How do innovation and sustainability contribute to generate retail equity? Evidence from Spanish retailing

Purpose - In the current dynamic and competitive environment in which retail companies operate, store equity is a differentiating factor. In view of the scarce research found regarding the links between the variables traditionally related to brand equity (store awareness, store image, store perceived quality and store loyalty), and innovation, sustainability, and the global retail equity, this study aims to examine these links in-depth.

Design/methodology/approach – For a sample of 510 customers of grocery retail establishments, and with the help of a structured questionnaire, the relationships between the variables defined in this research were examined using a structural equations model.

Findings - The authors find evidence in favor of the positive influence of innovation and sustainability on the variables related to brand equity. Likewise, store loyalty to the establishment is presented as key variable in the construction of global brand equity.

Research limitations/implications - This study shows that innovation and sustainability have a significant impact on the variables traditionally linked with brand equity.

Practical implications – This research shows that new business models are created through more innovative and sustainable businesses. In this sense, the managers of retail stores should direct their efforts towards actions aimed at implementing innovation, as well as provide evidence of the sustainability of the store's activities, with the purpose of improving the perception that consumers have of the store.

Originality/value - The results of this research support the role of store loyalty as key element of brand equity. Also, to the authors' knowledge, this is the first study that addresses the relationship that innovation and sustainability have with the variables linked to store equity.

Keywords Innovation, Sustainability, Loyalty, Brand image, Grocery retail, Store equity

1. Introduction

The interest generated in brand equity in the last two decades, as well as the vast array of contributions found in the literature, are indicative of its complexity when it comes to both evaluating this variable (Huang et al., 2016; Grewal et al., 2017) and attempting to advance in the study of its nature and scope. However, the idea that the perception of the consumer and the involvement of the companies are decisive (Farquhar, 1989; Myers, 2003; Pappu and Quester, 2016) seems generally accepted. Indeed, in today's marketplace, consumers are assumed to actively participate in brand identity creation (Vallaster and von Wallapach, 2013; Baalbaki and Guzmán, 2016). In addition, in recent years its conception has led to new approaches, with the subsequent emergence of new ways of addressing the concept in the field of retail, where store equity is a term that is beginning to be used (Arnett et al., 2003; Pappu and Quester, 2006; Gil-Saura et al., 2017).

Recently, the marketing literature has shown that innovation and sustainability are considered two key elements in the development of competitive advantage for organizations (Gonzalez-Lafaysse and Lapassouse-Madrid, 2016; Marcon et al., 2017; Ruiz-Molina et al., 2017). In this sense, a new line of research has begun to take prominence, i.e. the one relating these key elements to the variables on which brand equity is traditionally built: brand awareness, brand image, perceived quality and loyalty (Kumar, 2014; Lavorata, 2014; Gonzalez-Lafaysse and Lapassouse-Madrid, 2016; Pappu and Quester, 2016; Ruiz-Molina et al., 2017). The role of these elements in the creation of brand equity for companies has been highlighted in a number of studies as factors of paramount importance for their survival and progress, as well as for the development of competitive advantage. However, explaining store equity is a question that still remains unanswered (Huang et al., 2016; Pappu and Quester, 2016; Gil-Saura et al., 2017). In fact, research on the relationship between innovation and sustainability with variables traditionally linked to brand equity is still in its infancy (Pappu and Quester, 2016; Marcon et al., 2017; Ruiz-Molina et al., 2017). This scenario is compounded in the retail context by bringing the concept of brand equity to the store environment. To date, this has shown varying results, sometimes conflicting, pointing to the need to shed light on this line of research (Pantano and Timmermans, 2014; Krom, 2015; Huang et al., 2016; Pappu and Quester, 2016).

In line with the above, this research aims at addressing the concept of store equity, identifying its content and defining its links with variables such as innovation and sustainability, whose contribution can be of remarkable interest. In this sense, we aim at examining the effects of innovation and sustainability in some of the key variables identified as elements of brand equity (store awareness, image and perceived quality). Moreover, the present study aims at analyzing the relations between the variables traditionally linked to brand equity and their effects on loyalty toward the establishment. Finally, it attempts to provide evidence about the sense of the relationship between store loyalty and global store equity.

The usefulness of this research stems from the benefits that a greater knowledge on the consumer perceptions of retailer's sustainability and innovation may provide to the scientific community and to practitioners in the sector of commercial distribution. We aim to analyse if retailers that use different types of innovation, combined with the implementation of sustainable practices, benefit from a differentiated Store image, greater levels of Store awareness and Store perceived quality. In this context, an analysis of the ultimate influence of these factors on Store equity may be suitable (Gil-Saura et al., 2017) in reply to the calls for research that highlight the need to progress in these areas of prioritized research (Pantano and Timmermans, 2014; Grewal et al., 2017; Kumar et al., 2017). All in all, an increased knowledge about the effects that sustainable practices and innovation may exert on store equity through brand image, brand awareness, and perceived quality, is a key element to orient the strategic management of retail store chains.

This study is structured as follows. After the introduction, Section 2 identifies the theoretical framework that will be used as the background of this research. In Section 3, the methodology used for the subsequent development of the fieldwork is explained. In Section 4, the results of this empirical study are discussed, and the formulated hypotheses are contrasted. Finally, in Section 5, the conclusions derived from the analysis are presented. In Section 6, some implications for the management in the retail industry are discussed. Section 7 presents the limitations of this study as well as future research lines.

2. Literature review and hypotheses

Brand equity, innovation and sustainability have been usually addressed independently in the literature. Notwithstanding, recent research points out the existence of connections between these three variables that may facilitate the development of sustainable advantages for organizations. In this sense, some studies identify innovation and sustainability as antecedents of the variables related to brand equity (Lavorata, 2014; Baalbaki and Guzman, 2016; Gonzalez-Lafaysse y Lapassouse-Madrid, 2016; Ruiz-Molina et al., 2017; Arrigo, 2018; Biedenbach et al., 2018; Carlson et al., 2018; Noh and Johnson, 2019). Brand equity is understood as "*a set of brand assets and liabilities linked to a brand that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers*" (Aaker, 1991:15). The study of brand equity, be it considered as a multidimensional construct (Arnett et al., 2010) or as global brand equity, has been addressed in the context of retailing, among other fields of study (Gil-Saura et al., 2013; Gil-Saura et al., 2016; Gil-Saura et al., 2017).

In retailing, the study of store equity, that is, the study of the role that the store plays as a brand, and different from the brands that the retailer may offer (Jinfeng and Zhilong, 2009), has aroused recent academic interest (Pappu and Quester, 2016; Gil-Saura et al., 2017). One of the studies that has attracted special attention in this topic is that by Arnett et al. (2003). The authors show that store equity is closely linked to the information that the name of the retailer provides to consumers. In this sense, brand equity can be a source of competitive advantage for many companies of the commercial distribution, the result being the confluence of different variables. Among these variables, brand awareness, brand image, perceived quality, and loyalty towards the commercial establishment are those that have been referenced with greater frequency in the marketing literature, from the perspective of the consumer (Aaker, 1991; Yoo et al., 2000; Arnett et al., 2003; Beristain and Zorrilla, 2011; Gil-Saura et al., 2013; Gil-Saura et al., 2017; Grewal et al., 2017).

Brand awareness is considered the first step towards the creation of brand equity (Aaker, 1991) because of its close link with the strength of the brand in the memory of consumers (Aaker, 1991, Keller, 1993). It is formed by brand recognition, i.e. the consumers' ability to identify the stimuli that had been previously perceived; and by brand recall, that is, the ability to mentally recover previously stored information without the presence of other stimuli (Keller, 1993). Brand image is defined as "*the sum of beliefs, attitudes, stereotypes, ideas, relevant behaviors or impressions that a person holds with respect to an object, person or organisation*" (Belanger et al., 2002:218). This conceptualization is a consequence of the impact caused by the set of associations linked to the brand (Biel, 1992, Keller, 2009). Depending on whether these associations are positive or negative, the image of the brand will be reinforced either positively or negatively. Perceived quality is created from the global evaluation of a consumer about a service or product, after experimenting with it and after comparing it with other products or services (Aaker, 1991). Finally, the interest aroused in loyalty to the commercial establishment is due to the fact that it is considered a key element in the growth of companies, with the ability to maintain customers that are loyal to the company and its brand (Reichheld, 2003). Thus, loyalty is much more than the mere repetition of purchase. A customer can repeatedly buy from the same supplier without being loyal to that company. In contrast, a loyal customer may not be a frequent buyer (Reichheld, 2003).

On the other hand, the existing relationship between innovation and sustainability, and brand equity has attracted recent interest among researchers (Gonzalez-Lafaysse and Lapassouse-Madrid, 2016; Marcon et al., 2017; Ruiz-Molina et al., 2017). This interest is motivated by the fact that these variables can generate competitive advantage for organizations.

In relation to innovation, the literature review evidences that it is a masterpiece in the restructuring of the retail sector (Dawson, 2005; Helm et al., 2018), and is pointed out as a cornerstone for the economic and competitive development of the business environment (Clark, 2010; Berthon et al., 2004; Gonzalez-Lafaysse and Lapassouse-Madrid, 2016; Marcon et al., 2017; Grewal et al., 2017; Ruiz-Molina et al., 2017). Nowadays, organisations tend to implement innovative practices (e.g. design of new products, new services, new ways of relating to the consumer) in view of their potential to allow the access to new segments of the market, their contribution to economic growth, increased competitiveness and firm survival on a long-term basis.

The study of innovation in the context of retailing shows its most dynamic expansion in the decade of the nineties, although special attention has been paid to this topic in the last years. This interest is a consequence of the evidence about the effect that innovation has on other variables of long tradition in research (Gil-Saura et al., 2014). In this sense, innovation in retailing, due to its novelty and importance to both practitioners and academics, emerges as a concept of main interest. In the context of retail distribution, four types of innovation are mainly identified, based on their technological vs. non-technological nature (Rowley et al., 2011). On the one hand, technological innovation includes product innovation and process innovation (McKee, 1992; García and Calantone, 2001; Henard and Dacin, 2010). Product innovation refers to those improvements or variations in existing products, or the introduction of new products that had not been commercialized to date. Process innovation, in turn, consists of the implementation or adoption of a production method that may include changes in terms of equipment, human resources or in working methods. On the other hand, non-technological innovations contain organizational innovation, innovation in marketing and relational innovation. Organizational innovation involves the formulation of new strategies and organizational forms. Marketing innovation is defined as the alterations in the design, packaging or positioning of products, among other variables. Finally, relational innovation is linked to the improvement of trust, loyalty and the quality of relationships between the parties involved. The present research focuses on product innovation, marketing innovation and relational innovation, since these are the most visible types of innovation from the consumer perspective and the most cited innovation dimensions by previous research (Dupuis, 2002; Musso, 2010; Lin, 2015). In contrast, process innovation and organizational innovation are related to internal aspects and not being easily evaluated by non-members of the organization.

Similarly to innovation, the interest aroused by the study of sustainable development in the area of marketing, is a consequence of the positive effects that the sustainable practices implemented by companies may have on the development of competitive advantages. Some investigations have found support to the notion that sustainable development practices carried out by retailers can attract consumers to their stores (Marcon et al., 2017). In this way, it is argued that sustainable practices can be a potential source of competitive advantages for organisations (Oppewal et al., 2006), and key factor for their development, survival and growth (Lavorata, 2014; Marcon et al., 2017). Indeed, sustainability has been appointed as an important part of the brand identity of many products and brands that consumers purchase on a daily basis (Baalbaki and Guzmán, 2016). From the point of view of marketing, three main components are identified, based on the theoretical model of the "Triple Bottom Line" formulated by Elkington (2004): environmental, social and economic sustainability. The environmental dimension is explained by the actions developed by companies to create products and services without causing harm to the environment. The social dimension is associated with the ability of organizations to manage their businesses, improving the quality of life of society and reinforcing relations with the different interest groups that make up their business environment. Finally, the economic dimension is crucial because it is considered a key requirement for the survival of companies. In this vein, some studies on sustainability in retailing go beyond the analysis of this variable from an economic perspective, to address also its social and environmental dimensions (Tang et al., 2016).

Although the literature indicates that innovation, sustainability and brand equity have been studied extensively, more recent studies point to the existence of connections between these three variables that can facilitate the development of competitive advantage for organizations. In this sense, some studies identify innovation and sustainability as antecedents of the variables related to brand equity (Lavorata, 2014; Gonzalez-Lafaysse and Lapassouse-Madrid, 2016; Marcon et al., 2017; Ruiz-Molina et al. al., 2017).

Although innovation and brand equity have been studied in general terms as two independent variables, where each of them has effects on the competitiveness of companies, some recent contributions state that both variables are closely linked (Nedergaard and Gyrd-Jones, 2013; Botschen and Wegerer, 2017; Ruiz-Molina et al., 2017; Carlson et al., 2018).

Many researchers have attempted to analyze the links between innovation and variables related to brand equity through what they call "brand innovation" (Chien, 2013). This concept becomes the most important issue for brand management during the era of the knowledge-based economy. From the perspective of the consumer, research on the relationship between innovation and brand equity is in a state of incipient development; thus, the meaning and intensity of this relationship is yet to be confirmed, given the limited number of studies carried out and the results obtained, sometimes in opposition depending on the perspective from which they are applied. However, in retailing there are some conceptual and empirical evidences of possible links between innovation and the variables traditionally associated with brand equity as identified by Aaker (1991), i.e., brand awareness, brand image, perceived quality and loyalty. In particular, the literature highlights the link between innovation and brand awareness (Despa, 2014), brand image (Liu et al., 2014; Huang et al., 2016) and perceived quality (Henard and Dacin, 2010; Kunz et al., 2011). In retailing, the study of Miragaia et al. (2015) has provided support to the positive relation between innovation and Store awareness, as well as an increase in the credibility and loyalty of innovative retailers. Moreover, the contribution of innovation to enhance store image has been argued in previous research (Shiau, 2014; Huang et al., 2016). Finalmente, The efforts of companies to innovate are highly appreciated by consumers, who perceive the quality of their brands as superior (Pappu y Quester, 2016). Based on these findings, we propose our first hypothesis:

H1: The customer perceptions of the retailer's innovation have a positive effect on store awareness (H1a), store image (H1b) and store perceived quality (H1c) towards the store.

Previous research have highlighted the contribution of sustainability to brand equity creation (Baalbaki and Guzman, 2016; Arrigo, 2018; Noh and Johnson, 2019). With regard to the links between sustainability and the variables traditionally related to brand equity, it is true that the proposal is rather recent, with the subsequent general lack of studies that supports this link to date. Even so, there is some evidence of a conceptual and / or empirical nature that confirms the positive and significant relationship of sustainability with brand awareness (Coca et al., 2013), brand image (Kumar, 2014; Lavorata, 2014; Gonzalez-Lafaysse and Lapassouse-Madrid, 2016), perceived quality (Amran et al., 2014) or loyalty (Kumar, 2014). In this way, Coca et al. (2013) point out that the sustainable practices developed by companies can lead to a greater knowledge of the brand by the consumer. Similarly, in a qualitative study performed by Baalbaki and Guzmán (2016), where participants were asked about the first words that come to their minds when they think of a brand important for them, sustainability emerged as one of the most relevant topics. This result allows the authors to conclude that consumers are more aware of and loyal to brands that are environmentally safe/responsible, sustainable and healthy. Moreover, Amran et al. (2014) indicate that sustainability is an ally in the creation of quality for brands. All in all, it is widely assumed that the sustainable practices implemented by the organizations can contribute to modify favorably the image that consumers have of them (Gonzalez-Lafaysse and Lapassouse-Madrid, 2016). Thus, we postulate our second hypothesis:

H2: Customer perceptions of the retailer's sustainability have a positive effect on Store awareness (H2a), Store image (H2b) and Store perceived quality (H2c) towards the store.

On the other hand, the relations between the variables linked to brand equity from the point of view of the consumer have also aroused preferential interest among researchers (Grewal et al., 2003). In this sense, some studies aim at finding empirical evidences about the relation between awareness and image (Porter and Claycomb, 1997; Jara and Cliquet, 2012; Ko et al., 2013). Notwithstanding, to the best of our knowledge, this relation has not been tackled in depth in the context of retailing.

Ko et al. (2013) state that companies that implement sustainable marketing actions, and whose customers are able to perceive them in this line, will acquire a store image perceived by consumers more positive than those organizations that do not implement such measures. In other words, the increased consumer awareness about the sustainability of a store will involve better perceptions about the store.

Moreover, Barreda et al. (2015) argue that a high level of knowledge of a brand contributes to the development of other factors such as brand image. In other words, brand awareness isa key element in building the brand image that customers elaborate in their minds. In a similar vein, Bilgin (2018) finds empirical evidence in favor of the existence of a relation between brand awareness and image. In view of the previous evidence, we posit:

H3: Store awareness has a positive effect on store image.

In the literature it has been pointed out that the variables traditionally linked to brand equity are interrelated (e.g. Yoo et al., 2000; Buil et al., 2013; Manthiou et al., 2014). While some researchers propose associative relationships among brand equity dimensions (e.g. Yoo et al., 2000; Pappu et al., 2005; 2006; Tong and Hawley, 2009), other studies posit causal relations among them (e.g., Bravo et al., 2007; Buil et al., 2013; Manthiou et al., 2014). Based on the Theory of Reasoned Action (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980), some works propose causal relations between the variables traditionally linked to brand equity, assuming that attitudes and subjective norms about a product or service influence intentions, which in turn affect consumer behavior (e.g. Buil et al., 2013). Under this approach, brand equity creation is conceived as a consumer learning process: consumers' awareness of the brand leads to attitudes (e.g., perceived quality and brand image/associations), which in turn influence attitudinal brand loyalty (Gordon et al., 1993). Likewise, according to Yoo et al. (2000: 204), "perceived quality and brand associations might affect brand equity by influencing brand loyalty first. […] loyalty is a more holistic construct, closer to brand equity, whereas quality and associations are specific evaluative constructs". Thus, high levels of perceived quality and positive associations can enhance brand loyalty (Keller, 1993; Keller and Lehmann, 2003; Pappu et al., 2005; Tartaglione et al., 2019).

In particular, Martenson (2007) argues that a favorable brand image promotes consumer loyalty and positive word of mouth. However, Bloemer and de Ruyter (1998) were unable to find a direct effect of store image on store loyalty. More recently, in the context of supermarkets in Spain, Beristain and Zorrilla (2011) argue the existence of a positive relation between store image and brand loyalty.

Moreover, it has been pointed out that brands perceived to be high-quality add value to consumers, which encourage purchases and loyalty toward a brand (Low and Lamb, 2000). Perceptions of high quality lead to brand loyalty because it is the basis of consumer satisfaction (Buil *et al.*, 2013). All in all, we posit the following hypotheses:

H4a: Store image has a positive effect on store loyalty.

H4b: Store perceived quality has a positive effect on store loyalty.

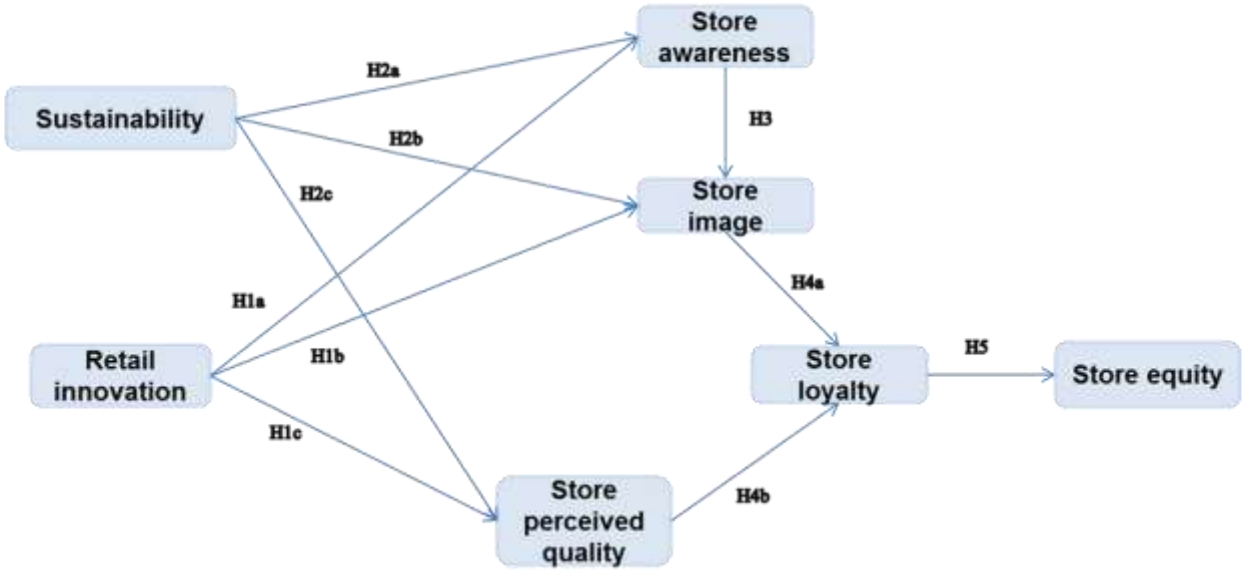
Finally, some researchers point out that loyalty is a key factor for the creation of brand equity (Yoo et al., 2000; Atilgan et al., 2005; Mohd Yasin et al., 2007) and a strategic asset that, if managed properly, can provide important advantages for organizations (Buil et al., 2010) and better commercial results, such as reduced sales costs, the possibility to set a price higherthan competitors, increased market share and higher commercial influence (Aaker, 1996; Atilgan et al., 2005; Bravo et al., 2007; Mohd Yasin et al., 2007). Moreover, it facilitates entering new markets, reducing costs of promotion, attracting new customers and reducing the time required to respond to competitive threats (Šeric and Gil-Saura, 2011). Customer brand loyalty involves that consumers purchase the products of such brand on a regular basis and resist to change to another brand (Yoo et al., 2000), strengthening the bond between brand and consumer and showing favorable responses to the brand actions (Villarejo-Ramos, 2002). Thus, the higher the customer loyalty toward the brand, the higher the brand equity (Yoo et al., 2000).

In the retailing industry, customer loyalty toward the store is a key factor because of its ability to reduce the impact of persuasive marketing actions implemented by competitors (Aaker, 1991), being a cornerstone in building brand equity (Yoo et al., 2000; Arnett et al., 2003):

H5: Store loyalty has a positive effect on store equity.

Considering all this, Figure 1 shows our research model:

Figure 1 Proposed research model



3. Methodology

To achieve the proposed objective, a quantitative study is proposed using a structured *ad-hoc* questionnaire with closed questions, in which the consumer should indicate their degree of agreement or disagreement with a series of statements.

The items related to the different variables analyzed have been extracted and adapted from various scales used in the marketing literature, which have a proven content validity, and which have been adapted to the characteristics of the context and objectives of this study (see Appendix). Specifically, the items to measure innovation in the stores have been taken from Lin (2015); for the evaluation of the perception that consumers have regarding sustainability policies implemented by retailers, the items of the scale proposed by Lavorata (2014) have been used. Besides, the measurement of the variables related to brand equity was made by using the scales adapted from Yoo et al. (2000), and Netemeyer et al. (2004) for awareness; Yoo et al. (2000)'s scale was used to evaluate brand image; Dabholkar et al. (1996) and Yoo et al. (2000), to measure perceived quality; and, Yoo et al. (2000), to measure loyalty. Finally, the global brand equity was evaluated using the scale proposed by Yoo and Donthu (2001). In all cases, the items were measured by means of a 7-point Likert scale, from 1 (totally disagree) to 7 (totally agree).

To test the aforementioned hypotheses, a structured personal questionnaire was developed. The data collection process was carried out during the months of April and May 2017 in the province of Valencia, following a non-probabilistic quota sampling procedure in terms of customer gender and age is used to guarantee the representativeness of the sample of consumers in terms of the main sociodemographic variables. The store chains have been retained based on their assortment and their positioning in the Spanish market, within the sector of grocery retailing, and taking into account the commercial formats of hypermarkets, supermarkets and discount stores. In particular, customers were intercepted at the store exit of the two main supermarket chains, the two main discount chains and the main hypermarket brand in Spain. The same number of consumers have been interviewed for each retail format (i.e. 170 valid surveys from hypermarkets' customers, 170 from supermarkets and 170 from discounts). Finally, 510 valid questionnaires were collected (Table 1), out of which 59.6% correspond to female respondents and 40.4% to male respondents. In addition, the age range with the highest percentage in the sample (26.1%) is that of participants between 36 and 45 years old.

Table 1. Sample distribution: sociodemographic variables

	Total		Hypermarket		Supermarket		Discount store	
	N	%	N	%	N	%	N	%
GENDER								
Male	206	40.4	68	40.0	67	39.4	71	41.8
Female	304	59.6	102	60.0	103	60.6	99	58.2
AGE								
18-25 years old	36	7.1	16	9.4	9	5.3	11	6.5
26-35 years old	88	17.3	34	20.0	20	11.8	34	20.0
36-45 years old	133	26.1	35	20.6	63	37.1	35	20.6
46-55 years old	113	22.2	18	10.6	50	29.4	45	26.5
56-65 years old	108	21.2	50	29.4	24	14.1	34	20.0
Over 65 years old	32	6.3	17	10.0	4	2.4	11	6.5
EDUCATION								
No schooling	40	7.8	20	11.8	9	5.3	11	6.5
Primary education	84	16.5	41	24.1	22	12.9	21	12.4
Secondary education	148	29.0	41	24.1	46	27.1	61	35.9
University studies	238	46.7	68	40.0	93	54.7	77	45.3
OCCUPATION								
Employee	282	55.3	90	52.9	102	60.0	90	52.9
Employer/Self-employed	63	12.4	16	9.4	24	14.1	23	13.5
Pensioner	58	11.4	39	22.9	6	3.5	13	7.6
Unemployed	40	7.8	6	3.5	16	9.4	18	10.6
Housewife	37	7.3	16	9.4	12	7.1	9	5.3
Student	30	5.8	3	1.8	10	5.9	17	10.0
TOTAL	**510**		**170**		**170**		**170**	

The analysis of the data gathered was carried out in two stages. First, the measuring instrument was validated; and second, the structural model was estimated. Both analyses were performed using the partial least square regression (PLS) technique and the software used was SmartPLS (version 3.0). It is a technique that has been recently welcomed among academics and researchers (Henseler et al., 2016). The PLS-SEM analysis is a nonparametric statistical procedure, in which it is not necessary for the data to be distributed according to a normal distribution (Hair et al., 2017b, 2019).

4. Results

Before examining the validity and reliability of the measuring instrument, we performed an Exploratory Factor Analysis. In this way, through a Principal Components Analysis, with varimax rotation we obtained the grouping of the items used to measure the different variables in factors that allow us to define the set of observed variables. From the results of this analysis we observed that innovation is a construct formed by three factors - product innovation, innovation in marketing and relational innovation - that jointly explain 68.93% of the total variance and that had already been also identified by Lin (2015). Likewise, the results obtained also allow us to confirm that sustainability is formed by three dimensions, namely: economic sustainability, social sustainability and environmental sustainability, which, together, explain 72.91% of the total variance.

Next, we used the PLS-SEM technique, calculating a PLS algorithm with a parameter of 300 maximum interactions and a path weighting scheme. In order to maintain the highest number of items of the scales used (Hair et al., 2011), and given that the psychometric properties of these scales have been previously validated, we decided to eliminate the items with factor loadings lower than 0.6, as suggested by Bagozzi and Yi (1988). Thus, we chose to eliminate the IM3, IM4, IM5, IM7 and IM9 indicators, since the item loading were even lower than 0.4, that is the cut-off recommended by Hair et al. (2017a). Through the PLS-SEM procedure, we obtained information about the factor loadings, Cronbach's alpha, the composite reliability index (CFI) and the average variance extracted (AVE) for each of the factors that make up the causal model of this research, and which are presented in Table 2.

Table 2. Measurement instrument of the structural model: Reliability and convergent validity

Construct	Item	St. loading factor (st. error)	t	Cronbach's α	Composite reliability	Average variance extracted
Retail Innovation – Product	IN1 IN2 IN3 IN4 IN5	0.830 (0.022) 0.751 (0.027) 0.822 (0.021) 0.794 (0.024) 0.8049 (0.0253)	38.446 20.022 38.320 33.267 32.431	0.860	0.899	0.641
Retail Innovation – Marketing	IN6 IN7 IN8 IN9 IN10 IN11	0.726 (0.030) 0.774 (0.023) 0.853 (0.014) 0.824 (0.019) 0.842 (0.018) 0.797 (0.022)	24.511 33.566 62.372 42.824 46.650 36.806	0.890	0.916	0.647
Retail Innovation – Relational	IN12 IN13 IN14	0.850 (0.016) 0.908 (0.010) 0.905 (0.010)	53.136 87.166 95.259	0.866	0.918	0.790
Sustainability – Economic	SN1 SN2 SN3 SN4	0.767 (0.037) 0.897 (0.011) 0.867 (0.015) 0.866 (0.015)	20.684 81.211 58.860 56.480	0.871	0.912	0.723
Sustainability – Social	SN5 SN6 SN7 SN8 SN9	0.732 (0.031) 0.883 (0.010) 0.804 (0.027) 0.826 (0.025) 0.872 (0.013)	23.719 91.870 29.325 32.486 65.290	0.883	0.914	0.681
Sustainability - Environmental	SN10 SN11 SN12	0.803 (0.031) 0.863 (0.022) 0.883 (0.014)	26.010 39.808 62.092	0.817	0.887	0.723
Store Awareness	AW1 AW2 AW3 AW4	0.759 (0.024) 0.854 (0.012) 0.891 (0.011) 0.815 (0.022)	31.151 72.335 80.339 37.788	0.850	0.899	0.691
Store Image	IM1 IM2 IM6 IM8	0.738 (0.024) 0.823 (0.017) 0.857 (0.012) 0.844 (0.012)	30.150 47.167 69.531 71.652	0.835	0.889	0.667
Store Perceived Quality	QL1 QL2 QL3 QL4	0.838 (0.022) 0.928 (0.007) 0.922 (0.008) 0.795 (0.025)	38.418 124.045 112.387 31.512	0.894	0.927	0.761
Store Loyalty	LO1 LO2 LO3 LO4	0.925 (0.008) 0.904 (0.010) 0.916 (0.008) 0.885 (0.012)	120.181 86.203 121.170 73.845	0.929	0.949	0.824
Store Equity	BV1 BV2 BV3 BV4	0.900 (0.0112) 0.749 (0.046) 0.904 (0.011) 0.873 (0.019)	79.063 16.272 84.221 45.384	0.880	0.918	0.737

* Statistically significant at p<0.1; **p<0.05; ***p<0.01; ns = non statistically significant

The results obtained from the Cronbach α reliability coefficient are satisfactory, oscillating between 0.8 and 0.9. These are the recommended values in advanced stages of research (Nunnally and Bernstein, 1994). The analysis of the composite reliability coefficients provides satisfactory results, which exceed the minimum required (0.7) (Chin, 1998). In addition, all the constructs of the structural model show values for the average extracted variance over 0.5 (Fornell and Larcker, 1981), so we can confirm the reliability and convergent validity of the instrument measuring the structural model. In addition, when analyzing the discriminant validity in Table 3 through the criterion proposed by Fornell and Larcker (1981), we observe the square root of the average variance extracted (AVE), which is presented in the diagonal of the matrix as higher than the correlation estimated between the factors, and which appears below the diagonal. Moreover, the value for heterotrait–monotrait ratios is below the threshold of 0.90 in all cases (Henseler et al., 2015), and comparing the loadings across the columns the indicator's loadings on its own construct are in all cases higher than all of its cross loadings with other constructs. This confirms the discriminant validity of the reflective constructs.

Table 3. Measurement instrument: Discriminant validity (Fornell-Larcker criterion and HTMT)

	IN – PRO	IN – MK	IN – REL	SN – ECO	SN – SOC	SN – ENV	AW	IM	PQ	LO	BV
Retail innovation–Product	**0.801**	0.686	0.494	0.340	0.383	0.291	0.374	0.597	0.437	0.296	0.231
Retail innovation–Marketing	0.605	**0.804**	0.657	0.512	0.469	0.381	0.538	0.618	0.516	0.288	0.205
Retail innovation–Relational	0.435	0.584	**0.889**	0.238	0.323	0.317	0.489	0.772	0.527	0.373	0.214
Sustainability–Economical	0.294	0.453	0.199	**0.850**	0.647	0.611	0.444	0.388	0.621	0.528	0.546
Sustainability-Social	0.352	0.434	0.302	0.560	**0.825**	0.713	0.324	0.424	0.478	0.504	0.448
Sustainability–Environmental	0.253	0.345	0.291	0.508	0.619	**0.852**	0.262	0.401	0.543	0.487	0.493
Store Awareness	0.333	0.474	0.422	0.382	0.246	0.254	**0.831**	0.684	0.573	0.396	0.264
Store Image	0.510	0.544	0.681	0.330	0.383	0.359	0.589	**0.805**	0.736	0.524	0.461
Store Perceived Quality	0.391	0.466	0.459	0.552	0.434	0.480	0.503	0.655	**0.872**	0.781	0.572
Store Loyalty	0.275	0.252	0.335	0.476	0.462	0.444	0.361	0.485	0.718	**0.908**	0.819
Store Equity	0.186	0.131	0.192	0.473	0.388	0.436	0.235	0.388	0.523	0.751	**0.858**

Diagonal values in bold are square roots of AVE and values below the diagonal are correlations between variables. Values above the diagonal are HTMT ratios.

On the other hand, when considering innovation and sustainability as second-order formative constructs, we examine their weights. In this way, we observed that the variance inflation factor (VIF) for innovation and sustainability dimensions is lower than the critical level of 5. In this sense, according to Diamantopoulos and Winklhofer (2001), there is no evidence of collinearity (Table 4). Descriptive statistics for the latent variables of the model as shown in Table 5.

Table 4. Parameter estimates of the formative second-order constructs

Second order construct	First order construct	Weights	VIF
Innovation	Innovation – Product	0.369***	1.602
	Innovation – Marketing	0.523***	1.973
	Innovation – Relational	0.293***	1.543

Sustainability	Sustainability – Economic Sustainability – Social Sustainability – Environmental	0.420*** 0.289*** 0.478***	1.553 1.863 1.728

Notes: VIF: variance inflation factor; *** p < 0.01

Table 5. Descriptive statistics for the latent variables of the model

Latent variable	Mean	St. Dev.
Product innovation	4.61	1.614
Marketing innovation	4.60	1.497
Relational innovation	4.95	1.620
Economic sustainability	4.10	1.144
Social sustainability	4.53	1.473
Environmental sustainability	4.42	1.156
Store Awareness	5.41	1.189
Store Image	5.33	0.931
Store Perceived Quality	4.68	1.204
Store Loyalty	4.34	1.514
Store Equity	4.09	1.224

Once reliability and convergent and discriminant validity of the measurement instrument are confirmed, the structural model is estimated. For the analysis of the proposed structural model, SmartPLS software has been used again with a full bootstrapping with 5000 subsamples (Ringle et al., 2015) to evaluate the hypothesized relationships. The results obtained are shown in Table 6.

Table 6. Causal relationships estimation

Relationship		Hypothesis	Standardised parameter	t
H1a	Retail Innovation→ Store Awareness	Supported	0.420***	10.185
H1b	Retail Innovation → Store Image	Supported	0.473***	13.097
H1c	Retail Innovation → Store Perceived Quality	Supported	0.322***	8.396
H2a	Sustainability → Store Awareness	Supported	0.157***	3.789
H2b	Sustainability → Store Image	Supported	0.074**	1.674
H2c	Sustainability → Store Perceived Quality	Supported	0.491***	12.106
H3	Store Awareness → Store Image	Supported	0.333***	8.326
H4a	Store Image → Store Loyalty	Supported	0.074**	1.797
H4b	Store Perceived Quality → Store Loyalty	Supported	0.670***	17.737
H5	Store Loyalty→ Store Equity	Supported	0.751***	32.571

Store Awareness: R^2=0.300, Q^2=0.191; Store Image: R^2=0.621, Q^2=0.382; Store Perceived Quality: R^2=0.468, Q^2=0.333; Store Loyalty: R^2= 0.517, Q^2=0.398; Global store equity: R^2=0.564, Q^2=0.387

* Statistically significant at p<0.1; **p<0.05; ***p<0.01; ns = non statistically significant

The results obtained from the PLS-SEM analysis allow us to accept most all of the proposed relationships of the causal model. En cuanto a los resultados obtenidos en el primer bloque de hipótesis que examinaba los nexos existentes entre la innovación percibida por los consumidores y las variables vinculadas tradicionalmente con el valor de marca, podemos confirmar las relaciones entre la innovación y la notoriedad de la tienda ($\beta 1a = 0.420$, $p < 0.01$); la innovación y la imagen de la tienda ($\beta 1b = 0.473$, $p < 0.01$); y, la innovación y la calidad percibida ($\beta 1c = 0.322$, $p < 0.01$). Del mismo modo, a través de la investigación realizada es posible confirmar también la relación positiva y significativa del segundo bloque de hipótesis, por lo que es posible aceptar las relaciones entre la sostenibilidad y notoriedad de la tienda ($\beta 2a = 0.157$, $p < 0.01$); la sostenibilidad y la imagen de la tienda ($\beta 2b = 0.074$, $p < 0.05$) y la sostenibilidad y la calidad percibida ($\beta 2c = 0.491$, $p < 0.01$).

Moreover, in relation to the third hypothesis, which examines the relation between store awareness and image, it has been supported, as a positive and significant coefficient is obtained

($\beta3 = 0.333$, $p < 0.01$). This result is aligned with the evidence reported by Ko et al. (2013) and Barreda et al. (2015), who also found a positive and significant relation between these variables but in other contexts. Likewise, the results obtained also show a positive and significant result in the two relations that form the fourth hypothesis of this study, as coefficients for the relation between store image and loyalty toward the store ($\beta4a = 0.075$, $p < 0.05$); and store perceived quality and loyalty ($\beta4b = 0.670$, $p < 0.01$).

Finally, we accept the hypothesis that links loyalty toward the store to global store equity, in view of the positive and significant coefficient obtained for the relation between these variables ($\beta5 = 0.751$, $p < 0.01$). This result corroborates previous evidence obtained regarding the main role of loyalty toward the store in building store equity (Yoo et al., 2000; Arnett et al., 2003).

5. Conclusions

While product brand equity has generated numerous studies since long ago, it is only in the last decade that store equity is attracting special interest (Huang et al., 2016, Grewal et al., 2017). In this sense, a new concept linked to brand equity emerges: store equity (Arnett et al., 2003; Pappu and Quester, 2006; Gil-Saura et al., 2017). Besides the study of this construct and the variables with which it is traditionally linked (i.e., Store awareness, Store image, Store perceived quality and Store loyalty), the effects that sustainability and innovation have on brand equity have also been demonstrated (Kumar, 2014; Lavorata, 2014; González-Lafaysse and Lapassouse-Madrid, 2016; Pappu and Quester, 2016; Gil-Saura et al., 2017; Marcon et al., 2017).

In this sense, the results obtained in the present empirical study confirmes that innovation and sustainability are key variables to ensure the achievement of store image, as well as store awareness and store perceived quality, However, these do not help explain all the variables equally. While innovation is seen as the vital instrument to influence the image of customers towards the retail stores, sustainability is related to perceived quality.

Moreover, the results obtained in this study allow to confirm the relation between store awareness and store image. In this sense, it seems evident that a better knowledge of the store by consumers will generate that the image that they develop about the store is more positive. Furthermore, store image and store perceived quality are the pillars of customer loyalty toward the store. Finally, the present research provides support to the key role of loyalty in the creation of store equity in big retailers.

6. Implications for management

From the results obtained, a series of implications for the managers of retail commercial establishments can be derived. In the first place, it is possible to state that in a highly competitive sector such as retail, it is vital to identify what factors have an impact on the creation of store equity. The development of this research helps to identify which are the basic variables in the construction of brand equity that will influence global store equity. In particular, loyalty is seen as the key variable in this relationship, so that promoting loyalty plans that improve the relationship between retailer and consumer will result in benefits in terms of global store equity. Similarly, if efforts are made with regards to store image (e.g. creating a pleasant store environment, offering attractive promotions or extending product assortment) and in the perceived quality, this will have a positive effect on store equity (e.g. delivering service right the first time), this will have a positive effect on store equity.

In addition, sustainability and innovation are presented as key elements for the transition from traditional business models to new business models. Thus, these variables can be a source of competitive advantage if they are used correctly by store chain managers. The development of products using less harmful materials for the environment or the increase of product lines such as those that come from fair trade, are actions that will improve the consumers' perceptions of companies.

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7. Limitations and future lines of research

Despite the contribution of this study, it is worth mentioning some limitations that are linked to the elements that make up brand equity in the retail sector. The results observed from the structural model analysis show the importance of continuing investigating these constructs, especially in relation to store awareness and store perceived quality, as well as the relations between store perceived quality and image, and store loyalty. Likewise, we consider that the proposed model does not cover all the possible variables that may influence global store equity perceived by consumers in grocery retailing, so we propose the inclusion of other variables such as satisfaction, trust and commitment as a future research line. In addition to this, the introduction of moderator variables (e.g. multichannel consumer, store format) would considerably enrich the article. These relationships will possibly contribute to improving the explanatory capacity of the model by expanding the study of the driving factors of store equity.

Moreover, we understand that the main contribution of our paper is the detailed analysis of the impact of innovation and sustainability on store equity through store awareness, store image, store perceived quality and store loyalty, considered as antecedents of store equity, following a recent stream in the literature in this sense (e.g. Gil-Saura et al., 2013; Londoño et al., 2016; Mohan and Sequeira, 2016; Gil-Saura et al., 2017). However, the consideration of the variables traditionally related to brand equity and sustainability as dimensions of a store equity formative construct, as in Arnett et al. (2003) or Beristain and Zorrilla (2011), and its comparison to the reflective overall store equity construct, should be further explored, as suggested by Baalbaki and Guzmán (2016). Alternatively, a reflective measure of brand equity may be used, as in Chang and Liu (2009), so that a more parsimonious model may be proposed, where additional relations, such as the direct impact of innovation and sustainability on brand equity, measured as a second-order construct, might be explored.

Apart from this, since the present study has not enabled us to confirm the relation between the innovation and the sustainability in the direction posited, future research should be directed towards the need to explore in-depth the measurement of innovation and sustainability. To date, these are two novel concepts in the context of commercial distribution with both very limited support and differing opinions with respect to their measurement. In this vein, further research should be conducted to define the dimensionality of the innovation construct and the eventual inclusion of Information and Communication Technologies (ICT) as a dimension of retail innovation, in the line of Reinartz et al. (2011).

Finally, it goes without saying that, for the development of this empirical study, we have focused on a limited number of commercial formats, a single sector of activity and a number of participants that is perhaps insufficient. For all these reasons, we consider the need to broaden the analysis of the proposed framework based mainly on these three elements.

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Appendix. Items adapted to the context of the research and included in the questionnaire

Construct	Item		Authors of the original scale
Store equity	BV1	It makes sense to buy at STORE X instead of any other brand, even if they are the same	Yoo and Donthu (2001)
	BV2	Even if another brand has the same features as X, I would prefer to buy at STORE X	
	BV3	If there is another brand as good as STORE X, I prefer to buy at STORE X	
	BV4	If another brand is not different from STORE X in any way, it seems smarter to purchase at STORE X	
Store awareness	AW1	I am aware of [store name] stores.	Yoo et al. (2000) and Netemeyer et al. (2004)
	AW2	I can recognize [store name] stores among other competing stores.	
	AW3	Some characteristics of [store name] stores come to mind quickly.	
	AW4	I have difficulty in imagining [store name] stores in my mind.(*)	
Brand image	IM1	STORE X has friendly personnel.	Yoo et al. (2000)
	IM2	STORE X has extensive assortment.	
	IM3	STORE X can easily be reached.	
	IM4	STORE X offers value-for-money.	
	IM5	STORE X has a nice atmosphere.	
	IM6	STORE X has attractive promotions in the store.	
	IM7	STORE X provides excellent customer service.	
	IM8	STORE X offers an attractive loyalty program.	
	IM9	I can quickly recall the symbol or logo of STORE X	
Store perceived quality	QL1	The likely quality of STORE X is extremely high.	Dabholkar et al. (1996) and Yoo et al. (2000)
	QL2	[store name] stores provide excellent service to its customers.	
	QL3	[store name] stores are known for their excellent service.	
	QL4	[store name] stores perform service right the first time	
Store loyalty	LO1	I consider myself to be loyal to [store name] stores.	Yoo et al. (2000)
	LO2	When buying groceries [store name] stores are my first choice.	
	LO3	I will not buy from other groceries retailers if I can buy the same item at [store name] stores	
	LO4	Even when items are available from other retailers, I tend to buy from [store name] stores.	
Retail Innovation	IN1	STORE X offers many new products	Lin (2015)
	IN2	STORE X offers creative own designed products	
	IN3	STORE X offers innovative private brand products	
	IN4	STORE X offers more innovative products than other stores	
	IN5	STORE X offers various products for selection	
	IN6	STORE X offers many innovative self-services	
	IN7	STORE X offers many innovative services	
	IN8	STORE X offers more innovative services than other stores	
	IN9	STORE X creates a holiday atmosphere through store decoration	
	IN10	STORE X has ability to create a different in-store atmosphere	
	IN11	STORE X offers an innovative shopping environment	
	IN12	STORE X offers a creative store design	
	IN13	STORE X offers different discount programs	
	IN14	STORE X offers an innovative promotion mix	
	IN15	STORE X offers more creative promotions than other stores	
Sustainability	A1	STORE X pays producers a fair price	Lavorata (2014)
	A2	STORE X pays its employees a decent wage	
	A3	STORE X pays its employees a minimum wage in developing countries	
	A4	STORE X monitors the working conditions of its employees	
	A5	STORE X sells fair trade products	
	A6	STORE X sells organic products	
	A7	STORE X implements humanitarian actions	

	A8	STORE X engages in actions directed at schools	
	A9	STORE X sells share products (donations to charitable associations)	
	A10	STORE X recycles their products and packaging	
	A11	STORE X cuts back their consumer of electricity	
	A12	STORE X pays attention to the environment	

* Reversed item