University of Malaga's internal platforms (in Spain), which included a request for recipients to share the invitation link with other millennial SC users. A non-probability convenience sampling and snowball sampling procedure were used. The questionnaires that did not meet these requirements were eliminated.

The data was collected from April to May of 2018, obtaining a total of 230 questionnaires. The sample is mainly composed of (see Appendix 2) men (56%), users with a university education (97%), whether they have completed their studies or they are ongoing, and students (87.8%). In regard to internet use and SC purchase behavior, over 50% of the participants spend more than 15 hours a week on the internet, approximately 96% regularly make online purchases on a monthly basis, and 99.6% spend at least one hour a day on social networks. The vast majority of the university students in the sample are influenced by the survey method. Nevertheless, it is important to indicate that university students are commonly used when analyzing the millennial population (e.g., Molinillo et al., 2018b; Wang and Herrando, 2019).

The sample participants had to answer the questionnaire considering the SC sites they most often use to make online purchases, keeping in mind the devices they use to access said sites, as this affects the way they perceive web design. The most frequently mentioned websites were Amazon and Aliexpress, with personal computers and tablets being the most widely used devices. In addition to a series of questions to filter the responses (purchases on SC, age, etc.) and other sociodemographic classification questions, a total of 26 questions were asked in regard to the variables in the proposed model, all using a 7-point Likert scale (Appendix 1).

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6 Results

The PLS technique based on structural equation modeling (SEM) was used to compare the theoretical model with the Smart PLS software (version 3.2.7). We opted for this technique due to the minimum demand in terms of the measurement scale and sample distribution, where a smaller sample size was accepted for the application of the analysis. Moreover, PLS has become more popular as a tool for analyzing pathways and factors (Hajli, 2014). The relationships between the model's variables and the loading of the indicators were analyzed using the t-statistic, establishing the level of significance at 5%. The results of these tests allowed us to determine the effects of the latent variables on intention to buy.

6.1 Validity and reliability of the measurement model

The constructs were evaluated with the goal of determining their convergent and discriminant validity. First, the possible existence of multicollinearity was verified. The VIFs were within the recommended limits, meaning that there was no multicollinearity between the variables. Convergent validity tests whether the observed indicators measuring the same construct are highly correlated. To test this, we used Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) values. The minimum levels for each of the criteria that are acceptable for the results are: 0.7 for Cronbach's alpha, 0.6 for CR, and 0.5 for AVE (Fornell and Larcker, 1981) (see Table 2).

Individual reliability was validated for each construct since the value of the Cronbach's alpha is greater than 0.7 in each case. In addition, the CR values are greater than 0.6 and the AVE values are greater than 0.5, thereby validating the composite reliability for each of the constructs. The results obtained in this phase suggest that the study's convergent validity is acceptable.

Table 1
Convergent validity, reliability of the constructs.

Construct	Cronbach's alpha	CR	AVE
Affective assessment (AA)	0,815	0,869	0,574
Cognitive assessment (CA)	0,846	0,897	0,688
Functionality (FU)	0,863	0,897	0,570
Intention to buy (IB)	0,797	0,881	0,711
Sociability (SO)	0,807	0,865	0,524
Usability (US)	0,827	0,881	0,602

Discriminant validity tests to ensure that the cross-correlation between an indicator and a construct is not greater than that of said indicator with its own construct. In order to evaluate this, a correlations matrix was developed between the constructs, the main diagonal of which is composed of the square roots of the AVE (Table 2). The criterion used is based on verifying that the elements in the diagonal are greater than their corresponding rows and columns (Fornell and Larcker, 1981). As observed in this matrix, the square root of the AVE for each construct is greater than the cross-correlation with other constructs.

Similarly, the heterotrait-monotrait (HTMT) ratio of correlations was used (Table 2). This criterion establishes that the study's discriminant validity can be ensured for values less than 0.85, since the relationships between the indicators of any one construct are greater than the relationships between the indicators that measure different constructs (Henseler, Ringle, and Sarstedt, 2015).

Table 2
Discriminant validity: Fornell and Larcker criterion (below the main diagonal), HTMT (above the main diagonal).

Construct	AA	CA	FU	IB	SO	US
Affective assessment (AA)	**0,758**	0,724	0,430	0,643	0,652	0,334
Cognitive assessment (CA)	0,638	**0,830**	0,369	0,787	0,541	0,258
Functionality (FU)	0,358	0,330	**0,755**	0,259	0,352	0,410
Intention to buy (IB)	0,537	0,656	0,235	**0,843**	0,451	0,215
Sociability (SO)	0,545	0,445	0,298	0,367	**0,724**	0,236
Usability (US)	0,273	0,225	0,328	0,121	0,030	**0,776**

Lastly, loading and cross-loading was included (Table 3) in order to conclude the evaluation of discriminant validity, which is acceptable since all of the indicators' loadings are greater for the construct with which it is associated than those of the same indicator over different constructs.

Therefore, the model's convergent and discriminant validity is acceptable.

Table 3
Discriminant validity, loading, and cross-loading.

	EA	EC	FU	IC	SO	US
AA1	**0,840**	0,462	0,338	0,448	0,528	0,251
AA2	**0,821**	0,649	0,324	0,512	0,549	0,239
AA3	**0,548**	0,219	0,142	0,245	0,240	0,123
AA4	**0,779**	0,492	0,267	0,331	0,395	0,154
AA5	**0,763**	0,482	0,233	0,427	0,256	0,235
CA1	0,551	**0,927**	0,243	0,677	0,342	0,179
CA2	0,586	**0,799**	0,354	0,489	0,433	0,198
CA3	0,353	**0,693**	0,207	0,379	0,366	0,092
CA4	0,590	**0,880**	0,281	0,591	0,349	0,254
FU1	0,304	0,319	**0,930**	0,253	0,249	0,274
FU2	0,275	0,1757	**0,685**	0,106	0,172	0,295
FU3	0,233	0,160	**0,658**	0,034	0,106	0,295
FU4	0,318	0,316	**0,944**	0,240	0,272	0,268
FU5	0,221	0,127	**0,395**	0,062	0,090	0,270
FU6	0,304	0,200	**0,587**	0,084	0,344	0,174
FU7	0,274	0,335	**0,913**	0,296	0,279	0,250
IB1	0,452	0,555	0,120	**0,839**	0,428	-0,042
IB2	0,446	0,547	0,222	**0,847**	0,286	0,156
IB3	0,459	0,556	0,253	**0,844**	0,214	0,192
SO1	0,404	0,438	0,282	0,319	**0,566**	0,129
SO2	0,375	0,314	0,183	0,309	**0,777**	-0,002
SO3	0,439	0,223	0,153	0,133	**0,693**	-0,040
SO4	0,424	0,285	0,189	0,269	**0,862**	-0,115
SO5	0,252	0,351	0,273	0,219	**0,529**	0,259
SO6	0,414	0,272	0,191	0,299	**0,848**	-0,085
US1	0,227	0,192	0,226	0,088	0,030	**0,877**
US2	0,161	0,147	0,179	0,059	0,009	**0,883**
US3	0,255	0,110	0,248	0,043	0,111	**0,794**
US4	0,181	0,227	0,344	0,201	0,021	**0,633**
US5	0,211	0,175	0,240	0,058	-0,058	**0,654**

6.2 Evaluation of the structural model

The PLS algorithm allows us to obtain the amount of variance of the dependent latent variables, which are explained by the constructs that predict them (). The results of this analysis (Table 4) show that all of the values are greater than 0.1 (Falk and Miller, 1992), a criterion used as a determinant of the power and quality of the construct.

Table 4
Values for the latent variables.

Latent variable	R²	Adjusted R²
Affective assessment (AA)	0.517	0.511
Cognitive assessment (CA)	0.263	0.254
Intention to buy (IB)	0.453	0.449

In addition, the bootstrapping resampling statistical technique (5,000 subsamples) was used in order to analyze the significance of the structural relationships. Table 5 presents the results, showing that all of the relationships are significant (p-values < 0.05). This therefore demonstrates that the proposed model can be trusted. However, considering the standardized coefficients and the nature of the study, we can conclude that all of the relationships with associated STDC values less than 0.33 are weak (Chin, 1998).

Table 5
Hypothesis comparison.

Hypothesis	STDC	t value	P-value	Hypothesis
H1: US → EC	0,161	2,192	0,028*	Accepted
H2: US → EA	0,234	4,283	0,000***	Accepted
H3: FU → EC	0,160	2,628	0,009**	Accepted
H4: FU → EA	0,072	2,597	0,009**	Accepted
H5: SO → EC	0,392	6,629	0,000***	Accepted
H6: SO → EA	0,517	9,134	0,000***	Accepted
H7: EC → EA	0,451	5,669	0,000***	Accepted
H8: EC → IC	0,618	11,121	0,000***	Accepted
H9: EA → IC	0,199	2,308	0,021*	Accepted

Note: STDC = Standardized coefficient.
* p < 0.001 ** p < 0.01 *** p < 0.05

Finally, we used the blindfolding technique to evaluate the predictive capacity. The results of the analysis (Table 6) show that the values () are greater than 0, a criterion that indicates that the proposed model has predictive validity in regard to the intention to buy.

Table 6
Q² values for the latent variables.

Constructo	SSO	SSE	Q² (=1-SSE/SSO)
Affective assessment (AA)	1150	852,98	0,258
Cognitive assessment (CA)	920	769,18	0,164
Functionality (FU)	1610	1610	
Intention to buy (IB)	690	483,10	0,300
Sociability (SO)	1380	1380	
Usability (US)	1150	1150	

7 Conclusions

7.1 Theoretical implications

Although prior studies have examined the effects of web design on intention to buy (e.g., Chen, Lu, and Wang, 2017; Huang and Benyoucef, 2017), the relationships between the variables related to web design and the cognitive and affective components of social learning in SC have not been specifically addressed, nor the way in which, together, they influence the intention to buy on these platforms. This study contributes to the theory in the field of SC by proposing an integrating model, which adapts to the new formats and interfaces of existing SC sites, all within the context of millennial consumers.

This study allows us to establish a series of theoretical implications. Firstly, key aspects of web design, apparently associated with the utilitarian aspect of attitude (cognitive assessment), also have a noticeable influence on users' affective assessments. More specifically, usability has a positive influence on affective assessment, fully backing the idea that usability takes into account aspects such as user satisfaction (Venkatesh *et al.*, 2014). On the other hand, it shows how aspects commonly associated with the emotional

component could affect cognitive assessment, such as sociability.

Secondly, the consumer's internal psychological aspects, based on knowledge, expectations, or emotional motivations, play a decisive role in determining the purchase decision. By assuming that affective assessment is determined by cognitive assessment, many studies have focused on the latter, without fully covering the entire field of social learning. The results indicate that there is a positive relationship between the two kinds of assessments and intention to buy. Consequently, despite the relevance of the affective dimension, cognitive assessment has been shown to have a greater impact on intention to buy, in accordance with the analyzed literature (Chen, Lu, and Wang, 2017).

Lastly, the study demonstrates the importance of the social component in the generation of transactions, contributing to the exchange of information and favoring a more enriched decision-making process based on collective learning. This component helps reduce uncertainty and creates a feeling of presence in the digital environment. This idea is consistent with studies conducted by other authors (e.g., Illeris, 2003) in the field of e-commerce.

7.2 Practical implications

This study presents a series of implications for professionals and companies to keep in mind. Firstly, they should develop simple, esthetic interfaces that allow for intuitive navigability that is easy to learn and remember. This will consequently reduce uncertainty and facilitate the efficient development of actions. For example, we recommend the use of pleasant color compositions with simple formats, which respect the legibility of the text and easily located information. Additionally, they should avoid duplicate content that does not contribute any added value. Accordingly, the principles of Responsive Design favor efficient multiplatform adaptability. This focus suggests that the design and development

of the platform should respond accordingly to the user's behavior and environment, allowing for a more efficient navigability from any device (Yang and Li, 2016).

Secondly, they must provide clear, fast access to information, allowing users to efficiently achieve their objectives. Possible actions include displaying a clear, concise description of each product, the availability of search functions, the incorporation of fast access to contact information, the transparent publication of reviews and recommendations that favor social learning, and the coherent classification of information, etc.

Thirdly, users should be allowed to exchange information about products and/or experiences, favoring conversation as the main generator of collective knowledge to establish affective links. To this end, companies could incorporate forums or internal communities in their sites or establish chats. Similarly, user participation should be encouraged with the objective of obtaining information to improve the actions that are carried out or in order to develop new actions, implicating users in the processes of product assessment and proposing improvements.

Lastly, it is recommended that error prevention measures be established in order to reduce users' uncertainty and favor their sense of control. Possible actions include displaying messages indicating the type of error that has been produced, or including limitations that prevent certain actions from being carried out, etc.

7.3 Limitations and future research

This study presents a series of limitations. Firstly, the survey participants were all recruited from the university community, resulting in a sample with a very homogenous profile, which is not fully representative of the profile of millennial consumers (various levels of studies, wider age range, etc.) (CaixaBank Research, 2018). Although university students may represent a large percentage of the millennial population, it is necessary to include users that

are not university students in order to be able to generalize the results to the entire generation. Additionally, future studies could evaluate the different potentials of other age groups (e.g., comparison with generations Z and X), in other geographic and cultural environments, etc. Secondly, survey participants could consider different purchase experiences if they are offered the freedom to choose the website and device. Future studies could design stimuli with the goal of analyzing the behaviors in response to a certain experience as well as comparing the results between different stimuli. Finally, the model does not take into account other explanatory factors, such as service quality, past experiences, and security, etc. Likewise, the theoretical model could be reformulated to consider the assessment as a second-order variable with both dimensions, cognitive and affective.

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Appendices

Appendix 1 – Measurement of variables.

Construct	Items	Authors
Usability	US1 Use of the SC site must be easy to learn. US2 The SC site must be able to be used efficiently. US3 Use of the SC site must be easy to remember. US4 The SC site must avoid errors, however if there are any errors they must be minor. US5 Use of the SC site must be satisfactory for the user.	Rosenzweig (2015)
Functionality	FU1 The SC site must be easy to use. FU2 The information on the SC site must be clearly displayed. FU3 The information on the SC site must be classified in a logical way. FU4 The SC site must provide search functions. FU5 The SC site design must be esthetic. FU6 The SC site should contain customizable characteristics. FU7 The SC site must help consumers efficiently complete their purchases.	Huang and Benyoucef (2017)
Sociability	SO1 The SC site should build online communities to allow customers to receive community support in real time. SO2 The SC site should provide social recommendations. SO3 The SC site must allow customers to connect with the people they like. SO4 The SC site should allow customers to respond to the content published by other customers. SO5 The SC site should allow other customers to share their experiences and knowledge on the website. SO6 The SC site should involve customers in the product design process, development, and assessment.	Huang and Benyoucef (2017)
Cognitive assessment	EC1 The website was effective for achieving the objective of their visit. EC2 The website was convenient for achieving the objective of their visit. EC3 They felt comfortable using the website in order to achieve the objective of their visit. EC4 The website was useful for achieving the objective of their visit.	Chen, Lu, and Wang (2017)
Affective assessment	Their general experience with the website was: EA1 Happy. EA2 Good. EA3 Relaxed. EA4 Pleasant. EA5 Satisfactory.	Chen, Lu and Wang (2017)
Intention to buy	IC1 They will buy this product or service and consider this website as their first option. IC2 They have the intention to buy this product or service on this website. IC3 They predict that they will buy this product or service on this website.	Chen, Lu and Wang (2017)

Appendix 2 – Sociodemographic information of the participants.

Variable		Frequency (n = 230)	%
Sex	Man	129	56.1
	Woman	101	43.9
Age	19-22	107	46.5
	23-25	49	21.3
	26-28	38	16.5
	29-31	36	15.7
Education	Secondary education	4	1.7
	University education (undergraduate)	223	97.0
	University education (graduate)	3	1.3
Primary occupation	Student	202	87.8
	Worker	28	12.2

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Contribution of each author

Contribution	Rafael Anaya-Sánchez	Juan Marcos Castro-Bonaño	Eloy González-Badía
1. Definition of research problem	√	√	√
2. Development of hypotheses or research questions (empirical studies)	√		√
3. Development of theoretical propositions (theoretical work)			
4. Theoretical foundation/ Literature review	√		√
5. Definition of methodological procedures	√	√	√
6. Data collection	√	√	√
7. Statistical analysis		√	√
8. Analysis and interpretation of data	√	√	√
9. Critical revision of the manuscript	√	√	
10. Manuscript writing	√	√	√
11. Other (please specify which)			