Repositorio Institucional de la Universidad Autónoma de Madrid

https://repositorio.uam.es

The role of private label tiers and private label naming strategies in the relationship between private label brand equity and store loyalty

Purpose

The evolution of private labels is a recent trend in the retail industry: many retailers now manage a private label (PL) portfolio that includes multiple value propositions, as well as various brand name strategies. Little research has been done, however, on how this combination of PL strategies conditions the results of the retailer that manages them. This study examines the formation of PL brand equity and its effect on store loyalty for retailers with differently-tiered PL programs (a "better" program with standard PL vs. a full PL quality spectrum with economy, standard and premium PLs) and different PL naming strategies (store-banner name or stand-alone brand name).

Design/methodology/approach

A survey (N = 644) was used to test the model in the context of the consumer goods retail industry. Exploratory factor analysis, confirmatory factor analysis and multi-group structural equation modelling techniques were used to assess the proposed model.

Findings

The results show differences in the formation of PL loyalty based on whether or not the retailer has a tiered PL program. In portfolios with economy, standard and premium PLs, PL associations has a stronger effect than PL awareness in the formation of PL loyalty. Portfolios with a standard PL show balanced effects of PL associations and PL awareness on PL loyalty formation. As to the positive effect of PL brand equity on store loyalty, this study also shows a stronger effect of PL brand equity on store loyalty in chains that choose to use their store banner name in their PLs.

Practical implications

Retailers that manage multi-tier PL portfolios (as opposed to those that commercialise a standard PL) can increase loyalty to the PL portfolio significantly by constructing highly differentiated images of their economy, standard and premium PLs to ensure that consumers truly perceive the different value propositions of their PL tiers. As to PL naming strategy, we recommend that retailers that use the same retail chain name for one or several of their PLs invest in their corporate reputation to strengthen the brand equity achieved by their PLs and thus increase loyalty to the retail chain. Retailers must perform specific communication and advertising campaigns for PLs with the stand-alone brand name.

Originality/value

Today, any reference to PLs as a whole is overly simplistic, but no research has assessed empirically differences in the influences of a multi-tiered vs. a standard PL program on the PL loyalty formation for PL portfolios. Nor has any empirical research incorporated the influence of PL naming strategy on store loyalty. This study fills these gaps, integrating into the same model two significant moderating variables of retailers' strategy: their PL tier strategy and their PL naming strategy.

Keywords: private labels, private label brand equity, loyalty, tiered private label program, private label naming strategies.

Introduction

Private labels (hereafter, PLs) constitute a tremendously important phenomenon at the level of both scholarship and management (Calvo-Porral and Levy-Mangin, 2014; González-Benito and Martos-Partal, 2014). The significance of these brands can be measured by the market share they have achieved. PLs constitute a key item in the retailer's strategy, shaping the retailer's positioning, image and differentiation (Martenson, 2007; Sudhir and Talukdar, 2004). The global market share in value of PLs was 16% in 2016 (Nielsen, 2016). In the same year in Europe, PLs' market share in value reached 31% (PLMA, 2017), making Spain the European country in which PLs have the greatest weight.

The growing body of literature on PLs since their appearance attests to their importance to scholars. The first studies focused on similarities and differences in the price and quality of PLs and manufacturer brands (Méndez et al., 2008; Richardson et al., 1994), as well as consumers' attitudes toward and perception of PLs, and the factors that influenced them (Garretson et al., 2002), the characteristics of the consumers most inclined to buy these brands (Ailawadi et al., 2001; Martínez and Montaner, 2004; Richardson et al., 1994), estimation of the market share of PLs (Cotterill et al., 2000; Rubio and Yagüe, 2009) and the benefits of PLs for their managers in obtaining higher levels of profitability and loyalty (González-Benito and Martos-Partal, 2012).

The most recent studies of PLs focus on consumers' satisfaction and identification with these brands (Rubio et al., 2014), measuring their brand equity (Cuneo et al., 2012), identifying specific antecedents of their brand equity (Beristain and Zorrilla, 2011; Calvo-Porral and Levy-Mangin, 2014; Calvo-Porral and Lang, 2015; Diallo, 2012) and determining the role of brand equity of PLs (PL brand equity) in building the retailer's brand equity (Calvo-Porral et al., 2013; Choi and Huddleston, 2014; Gil-Saura et al., 2013; Jara and Cliquet, 2012).

Research on PL brand equity to date has conceived of these brands as a separate brand class rather than as individual brands from different retailers. As a separate brand class, PL brand equity has been studied for a set of product categories (Calvo-Porral and Levy-Mangin, 2014), for a specific product category (Cuneo et al., 2012; Molinillo et al., 2015) and for a retail chain name (Girard et al., 2017; González-Benito and Martos-Partal, 2014). Recent studies warn, however, of the need for more research on the formation of PL brand equity and its effect on store loyalty. Factors include the possible existence of differences between retail chains with different PL tier strategies (standard PL vs. standard, premium and economy PLs) (González-Benito and Martos-Partal, 2014) and PL naming strategies (store-banner name vs. stand-alone brand name) (Geyskens et al., 2018), since both strategies are identified as keys to unlock PLs' true potential and create truly individual PLs. In response to this call for research, the current study aims to advance this line study by analysing the formation of PL brand equity and its effect on store loyalty for retailers with different PL tier and PL naming strategies.

Although PLs are not a recent phenomenon, currently PL tier strategies are increasingly sophisticated and use approaches that were until recently used exclusively for manufacturer brands. Currently, many retailers commercialise a PL portfolio with different value propositions for the consumer in price and quality instead of using a single standard PL. According to the data in Nielsen (2017), premium products of mass consumption make up 24% of the retailer's billing volume, and their growth is estimated at 6%, in contrast to the 2.9% growth of other mass consumption products. We find no research, however, that examines the formation of PL loyalty in retail chains with different PL tier strategies.

To date, prior studies of PL commercial strategies have been structured around two clearly differentiated lines of research. The first stresses studies that analyse the coexistence of PL tiers (standard, premium and economy) in the product category. These studies focus on how perception of quality and sales of PLs affect the presence of these tiers. The second line of research analyses use of the store's brand name in the PL portfolio vs. not using the store's brand name to commercialise the PL portfolio. The line of research on PL naming strategies has focused on brand extensions, analysing how using the same PL name to enter new

2

product categories or provide brands with different price/quality ratios can influence consumers' perceptions (González-Benito and Martos-Partal, 2014; Palmeira and Thomas, 2011) and the results obtained by these brands (market shares, loyalty …) (Geyskens *et al*., 2010; Gielens, 2012; Richards *et al*., 2015).

We must consider, however, that the different PL tier strategies coexist with different PL naming strategies. The incremental contribution of this study to previous research thus stems from its unification of these two lines of research and joint consideration of the moderating effect of both types of strategy within the same theoretical framework on formation of PL brand equity and its effect on store loyalty. First, this study enriches the line of research on PL tiers by attempting for the first time to determine the extent to which multiple PL tiers increase the influence of PL awareness and PL associations on PL loyalty. Further, since the study of PL naming strategies to date has focused primarily on their influence on the introduction of new PL products, this study uses a broader focus to tackle the issue of how different PL naming strategies influence the relationship between PL brand equity and store loyalty, producing results that are relevant to both academics and retailers.

Further, in the area of PL equity, therefore, various questions remain unanswered, and this study proposes to tackle them. The first question is the nature of the conceptual relationships among the dimensions of brand equity and of these dimensions overall to PL brand equity, since the literature shows no consensus on their relationships and interactions in creating PL brand equity (Girard *et al*., 2017; Anselmsson *et al*., 2017). The second question is the moderating effect of PL tier strategy on the formation of PL loyalty, that is, whether the influence of PL awareness and PL associations on PL loyalty differs based on whether the retailer commercialises a single PL (standard PL, which is still the largest tier with the most retailers) or several PLs with different positioning in price and quality (economy, standard and premium PLs). The third question is to determine the impact of PL brand equity on store loyalty for different PL naming strategies (store-banner name vs. stand-alone brand name).

In sum, this study aims to provide a theoretical framework to examine the nature of the relationships among the dimensions of PLs brand equity, incorporating the moderating role of the retailer's PL tier and naming strategies into the modelling.

2. Theoretical framework

2.1 Conceptualizing private label brand equity

Private labels[1] are owned, managed and marketed by a particular retailer and sold in an exclusive store (Calvo-Porral and Levy-Mangin, 2014). When PLs were first introduced (when retailers commercialised these brands as alternatives with lower quality and price than manufacturer brands), research on brand equity focused on manufacturer brands. As PLs evolved to improve their levels of quality, studies emerged comparing the objective and perceived quality of PLs and manufacturer brands. Various studies (Apelbaum *et al*., 2003; Erdem *et al*., 2004; Méndez *et al*., 2008, among others) find that the objective quality of PLs is similar to that of manufacturer brands in a great number of product categories, although PLs continue to have lower perceived quality (Beldona and Wysong, 2007), generate less preference and memory than manufacturer brands (Beldona and Wysong, 2007; Juhl *et al*., 2006) and have inferior reputations (De Wulf *et al*., 2005; Fornerino and d'Hauteville, 2010). Authors like Erdem *et al*. (2004) warn, however, that brand equity may cease to be the sole property of manufacturer brands.

There is currently no doubt that PLs enjoy brand equity, conceptualized as the differential value provided by PLs to consumers based on a comparison between brand alternatives (Calvo-Porral and Levy-Mangin, 2014). The main line of research on PL brand equity has approached analysis from the paradigm of cognitive psychology, stressing as its reference model the pioneering proposal of Aaker (1991), who

---

1 Also known as store brands, own brands or retailer brands.

identifies four categories of assets that the firm should develop and manage in order to build brand equity from the consumer's perspective: brand awareness, perceived quality, brand associations and brand loyalty. Given the importance and acceptance of these categories in the scholarly literature on brand equity, this study is theoretically grounded in the study by Aaker (1991).

In this study, PL awareness is defined as the ability of a potential consumer to recognize or recall a PL as part of a certain product category. PL associations refers to the information in the consumer's mind connected to the PLs that creates favourable attitudes towards the brand. In measuring PL associations, this study takes into account associations included in the literature on PLs—good value for money and perceived quality. PL loyalty, in turn, is conceptualized as the tendency to continue a relationship with a PL, as demonstrated by the intention to purchase it (Oliver, 1999).

The existing literature presents two main approaches to structuring general PL brand equity frameworks. First, a rather simplistic approach, argues that all brand equity dimensions function in a parallel manner (Aaker, 1991), without any structural relationships amongst themselves, such that PL brand equity is the dependent variable and Aakers' dimensions (e.g., awareness, quality, associations and loyalty) are the predictors (Calvo-Porral et al., 2013; Calvo-Porral and Levy-Mangin, 2014; Beristain and Zorrilla, 2011). The second focus, in contrast, argues for a multi-step approach, in which structural relationships arise among the dimensions of PL brand equity and overall PL brand equity (Diallo et al., 2013; Girard et al., 2017). For example, in conceptualizing PL brand equity, Girard et al. (2017) models awareness as the antecedent, quality/associations and loyalty as the mediators, and PL brand equity as the dependent variable. Some models (Rubio et al., 2014) even identify the dimensions quality/perceived value and loyalty as the formative indicators of PL brand equity. From the results of these studies, we can see the lack of clarity and consistency in the structural relationships of the dimensions of PL brand equity, indicating a need for further research. This study is framed within the line of research that argues for structural relationships among the dimensions of PL brand equity (Girard et al., 2017), which are presented next.

First, PL awareness assumes greater recall and recognition of these brands, increasing the probability that the brand will be included in the consumer's consideration set. Recall and recognition exert a positive influence on the consumer's purchase decision such that the greater the brand recognition, the greater his/her loyalty to it (Jinfeng and Zhilong, 2009; Hartman and Spiro, 2005; Vahie and Paswan, 2006). Second, brand awareness has been identified as an element that influences brand equity, affecting consumer decisions by creating feelings of pleasure and familiarity (Aaker, 1991; Keller, 1993; Yoo et al., 2000). In particular, PL awareness has been positively related to PL brand equity (Gil Saura et al., 2013) through the loyalty that these brands generate (Girard et al., 2017). Based on the following, we propose:

H_1: PL awareness directly influences PL brand loyalty and indirectly influences PL brand equity through PL loyalty.

Second, PL associations has been shown to lead to greater loyalty and purchase intentions, both in general (Yoo et al., 2000) and specifically in the case of PL products (Wu et al., 2011; Calvo-Porral and Lang, 2015). Among the main PL associations recently identified in the scholarly literature are quality and perceived value (Rubio et al., 2014). For consumers, both characteristics reduce the perceived purchase risk traditionally associated with these brands (Wu et al., 2011), such that retailers who manage to foster these associations with their PLs develop consumer inclination to purchase PL products (Richardson et al., 1996; Bao et al., 2011) and greater consumer preference toward their PL brands (Wu et al., 2011; Bao et al., 2011; Beristain and Zorrilla, 2011; Calvo-Porral and Levi-Mangin, 2014; González-Benito and Martos-Partal, 2014 Geyskens et al., 2010). Prior studies have related PL associations indirectly to PL equity through the loyalty that these brands generate (Calvo-Porral and Lang, 2015; Cuneo et al., 2012). Therefore, we pose the following research hypothesis:

H_2: PL associations directly influence PL brand loyalty and indirectly influence PL brand equity through PL loyalty.

Finally, it is relevant to analyse the role of PLs in achieving store loyalty. This study defines store loyalty as the customer's attitudinal preference for the store when compared to available competitive alternatives (Rubio *et al.*, 2017). PLs constitute a fundamental issue in the management and strategy of retailer assortment, since they increase retailers' profitability, differentiation and the bargaining power (Ailawadi and Harlam, 2004). It is true that the first line of studies that relate PLs to store loyalty affirm that loyalty to the retailer encourages preference towards the commercialised PLs, as consumers loyal to a retailer are more familiar with its brands as compared to competitors' PLs and are more receptive to buying them (De Wulf *et al.*, 2005; Liljander *et al.*, 2009). The most recent literature argues, however, that buyers are not loyal to a single retailer and can become familiar with the PLs of different retailers, perceiving quality differences between them and showing preference for stores where they can acquire the PLs they like best. Thus, the causal relationship proposed argued this study is that PL brand equity positively influences store loyalty, as the PLs that enjoy prestige drive the customer´s preference and loyalty and differentiate the retailer that sells them. These preferences lead to increased costs for switching to other retailers, since consumers will buy from that retailer, among other reasons, to get their favourite PL (Bîgné *et al.*, 2013; Martos-Partal and González-Benito, 2011; Pepe *et al.*, 2011; Rubio *et al.*, 2017; Koschate-Fischer *et al.*, 2014). Consequently, we propose:

H$_3$: PL brand equity exerts a direct and positive effect on store loyalty.

2.2 PL tier strategies and PL naming strategies

In analysing the formation of PL brand equity and its effect on store loyalty, recent studies call for more scholarly research on possible differences between retail chains with different PL tier and naming strategies (Geyskens *et al.*, 2018; González-Benito and Martos Partal, 2014).

To date, studies that consider PL portfolios with different tiers (standard, economy and premium PLs) have focused on analysing the relationships that occur in terms of perception of purchasing of PLs among the different PL tiers composing the portfolio. Nenyc-Thiel and Romaniuk (2011) argue the coexistence of both types of brand for PLs with two tiers (standard and premium), since they observe that consumers attribute different traits to each. Further, Palmeira and Thomas (2011) find that commercialising a single kind of PL (standard or premium) leads consumers to assume that the PL has lower quality than when both types are commercialised. When both standard and premium PLs are commercialised, these authors find that the perception of premium PLs' quality improves due to the presence of standard PLs, whereas the perception of standard PLs is not changed by the presence of premium PLs.

For PL portfolios with three price levels (standard, premium and economy), González-Benito and Martos-Partal (2014) argue that the presence of economy PLs improves the perception of standard PLs' quality, while the presence of premium PLs worsens perception of standard PLs' quality, with the positive effect being more intense than the negative. Other studies analyse the effect of multi-tiered PL programs on sales of PLs in product categories. Geyskens *et al.* (2010) find that economy and premium PLs cannibalize the existing PL offering, probably due to phenomena of "divided loyalty" and "brand strength dilution through quality variation". Gielens (2012), on the other hand, observes that introducing new standard and premium PLs is more likely to increase sales in the product category than introducing new economy PLs. New economy PLs more often increase their own share. Further, the same author finds that the standard PL is less often negatively affected by new products of other brands than is the economy PL.

When evaluating PLs and determining whether to buy them, consumers fundamentally use information from extrinsic attributes (e.g., brand name, price) and intrinsic attributes (e.g., ingredients). These attributes help the consumer to form his/her evaluation of the associations that these brands generate. It is logical to think that PL strategies provided, for example, by premium PLs, reduce the perceived risk of purchasing these brands (Erdem *et al.*, 2004) more than do strategies that commercialise a single standard PL. Similarly, offering a premium PL strengthens both brand recognition of PLs and the associations that they generate (their perceived quality) more intensely, contributing to increasing loyalty to these PLs over the

standard PL (Rubio *et al*., 2014), primarily for quality-conscious consumers. At the other end of the price/quality spectrum, the PL strategy provided, for example, by an economy PL, strengthens the recognition and associations based on low prices that contribute to generating loyalty to PLs more than a PL strategy based on a single standard PL (Rubio *et al*., 2014; Girard *et al*., 2017), primarily for price-conscious consumers.

Based on prior scholarly research, which finds that introducing economy and premium PLs into portfolios with standard PLs affects perception and sales of the chain's PLs, we formulate the following research hypothesis:

H_4: The effect of PL awareness and PL associations on PL loyalty is higher in retailers with economy, standard and premium PL programs than in retailers with a standard PL program.

Further, it is important to analyse the PL multi-tiered strategy jointly with the retailer's PL naming strategy (González-Benito and Martos-Partal, 2014; Nenycz-Thiel and Romaniuk, 2015). According to Keller *et al*. (2016) and Geyskens *et al*. (2018), retailers can choose among different alternatives, highlighting two main PL-branding strategies: (1) They can opt for store-banner branding, clearly revealing ownership of their PL lines by using their store name in the name of their PLs; (2) or they can decide to use stand-alone branding and avoid an explicit link between the PLs and the store name.

The use of umbrella brands in the context of PLs serves, on the one hand, to reduce the uncertainty and perceived risk that applies to products commercialised under this brand (Erdem and Chang, 2012). This means that PL equity is transferred from some product categories to others when an umbrella brand is used, since a learning effect occurs among products that use the same name for the PLs. Consumers who have had a positive experience with a product of a specific PL attribute the same characteristics (quality and perceived value) to other products in the portfolio commercialised under the same PL name. This is a common phenomenon, whatever the umbrella name used for the store's PL products. Further, the positive halo effect is strengthened and intensified when the umbrella name chosen is that of the store chain and the retail chain has achieved favourable associations on the market and among its customers (Bao *et al*., 2011; Geyskens *et al*., 2018). In this case, the positive influence of PL brand equity on loyalty to the retail chain can be expected to intensify when the PLs share the chain's name, since the chain's favourable commercial reputation and image transferred by its name is added to the equity generated by the PLs.

On the other hand, when the retailer decouples the names of its PLs from the store name, the brand equity of the different PLs that the retailer manages must be built individually, requiring dedication of resources to each of the PLs individually. These PLs do not obtain the benefits derived from favourable perceptions generated by the retail chain, and the retail chain thus neither strengthens the value of the PLs nor transfers its positive effects to the different PLs. Store loyalty in the presence of stand-alone PL name strategies thus depends almost exclusively on the brand equity built for each of the PLs. The effect of PL on store loyalty is thus expected to be more intense in chains with a store-banner name strategy than in retailers that have opted for a stand-alone brand name strategy for their PLs. Based on the foregoing, the following hypothesis is proposed:

H_5: The effect of PL brand equity on store loyalty is higher in retailers with store-banner name for their PLs than in retailers with stand-alone names for their PLs.

Figure 1 presents the theoretical framework used in this study.

Figure 1 here

3. Methodology

3.1 Sample and Procedure

To contrast the hypotheses proposed, an empirical study is performed of people residing in Spain who were responsible for shopping in their households and who stated that they purchase PLs in food products. The information was gathered by telephone survey. The respondents were sampled randomly by a market research institute, one of Spain's leading companies in the sector. The respondents are representative of the Spanish population as a whole in terms of gender, age and geographical region. Table 1 shows the sample profile. It is composed primarily of women with a monthly income of 1001-2000 euros, a medium-high education level, a monthly expenditure on shopping of 151-300 euros, and a purchase frequency distributed evenly from once a month to more than four times a month.

Table 1 here

The market research firm recommended collecting information by telephone survey instead of a face-to-face survey at the store exit because consumers who have just finished shopping for food are loaded down and in somewhat of a hurry to preserve the food (perishables) purchased. Given the length of the survey, these conditions would make it difficult for consumers to complete the entire survey. In addition to being cheaper, the telephone survey has the advantage of ensuring that the respondents are habitual customers of the retailers, and are thus familiar with the latter's PLs, making it possible for respondents to answer the questionnaire questions correctly.

The respondents shopped at Mercadona supermarkets, as well as at Carrefour, Eroski and Auchan, in their respective hypermarket and supermarket formats. A total of 644 valid questionnaires was obtained. The sampling method chosen was stratified random sampling with simple allocation to obtain a uniform percentage of data in each of the retailers analysed. The random error was 3.94%, assuming the maximum hypothesis of indeterminacy (p = q = 0.5) and a confidence level to 95.5%.

The retail chains were chosen based on two criteria. The first was their importance in Spain in terms of market share (in food products, accounting for approximately 65% of mass distribution) (Kantar WorldPanel, 2016). The second was PL tiers and PL naming strategies. As to PL tiers in the food categories studied, Mercadona has just one tier (standard PL), and Carrefour, Eroski, Alcampo and Simply three (economy, standard and premium PLs). As to PL naming strategy, Mercadona, Alcampo and Simply use stand-alone branding, and Carrefour and Eroski store-banner branding.

3.2 Item selection

In proposing the model variables, the items used to measure the concepts were taken from the adaptation of scales used previously in the scholarly literature. Specifically, to measure PL awareness and PL loyalty, the items employed by Yoo *et al.* (2000) were adapted. To measure PL associations, the scales from Lassar *et al.* (1995) and Pappu *et al.* (2005) were adapted. PL brand equity was measured through the scale used by Yoo *et al.* (2000). Finally, store loyalty was measured by adapting the scale from Rubio *et al.* (2017). Responses were recorded on multi-item 11-point Likert scales from 0 (disagree completely) to 10 (agree completely). The items are presented in Table 1 of the Appendix.

Table 1 here

3.3 Information analysis techniques

First, a descriptive analysis of the model variables was performed. The average values and standard deviations of the constructs were calculated for the proposed model. These values are shown in Table 2 for the different retail chains analysed, according to their PL tier and PL name strategies. The values are generally similar values for the different retail chains or retail chain groups, although Mercadona has slightly higher values than the others for the set of study variables.

Table 2 here

Next, the study analysis was conducted using covariance-based confirmatory factor analyses and structural equation modelling in AMOS 23 software. The analysis used the data aggregated for all retailers in the study. Structural equations modelling methodology was chosen because of: (i) presence of latent variables, (ii) complex relations among the different model variables, and (iii) the need to test the theory of the model (Abril and Rodriguez, 2016).

Third, to analyse the moderating effect of PL tier strategy in the formation of PL loyalty and the moderating effect of the PL naming strategy in the relationship between PL brand equity and store loyalty, two multi-group analyses of the structural modelling of covariance were performed using the programme AMOS 23. First, for the possible moderating effect of the PL tier strategy in the formation of PL loyalty (Hypothesis 4), the retail chains with different PL tier strategy were compared, that is, Mercadona (with one PL tier: standard PL program) vs. Alcampo, Simply, Carrefour and Eroski (with three PL tiers: economy, standard and premium PL program). Second, to analyse the possible moderating effect of PL naming strategy in the relationship between PL brand equity and store loyalty (Hypothesis 5), the retail chains with different PL naming strategy were compared, that is, Mercadona, Alcampo and Simply (with stand-alone PL naming) vs. Carrefour and Eroski (with store-banner PL naming).

In the food category, 1) Mercadona supermarkets commercialise a single standard PL with the name Hacendado. 2) Similarly, Simply supermarkets and Alcampo hypermarkets—both of which belong to the Auchan group—do not use the name of their retail chains in their PLs. They commercialise the economy PL with the symbol of a hand making a "thumbs up" and a green circle on white, yellow and green packaging. The standard PL is commercialised with the symbol of a red bird, and the premium PL with the brand Mmm!, the symbol of the bird in white on black and bronze packaging. 3) The supermarkets and hypermarkets Carrefour and Eroski use their retail chain brands in their economy, standard and premium PLs. Specifically, Carrefour Discount uses the brand on blue and white packaging for its economy PLs, while Eroski Basics uses white on red packaging; for their standard PLs, the stores use the brands Carrefour and Eroski, respectively, and for their premium PLs, Carrefour Selection and Eroski Seleqtia, respectively, with black and white packaging.

Therefore, given the PL tier and naming strategies in the retail chains analysed, two different multigroup analyses were mandatory to test the moderating effects raised in hypotheses 4 and 5. The resulting combination of tier and naming strategies and the different groups of retail chains compared in both submodels can be seen in Table 3.

Table 3 here

4. Results

4.1 Quality of the measurement model

First, the research validates a measurement model that uses all items pooled from the brand equity literature (Aaker, 1991). Based on the preliminary exploratory analysis and a series of confirmatory analyses, we eliminated cross-loading items as well as items with weak loadings (smaller than 0.50; Fornell and Larcker, 1981). Of the 4 dimensions of brand equity proposed by Aaker (1991) based on the consumer—brand awareness, brand associations, brand perceived quality and brand loyalty—the confirmatory analysis advised retaining 3 (PL awareness: 3 items; PL associations: 5 items, 2 of which correspond to PL perceived quality, which disappears as an independent dimension; and PL loyalty: 3 items). Additionally, PL brand equity (3 items) and store loyalty (6 items) emerged as separate factors. The final list of items is presented in Table 1 of the appendix.

The overall model, which incorporates the four chains analysed, obtains satisfactory fit (χ^2/d.f.= 1.94; CFI= 0.987; GFI= 0.966; NFI= 0.974; RMSEA= 0.04). Table 4 presents the results of the analyses of reliability and validity for the full model.

4.1.1. Convergent and discriminant validity

Before analysing the moderating role of the PL strategies analysed, we confirmed fulfilment of psychometric properties of the measurement scales for the study variables, following the recommendation by Byrne (2013). To do so, confirmatory factor analyses were performed using the programme AMOS 23.0. In all cases, the reliability statistics used—Cronbach´s Alpha and composite reliability—were greater than the minimum value of 0.70 recommended by Hair *et al*. (2006), the variance extracted exceeded 0.5, and all items had sufficient convergent validity, since all parameters are statistically significant.

Table 4 here

Second, discriminant validity of the constructs was examined by comparing the correlations between each pair of constructs against the square root of the average variance extracted (AVEs) for these constructs (Fornell and Larcker, 1981). In this test, discriminant validity is established when correlations between a pair of latent variables are smaller than the square root of the AVE of each variable. Table 5 shows the discriminant validity for the full model. In all cases, the square root of the AVE for each construct is higher than the correlations between each pair of concepts. In further support of discriminant validity, we find that the inter-dimension correlations were not extremely high (e.g., 0.90 or above) and the modification indices did not indicate model improvement via correlated item error terms (Anselmsson et al., 2017).

Table 5 here

4.1.2. Measurement model invariance across retailers

Following the confirmatory analyses of the total simple, several additional confirmatory analyses were performed to confirm whether the scales functioned in the same way for the different retailers and whether the scales employed could be used to make inter-group comparisons. To answer these questions, we examined measurement invariance between the retailers in the study using multiple group confirmatory factor analysis.

The results of the confirmatory analysis for the two submodels considered show satisfactory results (Table 6).

Table 6 here

For the two submodels analysed, we apply the contrasts required to confirm equivalence of the measurement models between the two subgroups considered. For the moderating effect of PL tier in Submodel 1, Mercadona (single retail chain with only one PL tier—standard PL program) is compared to Alcampo, Simply, Carrefour and Eroski (with an economy, standard and premium PL program). First, through multigroup confirmatory factor analysis, the goodness of fit indices are calculated, taking all subsamples simultaneously. The results obtained are satisfactory ($\chi2/d.f.= 1.973$; CFI= 0.989; GFI= 0.977; RMSEA= 0.039), confirming that the factor structure of the variables is equivalent in the different samples (Mercadona, with a single PL tier vs. the other retail chains, with three PL tiers). Second, the equality constraint is imposed on the factor loadings of the samples and the resulting goodness of fit for the constrained model compared to the result obtained for the unconstrained model ($\Delta\chi2= 5.07$; $\Delta d.f.= 5$; $p= 0.41>0.05$). The model does not worsen significantly, guaranteeing that measurement invariance is fulfilled.

We then contrast equivalence of the factors' variance and covariance. We observe a significant increase in the Chi-square statistic relative to the previous model of measurement invariance ($\Delta\chi^2= 21.09$; $\Delta d.f.= 8$; $p<0.05$), although the other indicators show good fit (CFI= 0.985; GFI= 0.971; RMSEA= 0.039). The CFI indicator does not worsen significantly relative to either the measurement invariance model (ΔCFI= 0.001<0.01 proposed by Cheung and Rensvold, 2002) or the unconstrained model (ΔCFI= 0.004<0.01). We can thus accept invariance of the variance and covariance matrices for the factors.

Finally, we can accept the equivalence of the measurement errors since, despite a significant increase in the Chi-statistic relative to the previous model ($\Delta\chi^2$= 61.5; Δd.f.= 19; p<0.05), the other indicators continue to show good fit (CFI= 0.975; GFI= 0.962; RMSEA= 0.045) and the CFI indicator does not worsen significantly relative to the model of structural covariances (ΔCFI is 0.01, coinciding with the limit proposed by Cheung and Rensvold, 2002). Having completed the analysis of measurement invariance, we can confirm that the results provide evidence of measurement invariance and permit use of the data in the samples to contrast the hypotheses proposed (Steenkamp and Baumgartner, 1998).

For Submodel 2, which analyses the moderating effect of PL naming, we compare the group of retail chains for Mercadona, Alcampo and Simply (with stand-alone name for PLs) to those of Carrefour and Eroski (with store-banner name for PLs). We calculate multi-group confirmatory factor analysis for the model, considering both subsamples simultaneously. The results obtained are satisfactory (χ2/d.f.= 2.10; CFI= 0.990; GFI= 0.976; RMSEA= 0.042), confirming that the factor structure of the variables is equivalent in the different samples. Second, we impose the equality constraint for the factor loadings of the samples and compare the results of the constrained model's goodness of fit to those of the unconstrained model ($\Delta\chi$2= 10.21; Δd.f.= 6; p= 0.12>0.05). As no significant worsening of the model is observed, the results guarantee fulfilment of measurement invariance.

We then contrast equivalence of factor variance and covariance. No significant increase is observed in the Chi-square relative to the previous model of measurement invariance ($\Delta\chi^2$ = 10.00; Δd.f.= 6; p= 0.13>0.05), enabling us to accept invariance of the factor variance and covariance matrices. Finally, we can accept equivalence of the measurement errors, since, despite a significant increase in the Chi-square relative to the covariance structural model ($\Delta\chi^2$= 39.15; Δd.f.= 15; p<0.05), the other indicators continue to indicate good fit (CFI= 0.840; GFI= 0.821; RMSEA= 0.08) and the CFI indicator does not worsen significantly relative to the structural covariance model (ΔCFI= 0.004<0.01 proposed by Cheung and Rensvold, 2002). The completed analysis of measurement invariance enables us to confirm that measurement invariance is fulfilled, permitting use of the data from the samples to contrast the hypotheses proposed (Steenkamp and Baumgartner, 1998).

4.1.3. Common method bias

When scores are obtained from a single source in cross-sectional designs, common method bias may pose a risk to the validity of the results. We tested for common method bias by adding a common latent factor to the measurement model that was connected to all observed items (Podsakoff *et al*., 2003). In this test, a significantly better fit for the measurement model with a common latent factor model indicates the presence of method bias (Anselmsson *et al*., 2017). Results showed that the fit for the model with a common latent factor (χ2= 1294.436; d.f.= 146, TLI= 0.828, CFI= 0.867, RMSEA= 0.111) was not significantly better than the fit for the measurement model in the study (χ2= 246.913, d.f.= 136, TLI= 0.982, CFI= 0.987, RMSEA= 0.036), supporting the conclusion that common method bias did not pose a threat to the validity of the model.

4.2 Causal relationship model

The model in Figure 1 is estimated using structural equations, initially for the set of retail chains without including the moderating effect. The fit obtained is satisfactory (χ2= 255.38; d.f.= 142; χ2/d.f.= 1.80; CFI = 0.986; GFI= 0.961; AGFI= 0.943; NFI= 0.969; IFI= 0.986; RMSEA= 0.035), confirming all of the relationships proposed (Figure 2). For Hypothesis 1, which establishes that PL awareness increases PL loyalty, we obtain a positive and significant coefficient (β=0.32), confirming H_1. We also confirm the indirect effect of PL awareness on PL brand equity through PL loyalty (β= 0.32*0.73= 0.23). Hypothesis 2, which predicts a positive and direct relationship between PL associations and PL loyalty, is also confirmed (β= 0.64), as is the indirect effect of PL associations on PL brand equity (β= 0.64*0.73= 0.47). Finally, Hypothesis 3, which establishes that PL brand equity increases store loyalty, is confirmed, since we obtain a positive and significant coefficient (β= 0.43).

Figure 2 here

Next, as to Hypotheses 4 and 5, we consider the moderating effects and perform two multi-group structural analyses for the different retail chains/groups of retail chains according to their PL tier strategies and PL naming strategies. We estimate two partial models to confirm Hypotheses 4 and 5. The first submodel evaluates the moderating effect of PL tier in the formation of PL loyalty. We compare the retail chain Mercadona, with a single PL tier (standard PL), to the group of retail chains composed of Alcampo, Simply, Carrefour and Eroski, all three of which have three PL tiers (economy, standard and premium PLs).

We perform *inter-group* comparison for the roles of PL awareness and PL associations in the formation of PL loyalty. First, we estimate the initial unconstrained model and the other model, imposing the equality of parameters constraint for the relationship of PL awareness to PL loyalty in the group with Mercadona vs. the group with Alcampo, Simply, Carrefour and Eroski. The results produce no significant worsening of the model when the equality of parameters constraint is imposed on both groups for the relationship of PL awareness to PL loyalty ($\Delta\chi^2 = 1.04$; $\Delta d.f.= 1$; $p\geq0.10$). For the relationship of PL associations to PL loyalty, however, fit worsens significantly between the two groups when the equality of parameters constraint is imposed ($\Delta\chi^2 = 3.33$; $\Delta d.f.= 1$; $p<0.10$). Note that the model does not worsen significantly when the equality of parameters constraint is imposed on both groups for the relationship of PL loyalty to PL brand equity ($\Delta\chi^2 = 0.05$; $\Delta d.f.= 1$; $p\geq0.10$).

We also perform intra-group analysis of the relationships of PL awareness and PL associations to the formation of PL loyalty. For Mercadona, estimation of the unconstrained model shows a similar effect of both antecedents on PL loyalty. For the group composed of Alcampo, Simply, Carrefour and Eroski, we observe statistically significant differences in favour of the relationship of PL associations to PL loyalty.

The second submodel evaluates the moderating effect of PL naming in the relationship of PL brand equity to store loyalty for the retail chains or groups of retail chains. We distinguish between the store-banner name group (Carrefour and Eroski) and the stand-alone brand name group (Alcampo, Simply and Mercadona). Again, for this submodel, we compare the results of the first model without the equality of parameters constraint for these parameters to those of the second model, on which the equality constraint is imposed for these parameters. For this relationship, the results of goodness of fit show significant worsening of the model when the equality constraints are imposed on the structural relationships ($\Delta\chi^2 = 6.26$; $\Delta d.f. = 2$; $p=0.044<0.05$). This result demonstrates the moderating effect of PL naming strategies in the proposed model, confirming Hypothesis 5. The relationship between PL brand equity and store loyalty is significantly more intense in the group with store-banner branding for PLs (Carrefour and Eroski) than in the group with stand-alone branding for PLs (Mercadona, Alcampo and Simply) ($\beta= 0.44$ in the first group vs. $\beta= 0.30$ in the second group). The results thus seem to indicate that using the store name for PLs strengthens the positive influence of PL brand equity on store loyalty.

Figure 3 shows the parameters for each of the groups analysed (Submodel 1, which analyses PL tier strategy, and Submodel 2, which analyses PL naming strategy). Figure 4 shows a partial moderating effect of PL tier strategy in the relationships of PL awareness and PL associations to PL loyalty, partially confirming H_4. On the one hand, the results show that the influence of PL awareness on PL loyalty is significantly the same in the group with the three-tier PL programme (Alcampo, Simply, Carrefour and Eroski), as in the group with the standard PL portfolio (Mercadona) ($\beta= 0.42$ in the first group vs. $\beta=0.31$ in the second group). On the other hand, the results show a statistically higher effect of PL associations on PL loyalty in the group with the three-tier PL programme (Alcampo, Simply, Carrefour and Eroski) than in the group with the standard PL portfolio (Mercadona) ($\beta= 0.44$ in the first group vs. $\beta= 0.64$ in the second group). This result suggests that the three-tier PL portfolios strengthen the positive effect of PL associations on PL loyalty. This finding supports the advisability of building a highly differentiated PL image for the three levels of quality in retail chains with multi-tier PL portfolios, as PL associations is a key antecedent for achieving PL loyalty in retail chains that use this PL image strategy.

Figure 3 here

Table 7 shows the critical ratios obtained for the possible moderating effects analysed in the causal relationships. These ratios are obtained using a t-test based on the expression t= (bi–bj)/square root (Si^2 + Sj^2), in which bi and bj represent the coefficients to be contrasted and Si and Sj their respective standard errors (Hair *et al*., 2006), to calculate statistical significance of the differences between parameters. In sum, the results obtained partially confirm the moderating effect of PL tier strategy on the relationship of PL awareness and PL associations to PL loyalty (H_4) in chains that commercialise three-tier PLs (economy, standard and premium) vs. a single standard PL. We also confirm the moderating effect of PL naming strategy on the relationship between PL brand equity and store loyalty (H_5).

Table 7 here

5. Conclusions and implications

This study has analysed the building of PL brand equity and its effect on store loyalty, considering two strategic decisions of great significance for stores: segmentation strategy for their PL portfolios and choice of name for their PLs. These store decisions condition customers' preferences and purchasing behaviour, and thus customers' relationship to the retail chain.

5.1 Theoretical implications

Contention exists in the literature as to how PL brand equity dimensions are related to each other (Girard *et al*., 2017). Some studies argue that these dimensions are independent (Calvo-Porral and Levy-Mangin, 2014), while others contrast structural relationships of varying types and importance among the dimensions of PL brand equity (Girard *et al*., 2016). The first theoretical implication of this study confirms a conceptual framework that provides evidence of the structural relationships established among the dimensions of PL brand equity. This study also enriches prior studies of PL brand equity based on Aaker (1991) by incorporating in the modelling the moderating role of the retailer's PL tier and naming strategies.

First, the results confirm that the theoretical models related to the dimensions and formation of brand equity proposed by Aaker (1991) are appropriate to explain the construction of PL brand equity in PL portfolios with different levels of segmentation and name branding strategy. This study represents a relevant and original advance over prior research that uses the model of brand equity by Aaker (1991) to study PL brand equity (e.g., Calvo-Porral and Lévy-Mangin, 2014) because prior studies consider PLs globally. These earlier studies' theoretical approaches and empirical analysis do not consider the effect of the different PL tier and PL naming strategies that retailers currently use in their PL portfolios.

Second, another line of research considers the different PL tier strategies but focuses on either the effects of the vertical and horizontal extensions of PLs on the business results (e.g., sales) or the effect of economy and premium PL tiers on perceptions of standard PL quality (Gonzalez-Benito and Martos-Partal, 2014). As this line does not consider the effect of different PL tier strategies on the PL loyalty formation, our study makes original theoretical contributions.

The theoretical model proposed and confirmation of the causal relationships suggest that PL loyalty formation depends on whether the PL portfolio consists of a single standard PL or the standard PL is commercialised with economy and premium PLs. The awareness and associations of the PLs in the portfolio have a positive effect on PL loyalty, an important antecedent of PL brand equity. When consumers are aware of the PL portfolio and this portfolio generates favourable and unique associations for them, they show loyalty to the PLs, which generates PL brand equity. The procedure by which PL loyalty is built is not the same for chains with a single standard PL and chains with different PL tiers (economy, standard and premium). The impact of PL awareness on PL loyalty is similar in portfolios with a standard PL and portfolios with economy, standard and premium PLs. However, the effect of PL associations on PL loyalty

is significantly higher in portfolios with economy, standard and premium PLs than in portfolios with a standard PL. PL loyalty is an equally significant antecedent of PL brand equity for portfolios with both single PL and multi-tier portfolios.

Prior scholarly research indicates that multi-tier PLs can be considered successful when consumers really notice the differences between the PL tiers (Nenyc-Thiel and Romaniuk, 2011; Palmeira and Thomas, 2011). When analysing the coexistence of different PL tiers, however, authors such as Geyskens *et al*. (2010) find cannibalization of existing PL offerings justified by the possible effect of "brand strength dilution through quality" when differences among the PL tiers are not perceived. Along this line, other researchers, such as González-Benito *et al*. (2015), find consumers' perceptual differences between economy and other PLs but not between standard PLs and premium PLs (González-Benito *et al*., 2015). The present study suggests that the effect of favourable and unique associations with the PLs on PL loyalty is higher in multi-tier PL portfolios than in standard PL portfolios, but, it is necessary that consumers begin to notice the differences among PL tiers.

We then performed a comparative analysis of retail chains that apply store-banner name branding vs. retail chains that opt for a stand-alone brand name for their PLs. The results show that the positive effect of PL brand equity on store loyalty is strengthened when the store name is used as an umbrella brand. Consumers perceive a certain congruency between the store and the brands the retailer commercialises under its name (Lee and Hyman, 2008). If the store enjoys a positive commercial reputation and image, the favourable perceptions of its management translate to its own brands (Calvo-Porral and Levy-Mangin, 2014), encouraging customer loyalty. Further, the result is consistent with prior studies that show more favourable perceptions of PLs when store-banner PL naming is used to improve the store's results than when stand-alone brand names are used for PLs (Erdem and Chang, 2012; Nenycz-Thiel and Romaniuk, 2011; Nenycz-Thiel and Romaniuk, 2015). For PLs that enjoy brand equity, therefore, the positive influence of PL brand equity on store loyalty is more intense when the PLs share the retailer's name.

5.2 Managerial implications

Our results provide some useful insights for retailers. Retailers with a standard PL that have achieved PL brand equity could consider introducing premium and economy PL tiers to strengthen the effect of their PL image on their PL brand equity. Still, implementing a multi-tier PL portfolio—currently a trend in retailers in the Spanish market—requires a significant effort from chains in generating the different associations of the tiers (economical pricing, value for money, quality), identifying each tier clearly with its respective positioning. Using different types of packaging (for example, colours) serves retailers as an instrument to highlight the positioning of each of their PL tiers. In-store promotions can be useful to mark the positioning of each tier clearly (Rubio *et al*., 2014), as can in-store communications (through signage, space allocated to each PL tier etc.) (Abril and Rodriguez-Canovas, 2016).

The effect of PL associations on PL loyalty is significantly higher in multi-tier PL portfolios than in standard PL portfolios. Further, in multi-tier PL portfolios, the effect of PL associations on PL loyalty is significantly higher than is the effect of PL awareness. Once clear positioning is constructed for each tier, multi-tier PLs portfolios require retailers to make a significant communication effort so that consumers perceive the different value propositions of each PL tier. Only so can economy, standard and premium PL portfolios benefit from the positive effects that variety of PL offerings can have on demand. The main risk of multi-tiers PL portfolios lies in "brand strength dilution through quality variation" (Geyskens *et al*., 2010) and cannibalization of existing PL offerings when the consumer does not perceive differences between the PL tiers. Specific examples for communicating the positioning of the different PL tiers could be advertising campaigns for quality of the premium PL or for the low price of the economy PL. Currently, it is not common for retail chains to perform separate communication for their different PL tiers. When they do, their main goal is to generate awareness that they are introducing a new tier on the market. For example, competitors such as Día, which recently introduced the premium PL Delicious, show TV advertisements to make the brand known, but it would require greater investment in communication over time to consolidate

the positioning of the different PL tiers that compose the retail chain's portfolio. Another option is to include specific sections for the premium, standard and economy PLs in the advertising brochures of these retail chains, such as their webpages. By differentiating their communication about PL tiers, retailers will enable consumers to distinguish them better and associate unique traits with each. An exclusive communication strategy for each PL tier, adapted to the needs of the different segments of their consumers, will strengthen the associations of the chain's PLs and ultimately consumers' loyalty.

To date, communication of PLs of the different Spanish retail chains has consisted primarily of exploiting the economies of scope encouraged by the presence of their own brands throughout the store. Although these economies of scope have consolidated a perception of PLs as brands with a positive price/quality ratio for retail chains with a standard PL, economies of scope are not sufficient for retail chains that choose a multi-tier PL strategy.

On the other hand, retailers should tackle the fundamental decision of whether or not to use the store-banner name for their own brands. This decision is not easy and has significant repercussions for business results, primarily in the case of standard PLs (the largest tier for most retailers) and premium PLs (which have greater growth). For PLs that enjoy brand equity, whether a standard PL or a strategy of economy PL, standard PL, or premium PL, we recommend that retailers use the strategy of store-banner name for their PLs, since the effectiveness of PL brand equity in increasing loyalty to the commercial chain is considerably higher among retailers whose retail chain shares its name with their own brands. Since the store name is linked to its PLs, we recommend that retailers that use the same name as the retail chain for their PLs cultivate and invest in their reputation or corporate identity to reap maximum advantage from the positive effect of brand equity achieved by their PLs in loyalty to the retail chain. One advantage identified with this strategy is that PLs identified with the store through their name achieve important economies of scope and clear identification, factors that reduce the retailer's need to perform specific communication and advertising campaigns for these brands. One disadvantage is that using a PL strategy connected to the store obligates the retailer to maintain the same level of quality and price/quality ratio between product categories and/or products that share the same brand name, since both negative and positive associations are transferred. If the retail chains enjoy a widely recognized corporate image but their PLs do not share the store name, it is advisable for either the communications media or even the retail chain itself to stress that these PLs belong to the retail chain in order to relate the different PLs to each other and connect them to the retail chain. This tactic is used by Alcampo and Simply to relate their PLs since, despite having a different PL name for each of the different PL tiers, all of the PLs share the "bird" and the brand of the group Auchan on the packaging.

This study has its limitations, which could be taken into account for future research. On the one hand, the study includes neither examples of retailers that commercialise only a standard PL with the store-banner name strategy, nor examples of retailers that combine a single tier for some product categories with three tiers for others. The data obtained refer to Spain's consumer market. It is advisable to analyse other countries, sectors and distributors. It would also be interesting to investigate other possible consequences of retail strategies, such as identification with the retailer or customer experience in the commercial chain's stores (in addition to loyalty), and to consider other antecedents (such as the store's commercial image), which may enrich explanation of how PL equity is built. Including new moderating variables (e.g., product category) that strengthen or decrease the intensity of the relationships proposed could also yield important implications for management.

6. References

Aaker, D.A. (1991), *Managing Brand Equity*, New York: Free Press.

Abril, C. and Rodríguez-Cánovas, B. (2016), "Marketing mix effects on private labels brand equity", *European Journal of Management and Business Economics*, Vol 25 No 3, pp. 168-175.

Ailawadi, K.L., Neslin, S.A. and Gedenk, K. (2001), "Pursuing the value-conscious consumer: store brands versus national brand promotions", *Journal of Marketing*, Vol. 65 No.1, pp.71-89.

Ailawadi, K.L. and Harlam, B. (2004), "An empirical analysis of the determinants of retail margins: the role of store-brand share", *Journal of Marketing*, Vol. 68 No.1, pp.147-165.

Anselmsson, J., Burt, S. and Tunca, B. (2017), "An integrated retailer image and brand equity framework: Re-examining, extending, and restructuring retailer brand equity". *Journal of Retailing and Consumer Services*, Vol. 38, pp. 194-203.

Apelbaum, E., Gerstner, E. and Naik, P.A. (2003), "The effects of expert quality evaluations versus brand name on price premiums". *Journal of Product & Brand Management*, Vol 12 No. 3, pp. 154-165.

Bao, Y., Bao, Y. and Sheng, S. (2011), "Motivating purchase of private brands: Effects of store image, product signatureness, and quality variation", *Journal of Business Research*, Vol. 64 No. 2, pp. 220-226.

Beldona, S. and Wysong, S. (2007), "Putting the "brand" back into store brands: an exploratory examination of store brands and brand personality", *Journal of Product & Brand Management*, Vol. 16 No.4, pp. 226-235.

Beristain, J. and Zorrilla, P. (2011), "The relationship between store image and store brand equity: a conceptual framework and evidence from hypermarkets", *Journal of Retailing and Consumer Services,* Vol. 18 No.6, pp. 562-574.

Bigné, E., Borredá, A. and Miquel, M. J. (2013), "El valor del establecimiento y su relación con la imagen de marca privada: efecto moderador del conocimiento de la marca privada como oferta propia del establecimiento", *Revista Europea de Dirección y Economía de la Empresa*, Vol. 22 No. 1, pp. 1-10.

Byrne, B.M. (2013), *Structural equation modelling with Mplus: Basic concepts, applications, and programming*, Routledge.

Calvo-Porral, C. and Lang, M.F. (2015), "Private labels: The role of manufacturer identification, brand loyalty and image on purchase intention", *British Food Journal,* Vol. 117 No 2, pp. 506-522.

Calvo-Porral, C. and Levy-Mangin, J.P. (2014), "Private label brands: major perspective of two customer-based brand equity models", *The International Review of Retail, Distribution and Consumer Research*, Vol. 24 No. 4, pp. 431-452.

Calvo-Porral, C., Martinez-Fernandez, V.A., Juanatey-Boga, O. and Lévy-Mangín, J.P. (2013), "What matters to store brand equity? An approach to Spanish large retailing in a downturn context", *Investigaciones Europeas de Dirección y Economía de la Empresa*, Vol. 19 No. 3, pp. 136-146.

Cheung, G.W. and Rensvold, R.B. (2002), "Evaluating goodness-of-fit indexes for testing measurement invariance", *Structural Equation Modelling*, Vol. 9 No. 2, pp. 233-255.

Choi, L. and Huddleston, P. (2014), "The effect of retailer private brands on consumer-based retailer equity: Comparison of named private brands and generic private brands", *The International Review of Retail, Distribution and Consumer Research*, Vol 24 No. 1, pp. 59-78.

Cotterill, R.W., Putsis, W.P. and Dhar, R. (2000), "Assessing the competitive interaction between private store banners and national brands", *Journal of Business Research*, Vol 73 No. 1, pp. 109-137.

Cuneo, A., Lopez, P. and Yagüe, M. J. (2012), "Measuring private store banners brand equity: a consumer perspective", *European Journal of Marketing,* Vol. 46 No. 7/8, pp. 952-964.

De Wulf, K., Odekerken-Schröder, G., Goedertier, F. and Ossel, G.V. (2005), "Consumer perceptions of store brands versus national brands", *The Journal of Consumer Marketing,* Vol. 22 No. 4, pp. 223-232.

Diallo, M.F. (2012), "Effects of store image and store brand price-image on store brand purchase intention: Application to an emerging market". *Journal of Retailing and Consumer Services*, Vol. 19 No. 3, pp. 360-367.

Diallo, M.F., Chandon, J.L., Cliquet, G. and Philippe, J. (2013), "Factors influencing consumer behaviour towards store brands: evidence from the French market", *International Journal of Retail & Distribution Management*, Vol. 41 No. 6, pp. 422-441.

Erdem, T. and Chang, S.R. (2012), "A cross-category and cross-country analysis of umbrella branding for national and store brands", *Journal of the Academy of Marketing Science*, Vol. 40 No. 1, pp. 86-101.

Erdem, T., Zhao, Y. and Valenzuela, A. (2004), "Performance of store brands: A cross-country analysis of consumer store-brand preferences, perceptions, and risk", *Journal of Marketing Research*, Vol. 41 No. 1, pp. 86-100.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Fornerino, M. and d'Hauteville, F. (2010), "How good does it taste? Is it the product or the brand? A contribution to brand equity evaluation", *Journal of Product & Brand Management*, Vol. 19 No. 1, pp. 34-43.

Garretson, J.A., Fisher, D. and Burton, S. (2002), "Antecedents of private store banner attitude and national brand promotion attitude: similarities and differences", *Journal of Retailing*, Vol. 78 No. 2, pp. 91-99.

Geyskens, I., Gielens, K. and Gijsbrechts, E. (2010), "Proliferating private-store banner portfolios: how introducing economy and premium private store banners influences brand choice", *Journal of Marketing Research*, Vol. *47* No. 5, pp. 791-807.

Geyskens, I., Keller, K.O., Dekimpe, M.G. and De Jong, K. (2018), "How to brand your private store banners", *Business Horizons*, https://doi.org/10.1016/j.bushor.2018.01.015.

Gielens, K. (2012), "New products: The antidote to private store banner growth?", *Journal of Marketing Research*, Vol. 49 No. 3, pp. 408-423.

Gil-Saura, I., Ruiz-Molina, M.E., Michel, G. and Corraliza-Zapata, A. (2013), "Retail brand equity: A model based on its dimensions and effects", *The International Review of Retail, Distribution and Consumer Research*, Vol. 23 No. 2, pp. 111-136.

 Girard, T., Trapp, P., Pinar, M., Gulsoy, T. and Boyt, T.E. (2017), "Consumer-based brand equity of a private-label brand: Measuring and examining determinants", *Journal of Marketing Theory and Practice*, Vol. *25* No. 1, pp. 39-56.

González-Benito, Ó. and Martos-Partal, M. (2012), "Role of retailer positioning and product category on the relationship between store brand consumption and store loyalty", *Journal of Retailing*, Vol. 88 No. 2, pp. 236-249.

González-Benito, Ó. and Martos-Partal, M. (2014), "Efectos de la extensión de marca de distribuidor en el eje calidad-precio", *Universia Business Review*, Vol. 41, pp. 60-78.

González-Benito, Ó., Martos-Partal, M. and Fustinoni-Venturini, M. (2015), "Brand equity and store brand tiers: an analysis based on an experimental design", *International Journal of Market Research*, Vol *57* No. 1, pp. 73-94.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R. L. (2006), *Multivariate Data Analysis,* Upper Saddle River, NJ: Prentice Hall.

Hartman, K.B. and Spiro, R.L. (2005), "Recapturing store image in customer-based store equity: a construct conceptualization", *Journal of Business Research*, Vol. 58 No. 8, pp. 1112-1120.

Jara, M. and Cliquet, G. (2012), "Retail brand equity: conceptualization and measurement", *Journal of Retailing and Consumer Services*, Vol. 19 No. 1, pp. 140-149.

Jinfeng, W. and Zhilong, T. (2009), "The impact of selected store image dimensions on retailer equity: Evidence from 10 Chinese hypermarkets", *Journal of Retailing and Consumer Services*, Vol. 16 No.6, pp. 486-494.

Juhl, H.J., Esbjerg, L., Grunert, K.G., Bech-Larsen, T. and Brunsø, K. (2006), "The fight between store brands and national brands—What's the score?", *Journal of Retailing and Consumer Services*, Vol. 13 No. 5, pp. 331-338.

Kantar Worldpanel (2016), "Balance Gran Consumo 2016", available at: https://www.kantarworldpanel.com/es/grocery-market-share/spain, (accessed 15 March, 2018).

Keller, K.L. (1993), "Conceptualizing, measuring, and managing customer-based brand equity", *Journal of Marketing*, Vol. 57 No. 1, pp.1-22.

Keller, K.O., Dekimpe, M.G. and Geyskens, I. (2016), "Let your banner wave? Antecedents and performance implications of retailers' private-store banner branding strategies", *Journal of Marketing*, Vol. 80 No. 7, pp. 1-19.

Koschate-Fischer, N., Cramer, J. and Hoyer, W. D. (2014), "Moderating effects of the relationship between private store banner share and store loyalty", *Journal of Marketing*, Vol. 78 (March), pp. 69-82.

Lassar, W., Mittal, B. and Sharma, A. (1995), "Measuring customer-based brand equity", *Journal of Consumer Marketing*, Vol. 12 No. 4, pp. 11-19.

Lee, D. and Hyman, M.R. (2008), "Hedonic/functional congruity between stores and private label brands", *Journal of Marketing Theory and Practice*, Vol. 16 No. 3, pp. 219-232.

Liljander, V., Polsa, P. and Van Riel, A. (2009), "Modelling consumer responses to an apparel store brand: Store image as a risk reducer", *Journal of Retailing and Consumer Services*, Vol. 16 No. 4, pp. 281-290.

Martenson, R. (2007), "Corporate brand image, satisfaction and store loyalty: a study of the store as a brand, store brands and manufacturer brands", *International Journal of Retailing Distribution Management,* Vol. 35 No. 7, pp. 544-555.

Martínez, E. and Montaner, T. (2004), "Caracterización de los compradores de marca de distribuidor", *Decisiones de Marketing,* Available at https://dialnet.unirioja.es/descarga/articulo/2486874.pdf..

Martos-Partal, M. and González-Benito, Ó. (2011), "Store brand and store loyalty: The moderating role of store brand positioning", *Marketing Letters*, Vol. 22 No.3, pp. 297-313.

Méndez, J. L., Oubina, J. and Rubio, N. (2008), "Expert quality evaluation and price of store vs. manufacturer brands: An analysis of the Spanish mass market", *Journal of Retailing and Consumer Services*, Vol. 15 No. 3, 144-155.

Molinillo, S., Ekinci, Y. and Japutra, A. (2015), "A cross validation of consumer-based brand equity (CBBE) with private store banners in Spain", In *Advances in national brand and private store banner marketing proceedings of the NB&PL Conference, Barcelona, 2015*, Springer, pp.113-125.

Nenycz-Thiel, M. and Romaniuk J. (2011), "The nature and incidence of private label rejection.", *Australasian Marketing Journal* (AMJ), Vol. 19 No. 2, pp. 93-99.

Nenycz-Thiel, M. and Romaniuk, J. (2015), "Buying of private labels across categories: How far is too far?", In *Advances in national brand and private store banner marketing proceedings of the NB&PL Conference*, Barcelona, 2015, Springer, pp. 35-42.

Nielsen (2016), " the state of private label around the world", available at https://www.nielsen.com/be/en/insights/reports.html?tag=Category%3AFMCG+and+Retail&pageNum=1 (accessed 27 December 2018).

Nielsen (2017), "las marcas de los productos premium crecen un 6%, el doble que los tradicionales", available at: https://www.nielsen.com/es/es/press-room/2017/sales-of-premium-products.html (accessed 12 June 2018).

Oliver, R. L. (1999), "Whence consumer loyalty?", *The Journal of Marketing*, Vol. 63 Special Issue, pp. 33-44.

Palmeira, M.M. and Thomas, D. (2011), "Two-tier store brands: the benefic impact of a value brand on perceptions of a premium brand", *Journal of Retailing*, Vol. 87 No. 4, pp. 540-548.

Pappu, R., Quester, P.G. and Cooksey, R.W. (2005), "Consumer-based brand equity: improving the measurement–empirical evidence", *Journal of Product & Brand Management*, Vol. 14 No. 3, pp. 143-154.

Pepe, M.S., Abratt, R. and Dion, P. (2011), "The impact of private label brands on customer loyalty and product category profitability", *Journal of Product & Brand Management*, Vol. 20 No. 1, pp. 27-36.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: A critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No.5, pp. 879.

PLMA (2017), "La marca de distribuidor hoy en día", available at: https://www.plmainternational.com/ (accessed 12 January 2018).

Richards, T., Yonezawa, K. and Winter, S. (2015), "Cross-category effects and private store banners", *European Review of Agricultural Economics*, Vol. 42 No. 2, pp. 187-216.

Richardson, P.S., Dick, A.S. and Jain, A. K. (1994), "Extrinsic and intrinsic cue effects on perceptions of store brand quality", *The Journal of Marketing*, Vol. 58 No. 4, pp. 28-36.

Rubio, N. and Yagüe, M.J. (2009), "Alternative panel models to evaluate the store brand market share: evidence from the Spanish market", *European Journal of Marketing*, Vol. 43 No. 1/2, pp. 110-138.

Rubio, N., Oubiña, J. and Villaseñor, N. (2014), "Brand awareness–brand quality inference and consumer's risk perception in store brands of food products", *Food Quality and Preference*, Vol. 32 No. C, pp. 289-298.

Rubio, N., Villaseñor, N. and Yagüe, M.J. (2017), "Creation of consumer loyalty and trust in the retailer through store brands: The moderating effect of choice of store brand name", *Journal of Retailing and Consumer Services*, Vol. 34, No. January, pp. 358-368.

Steenkamp, J.B.E. and Baumgartner, H. (1998), "Assessing measurement invariance in cross-national consumer research", *Journal of Consumer Research*, Vol 25 No. 1, pp. 78-90.

Sudhir, K. and Talukdar, D. (2004), "Does store brand patronage improve store patronage?", *Review of Industrial Organization.*, Vol 24 No. 2, pp. 143-160.

Vahie, A. and Paswan, A. (2006), "Private store banner brand image: its relationship with store image and national brand", *International Journal of Retail & Distribution Management*, Vol. 34 No. 1, pp. 67-84.

Wu, P.C., Yeh, G.Y.Y. and Hsiao, C.R. (2011), "The effect of store image and service quality on brand image and purchase intention for private label brands", *Australasian Marketing Journal (AMJ)*, Vol. 19 No.1, pp. 30-39.

Yoo, B., Donthu, N. and Lee, S. (2000), "An examination of selected marketing mix elements and brand equity", *Journal of the Academy of Marketing Science*, Vol. 28 No. 2, pp. 195-211.

Biographies

Natalia Rubio is a Professor of Marketing at Autónoma University of Madrid, Spain. She has published articles in well-known international journals indexed in Journal Citatio Report (JCR) and Scimago Journal Ranking (SJR), such as Food Quality and Preference; British Food Journal; Cyberpsychology, Behavior and Social Networking; European Journal of Marketing; International Journal of Market Research; International Review of Retail, Distribution and Consumer Research; Journal of Retailing and Consumer Services; Journal of Marketing Management and Journal of Product and Brand Management, among others.

Nieves Villaseñor Román is an Associate Professor of Marketing at the Autónoma University of Madrid, Spain. Her research interests are brand management, retailing and marketing research. She has articles in international journals such as Journal of Consumer Marketing, Complexity, Journal of Retailing and Consumer Services and International Journal of Retail and Distribution Management, among others. She has also published in prestigious Spanish journals and has also presented at several conferences, such as EIRASS and AEDEM, among others.

Maria Jesús Yague is a Professor of Marketing at the Autónoma University of Madrid, Spain. Her research interests are brand management, pricing strategies, retailing and tourism. Her publications include international journals such as European Journal of International Management, Journal of Destination Marketing and Management, Journal of Travel & Tourism Marketing, Journal of Retailing and Consumer Services, International Journal of Business Environment, International Journal of Market Research, International Journal of Hospitality Management, International Journal of Tourism Research, among others; She has also published in prestigious Spanish journals such as Información Comercial Española.

Figure 1. Theoretical framework
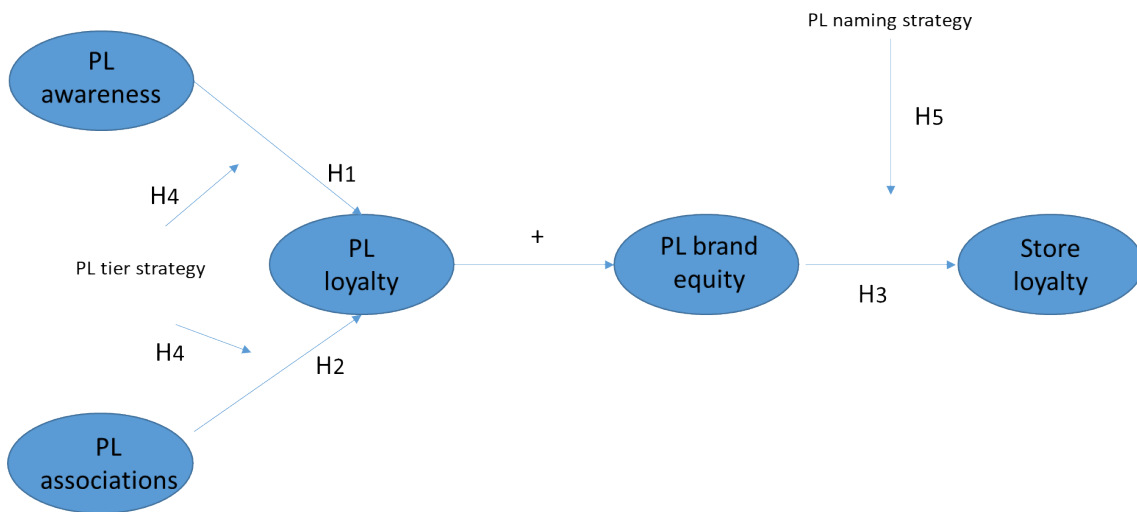
Note Figure 1. PLs: private labels

Figure 2. PL tier and PL naming strategies of the retail chains studied

Mercadona ("standard" PL program and stand-alone PL naming strategy)
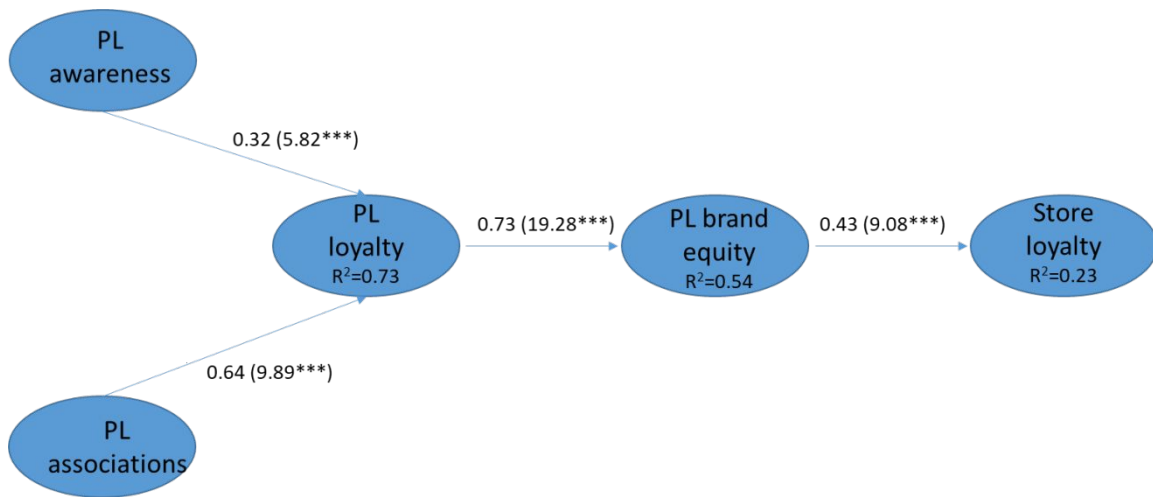

Alcampo and Simply ("economy, standard and premium" PL program and stand-alone PL naming strategy)

Carrefour and Eroski (*"*economy, standard and premium" PL program and store-banner PL naming strategy)
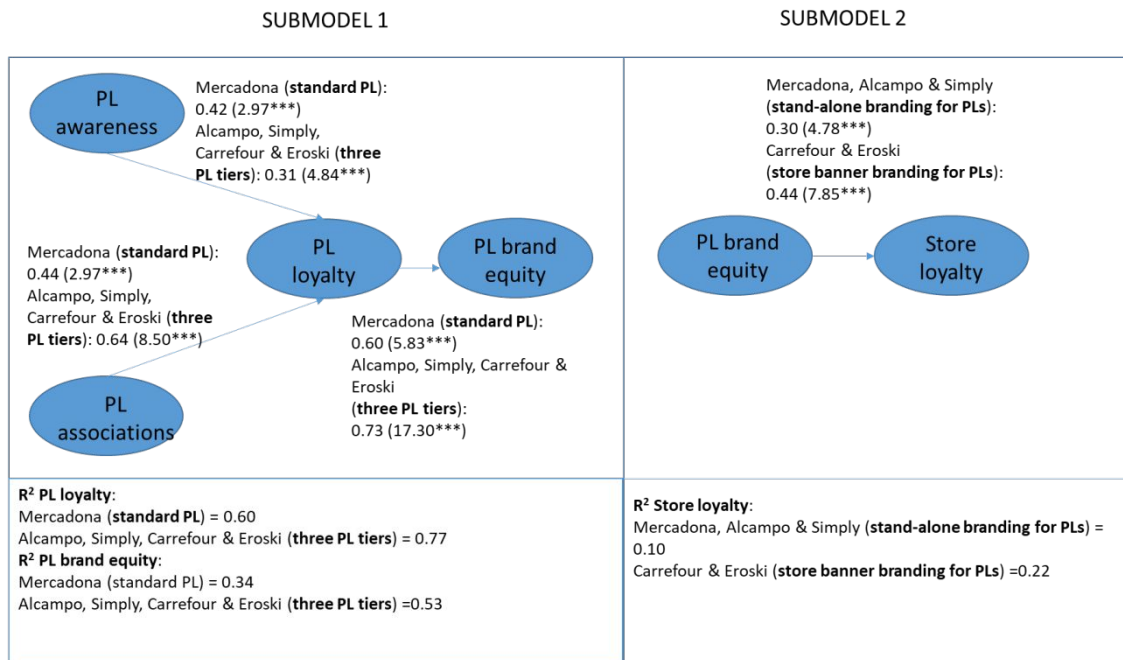

Figure 3. Estimation of the relationship model

Note Figure 3. PL: private label

Figure 4. Results of the multigroup analysis

Note Figure 4. PL: private label

Table 1. Profile of the sample analysed

Variable	Category	%
Gender	Male	26.55%
	Female	73.45%
Age	<20	3.50%
	21-40	51.35%
	41-60	32.75%
	>60	12.40%
Income level (€/month)	<1000	19.81%
	1001-2000	32.88%
	2001-3000	16.58%
	>3000	6.47%
	Don't know/No answer	24.26%
Education level	None	1.89%
	Primary education	26.58%
	Secondary education	38.95%
	University education	32.49%
Members in family unit	1-2	33.96%
	3	26.42%
	4	31%
	>4	8.62%
Purchase frequency	1-2 purchases/month	32.88%
	3-4 purchases/month	36.79%
	>4 purchases/month	30.33%
Monthly expenditure on shopping	<150€	11.73%
	151€-300€	36.39%
	301€-450€	26.55%
	>451€	25.33%

Table 2. Descriptive characteristics of the study variables in each group of retail chains, according to PL tier and PL naming strategies

Retail chain	Mercadona (94)	Auchan: Alcampo and Simply (185)	Carrefour: hyper and super formats (187)	Eroski: hyper and super formats (178)
PL tier strategy	Standard PL	Standard, economy and premium PLs	Standard, economy and premium PLs	Standard, economy and premium PLs
PL name strategy	Stand-alone branding	Stand-alone branding	Store-banner branding	Store-banner branding
Variables	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)
PL awareness	7.4 (1.3)	7.0 (1.4)	6.8 (1.3)	6.9 (1.4)
PL associations	7.2 (1.3)	6.5 (1.3)	6.4 (1.4)	6.6 (1.3)
PL loyalty	7.1 (1.5)	6.0 (1.8)	5.6 (1.8)	5.9 (1.8)
PL brand equity	6.8 (1.7)	5.9 (1.8)	6.0 (1.8)	6.2 (1.7)
Store loyalty	7.2 (1.4)	6.4 (1.5)	6.5 (1.4)	6.6 (1.4)

Note. S.D.: Standard deviation; PL: Private label

Table 3. PL tier strategy and PL naming strategy compared

		Retail chains
Submodel 1 (groups with different PL tier strategy)	**1 tier -standard-**	Mercadona
	3 tiers -economy, standard and premium-	Carrefour, Eroski, Alcampo, Simply
Submodel 2 (groups with different PL naming strategies)	**Store-banner name for PLs**	Carrefour and Eroski
	Stand-alone name for PLs	Mercadona, Alcampo and Simply

Table 4. Analysis of reliability and validity of measurement scales for the global model

			General			
	Li	Ei	Reliability		Validity	
			α	CR	AVE	CV
PL awareness						
PLAW1	0.73	0.47	0.82	0.80	0.58	t=17.70***
PLAW2	0.89	0.20				t=17.91***
PLAW3	0.63	0.60				t=…
PL associations						
PLASS1	0.70	0.50	0.88	0.87	0.57	t=…
PLASS2	0.76	0.43				t=18.07***
PLASS3	0.80	0.36				t=23.51***
PLASS4	0.77	0.40				t=19.73***
PLASS5	0.72	0.48				t=16.93***
PL loyalty						
PLLOY1	0.87	0.24	0.90	0.90	0.74	t=24.24***
PLLOY2	0.90	0.19				t=29.28***
PLLOY3	0.81	0.35				t=…
PL brand equity						
PLEQ1	0.90	0.18	0.91	0.91	0.78	t=26.83***
PLEQ2	0.93	0.13				t=35.43***
PLEQ3	0.80	0.36				t=…
Store loyalty						
SLOY1	0.70	0.51	0.88	0.87	0.53	t=16.37***
SLOY2	0.64	0.59				t=13.17***
SLOY3	0.71	0.49				t=16.64***
SLOY4	0.61	0.60				t=…
SLOY5	0.83	0.30				t=17.79***
SLOY6	0.84	0.20				t=20.40***

Note: Li: Standardized loading; Ei: Error variance**;** significance level: *** p< 0.001; α: Cronbach´s Alpha; CR: Composite Reliability; AVE: Average Variance Extracted; CV: Convergent Validity; PL: Private label

Table 5. Discriminant validity

	PL awareness	PL associations	PL loyalty	PL brand equity	Store loyalty
PL awareness	**0.76**				
PL associations	0.71	**0.75**			
PL loyalty	0.70	0.65	**0.86**		
PL brand equity	0.57	0.69	0.71	**0.88**	
Store loyalty	0.40	0.48	0.38	0.50	**0.73**

Note: Values on the diagonal correspond to the square root of the AVE in each construct. Values below the diagonal represent the correlations between pairs of constructs; PL: Private label.

Table 6. Fit indicators from the confirmatory analysis for the submodels analysed

		χ^2/d.f.	CFI	GFI	NFI	RMSEA
Submodel 1	Mercadona (standard PL program)	1.93	0.911	0.800	0.837	0.1
PL tier strategy	Alcampo, Simply, Carrefour and Eroski (economy, standard and premium PL program)	2.32	0.990	0.982	0.983	0.049
Submodel 2	Mercadona, Alcampo and Simply (stand-alone name for PLs)	2.5	0.985	0.970	0.976	0.07
PL naming strategy	Carrefour and Eroski (store-banner name for PLs)	1.00	0.991	0.991	0.993	0.003

Table 7. Critical ratio for differences between parameters

Submodel 1	PL awareness→PL loyalty	Mercadona versus Alcampo/Simply/Carrefour/Eroski	0.35(n.s.)
	PL associations→PL loyalty	Mercadona versus Alcampo/Simply/Carrefour/Eroski	1.90*
	PL loyalty→ PL brand equity	Mercadona versus Alcampo/Simply/Carrefour/Eroski	0.98(n.s)
	Mercadona	PL awareness → PL loyalty versus PL associations → PL loyalty	0.24(n.s.)
	Alcampo/Simply/Carrefour/Eroski	PL awareness → PL loyalty versus PL associations → PL loyalty	1.915*
Submodel 2	PL brand equity→Store loyalty	Mercadona/Alcampo/Simply versus Carrefour/Eroski	2.51**

Note: t= 1.67 for p<0.10; t= 1.96 for p<0.05 and t = 2.58 for p<0.01<, n.s.: non significative; PL: Private label

APPENDIX

Table 1. Variables used in the analysis

Variables
PL awareness PLAW1: You know the PLs of chain X very well. PLAW2: The PLs of chain X come to mind when you think of products for your shopping cart. PLAW3: You remember the logos/colours of chain X's PLs easily.
PL associations PLASS1: The PLs of chain X are the choices with the best price/quality ratio. PLASS2: The PLs of chain X are original/unique. PLASS3: You have a positive image of the PLs of chain X. PLASS4: The PLs of chain X provide products with the same quality as leading brands. PLASS5: The PLs of chain X provide products of excellent quality.
PL loyalty PBLOY1: You consider yourself a loyal consumer of the PLs of chain X. PBLOY2: The PLs of chain X are your first choice when shopping. PBLOY3: You recommend the PLs of chain X to friends and/or family.
PL brand equity PLEQ1: You prefer to buy the PLs of chain X even if another brand has the same characteristics. PLEQ2: You prefer to buy the PLs of chain X even if another brand offers the same value. PLEQ3: If there are no differences between the PLs of chain X and any other brand, it seems smart to buy the PLs of chain X.
Store loyalty SLOY1: When you buy a larger quantity of products, you do it at chain X. SLOY2: When chain X introduces innovations in its brands, you like to try them. SLOY3: When chain X introduces new products, you like to try them. SLOY4: When you spend more money shopping, you do it at chain X. SLOY5: Given your purchase experience, you will continue to shop at chain X for many years. SLOY6: Your next shop will certainly be at a store in chain X.

Note: PL:Private label