Nicole Koschate-Fischer, Johannes Cramer, & Wayne D. Hoyer

Moderating Effects of the Relationship Between Private Label Share and Store Loyalty

A key benefit of private labels for retailers is their potential to increase customers' store loyalty. However, previous research has not examined how this relationship varies across customers and situations. This study contributes to knowledge in this area by developing a conceptual framework that guides the investigation of the role of four moderating factors in strengthening the private label brand share–store loyalty link: (1) customers' price-oriented behavior, (2) degree of commoditization of the product category, (3) product category involvement, and (4) the retailer's price positioning. This article draws on a large-scale empirical study using a household panel and questionnaire data for 35 diverse fast-moving consumer goods product categories. The results of this study show that the relationship between private label share and store loyalty is more complex than previous research has suggested. Specifically, the private label brand share–store loyalty link is stronger for customers with high price-oriented behavior, retailers with a low price positioning, and product categories that are less commoditized and have relatively higher involvement.

Keywords: private labels, store loyalty, moderating effects, retail strategy, private label strategy

Currently, almost all major retailers in the fast-moving consumer goods (FMCG) industry carry private label brands in their portfolio (Geyskens, Gielens, and Gijsbrechts 2010). In previous decades, private labels have been able to capture significant market share in most Western economies. Globally, these brands generate approximately 15% of retail revenue in FMCG (Nielsen 2011). Consistent with the increasing managerial interest in the topic, academic research on private labels has grown significantly (for an overview, see Sethuraman 2009).

A key insight from previous private label research is that both customers and retailers can benefit from these brands. For customers, private labels can offer lower prices as well as quality levels that are often not far below those of national brands (*Consumer Reports* 2009; Pauwels and Srinivasan 2004). For retailers, in addition to higher margins and stronger negotiation power with national brand manufacturers, private label brands provide a positive impact of private label share on store loyalty (Ailawadi, Pauwels, and Steenkamp 2008; Corstjens and Lal 2000; González-Benito and Martos-Partal 2012; Martos-Partal and González-Benito 2011).

Most studies in this area have focused on the direct relationship between private label share and store loyalty. The key finding of this research is that the relationship between these two variables has an inverted U shape: private label share increases store loyalty up to a point, after which there is an incremental negative effect (Ailawadi, Pauwels, and Steenkamp 2008; González-Benito and Martos-Partal 2012). Ailawadi, Pauwels, and Steenkamp (2008, p. 28) conclude that "modeling differences across categories and consumers would complicate the model, but this is a fruitful area for further research." This indeed represents an important research gap, and studies are needed to investigate whether and how this relationship varies across contexts (González-Benito and Martos-Partal 2012).

In addition, we respond to Ailawadi, Pauwels, and Steenkamp's (2008, p. 28) call for further research to examine whether their findings "generalize to other countries and formats." This is important because the popularity and purchase of private labels varies across countries, which may affect the relationship between private label share and store loyalty. By conducting this study in a country different from that of previous research (i.e., Germany, which is one of the most important private label markets globally [Nielsen 2005]), we provide evidence regarding the generalizability of previous findings.

To address the first important research gap, we identified three main categories of variables that affect shopping behavior (Dunne, Lusch, and Carver 2013). We propose that the following categories will strengthen the positive part of the private label share–store loyalty relationship:

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1. Customer characteristics: Is the private label share–store loyalty link stronger for certain customers?
2. Product category characteristics: Within a retailer product portfolio, do certain product categories drive the private label share–store loyalty link?
3. Retailer characteristics: Is the relationship between private label share and store loyalty stronger for some types of retailers relative to others?

From a managerial perspective, these three questions represent the core issues that retailers face in the context of private label implementation. Answers to these questions will provide retailers with information regarding which customers are more critical to target with private label brands, which product categories retailers should use to gain store loyalty through private labels, and whether their retail format positioning is conducive to developing store loyalty through private label brands.

These three categories of influences drive the selection of our moderating variables. Within each category, we selected variables that have proven useful in expanding knowledge of private labels. Previous studies have made important contributions by primarily examining these variables in terms of main effects (e.g., Ailawadi, Pauwels, and Steenkamp 2008; Hansen, Singh, and Chintagunta 2006; Steenkamp, Van Heerde, and Geyskens 2010). However, it is important to examine these variables as moderators of the positive part of the private label share–store loyalty link. Applying these variables to this link could potentially provide useful insights into how this relationship can be strengthened across different situations, knowledge that would have both academic and managerial relevance. In so doing, our study makes four contributions.

First, we investigate whether targeting certain customers can strengthen the private label share–store loyalty link. As Ailawadi, Pauwels, and Steenkamp (2008) note, customer heterogeneity may exist in this relationship. For example, they find that price consciousness has a negative relationship with store loyalty, and quality consciousness and shopping enjoyment are negatively related to private label share for a retailer positioned on service. However, the authors use these consumer traits as control variables to explain either store loyalty or private label share but do not examine them in terms of their moderating effects on the private label share–store loyalty link.

A key customer characteristic that explains customers' attitudes toward private labels, private label shopping behavior, and private label share is price consciousness (Batra and Sinha 2000; Burton et al. 1998; Hansen, Singh, and Chintagunta 2006). Overall, private label brands tend to be priced significantly below national brands (Hansen, Singh, and Chintagunta 2006), so price-conscious consumers tend to have a more positive attitude toward private labels and have a higher private label share (see, e.g., Burton et al. 1998; Hansen, Singh, and Chintagunta 2006).

Therefore, a key question that has not been addressed is whether high price consciousness can strengthen the private label brand share–store loyalty link. In the current study, given that we derive this variable from panel data, we investigate the behavioral outcome of price consciousness: price-oriented behavior, which is the degree to which the customer pays a low price when selecting products. For retailers, these analyses are particularly useful in ensuring that private labels are effective with their specific customer base.

Our second contribution focuses on product category characteristics. We investigate whether certain product categories can more effectively strengthen the private label brand share–store loyalty link. Thus, we examine the moderating influence of two key product category variables: degree of commoditization and product category involvement.

We define "degree of commoditization" as the extent to which customers perceive products within a category as being equivalent (Steiner 1993). In highly commoditized product categories, customers view products within the category as being less differentiated (Steiner 1993), and the risk of choosing an unsatisfactory product is lower (Batra and Sinha 2000; Kapferer and Laurent 1985; Sinha and Batra 1999). This phenomenon has long been discussed as a major threat to national brand manufacturers (Glémet and Mira 1993). Previous research has recognized the importance of commoditization and its implications for the marketing discipline (e.g., Reimann, Schilke, and Thomas 2010; Steiner 1993). Studies have found that customers are willing to pay a price premium for national brands over private labels when there are perceived quality differences (Richardson, Jain, and Dick 1996; Steenkamp, Van Heerde, and Geyskens 2010). Moreover, Choi and Coughlan's (2006) study indicates that the private label positioning should depend on the degree of differentiation of the national brands in a product category.

Private label brands are more common and are more likely to be successful in highly commoditized product categories because there are few perceived differences between brands and because perceived risk is lower (Steenkamp, Van Heerde, and Geyskens 2010). However, private label research has yet to investigate the effect of commoditization, particularly in the context of the private label share–store loyalty relationship. Thus, an important question is whether a lower degree of commoditization leads to a stronger relationship.

The second product category characteristic that may help provide a deeper understanding of the private label share–store loyalty link is product category involvement, which refers to the perceived relevance of individual product categories to customers (Dholakia 1998; Kapferer and Laurent 1985; Mittal and Lee 1989; Steenkamp, Van Heerde, and Geyskens 2010; Zaichkowsky 1986). Previous research has found product category involvement to be a critical moderator of the decision-making process because information processing in high-involvement product categories tends to be more elaborate than in low-involvement product categories (Celsi and Olson 1988; Hoyer 1984). Product category involvement can also be an important moderator for influencing private label purchasing behavior. Steenkamp, Van Heerde, and Geyskens (2010) find that high-involvement customers are more sensitive to quality; therefore, product category involvement moderates the link between the national brand/private label quality gap and willingness to pay. Because research has found product

involvement to be an important moderator in the private label context, we investigate the possibility that this variable could add to knowledge on how to strengthen the private label–store loyalty link, an effect that has yet to be examined. It is possible that higher levels of product category involvement lead to a stronger impact of private label share on store loyalty.

As our third contribution, we examine retailer characteristics. Previous research has studied differences between retail formats; for example, Ailawadi, Pauwels, and Steenkamp (2008) find that influences on store loyalty and private label brand share differ between a service-oriented and a value-oriented retailer. Another retailer characteristic that has received considerable attention in previous research is the price positioning of a retailer, which refers to the level of average prices of products offered (Ailawadi, Pauwels, and Steenkamp 2008; González-Benito and Martos-Partal 2012). Private labels are an important element of a retailer's low price positioning and stimulate a price focus among customers (Cotterill, Putsis, and Dhar 2000; Hansen, Singh, and Chintagunta 2006). It is therefore critical to examine whether this strategy strengthens or weakens the private label share–store loyalty link. Martos-Partal and González-Benito (2011) and González-Benito and Martos-Partal (2012) provide important initial evidence that the relationship between private label share and store loyalty differs across retailers; however, the findings do not seem to be consistent across the two studies. On the one hand, Martos-Partal and González-Benito (2011) find that when private label brand positioning is more quality oriented, there is a stronger effect of private label brand loyalty on store loyalty. On the other hand, a subsequent study (González-Benito and Martos-Partal 2012) indicates that the relationship seems to be more positive for retailers with a low price positioning, which implies a low-price private label brand positioning because "[a] store brand strategy often aligns with a retailer's price-quality positioning" (González-Benito and Martos-Partal 2012, p. 3). Our study extends this work by providing further evidence on this issue and by examining the moderating effect of the retailer price positioning on the private label share–store loyalty link in a more comprehensive conceptual framework.

Furthermore, by investigating each of our moderating effects within this framework, we make our fourth contribution by examining the relative importance of these four moderators in influencing the private label share–store loyalty link. In other words, we question whether some of these moderators play a greater role than others in strengthening or weakening the private label share–store loyalty link. An examination of these relative effects contributes to the understanding of this link and also provides further important strategic guidance for retailers as to which factors are most critical in developing their private label strategy.

We empirically investigate our research questions by combining data from two sources. The first is a panel of 10,637 households that provided information on customers' private label share for 35 product categories and on store loyalty for most of the retailers in Germany over a two-year period. We also derived the retailers' price positioning and customers' price-oriented behavior from these data. However, the panel data do not provide information on the perceived product category characteristics. Therefore, we supplemented the household panel with a large-scale survey of 17,324 customers to measure the two product category characteristics (i.e., degree of commoditization and product category involvement). Thus, our study combines behavioral and perceptual measures. Furthermore, the broad selection of product categories, multiple retail formats, and large sample sizes enables us to draw generalizable inferences. This is consistent with Ailawadi, Pauwels, and Steenkamp's (2008) call for research to examine the private label share–store loyalty link in the context of other formats and countries (in our case, Germany).

Conceptual Framework and Definition of Constructs

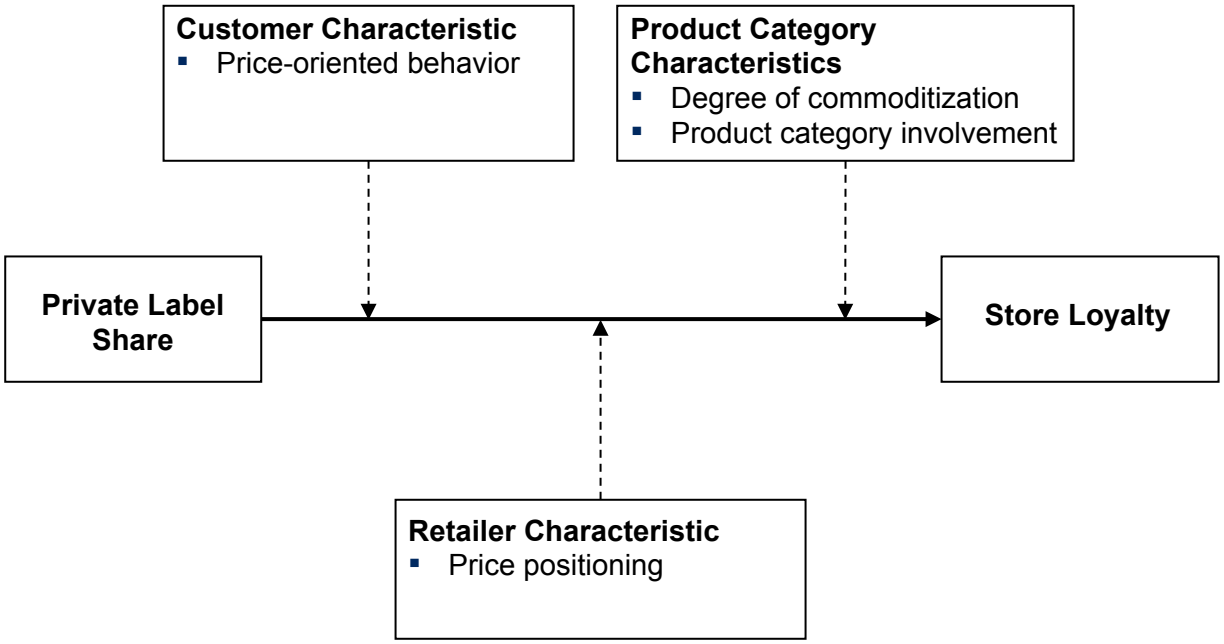
Figure 1 provides an overview of our framework for the relationship between private label share and store loyalty. In line with previous research (e.g., Ailawadi, Pauwels, and Steenkamp 2008), we define "private label share" as the value share of private labels in the shopping basket of a customer. Moreover, "store loyalty" is the "biased (i.e., nonrandom) behavioral response (i.e., revisit), expressed over time, by some decision making unit with respect to one store out of a set of stores" (Bloemer and De Ruyter 1998, p. 500). In the current study, store loyalty is reflected by share of wallet for a particular store (Ailawadi, Pauwels, and Steenkamp 2008).

Previous research has supported the main effect of private label share on store loyalty, which contains a positive linear and a negative quadratic effect (Ailawadi, Pauwels, and Steenkamp 2008; González-Benito and Martos-Partal 2012). This relationship is positive up to moderate levels of private label share, but there is an incremental negative effect at higher levels of private label share.

Two key mechanisms provide the theoretical reason for why a positive private label share–store loyalty link exists. The first centers on the customer's attitude toward the retailer's private labels. Previous research has found a positive relationship between customers' private label share and their attitude toward private labels (Burton et al. 1998). Furthermore, positive attitudes toward individual products can result in attitude transfers toward the parent company (Chapman and Aylesworth 1999), which, in the current context, is the retailer. Stronger attitudes toward the retailer then lead to stronger store loyalty. Thus, the private label share–store loyalty link is strengthened when private label attitudes are more positive.

The second mechanism relates to switching costs. In product categories in which a customer typically buys a particular retailer's private label, switching costs can surface when buying products in these categories at another store (Corstjens and Lal 2000). Specifically, uncertainty about the quality of new brands (Klemperer 1995) can lead to switching inertia between stores (Corstjens and Lal 2000). Thus, the higher the switching costs, the stronger the link between private label share and store loyalty.

FIGURE 1
Framework of Moderated Relationship Between Private Label Share and Store Loyalty



Notes: Moderating effects are driven by attitude toward private labels and switching costs.

Our key goal in this study is to examine the conditions under which the positive effect of private label share on store loyalty can be strengthened. As outlined previously, we investigate three main categories of moderating variables—customer, product category, and retailer characteristics—that influence the private label share–store loyalty relationship. Our selection of specific moderators within each category was driven by their relevance to the private label context as well as to managerial considerations. The key customer-oriented variable is price-oriented behavior. We examine two product category moderators, degree of commoditization and product category involvement, and the retailer characteristic of interest is the retailer's price positioning. All of our four key moderating variables affect the two underlying theoretical mechanisms (attitudes toward private labels and switching costs) that drive the impact of private label share on store loyalty.

Hypothesis Development

Customer Characteristic: Price-Oriented Behavior

Our first hypothesis proposes a moderating effect of customers' price-oriented behavior on the relationship between private label share and store loyalty. For customers who display price-oriented behavior, low prices are an important criterion when choosing between product alternatives because (among other reasons) these customers want to save money. Private labels (with the exception of premium private labels) tend to be priced significantly lower than national brands (Geyskens, Gielens, and Gijsbrechts 2010), "providing a cheaper alternative to national brands" (Hansen and Singh 2008, p. 1832). Thus, purchasing private label brands from a particular retailer enables customers to achieve their goal of reducing their overall spending. Therefore, they develop a stronger positive attitude toward the private labels of that retailer. Because the attitude toward a particular retailer's private labels is one of the mechanisms by which private label brand share influences store loyalty, the link should be stronger for customers who display highly price-oriented behavior. Furthermore, when price-oriented behavior leads customers to buy a retailer's private label brands, they become more familiar with these brands. Thus, the costs of switching to lesser-known private labels are higher, which also strengthens the link between private label share and store loyalty.

In contrast, customers who display less price-oriented behavior are by nature less concerned about price and are therefore less likely to buy private label brands. Thus, private label brand share should play less of a role in developing store loyalty (i.e., such customers do not develop strong attitudes toward private labels, and switching costs are low). This reasoning leads to the following hypothesis:

H_1: The higher customers' price-oriented behavior, the stronger the effect of customers' private label share on store loyalty.

Product Category Characteristic: Degree of Commoditization

When commoditization is low, switching costs are a key factor. Because there are more perceived differences between brands, the costs of switching to other brands for which the quality is lesser known are higher. Therefore, consumers would be inhibited from switching to the private labels of other retailers, strengthening the private label share–store

loyalty link. Furthermore, when commoditization is low, there is an opportunity to build a stronger attitude toward the brands. Because the attitude toward the private label brand for a particular retailer influences the private label brand share–store loyalty relationship, the link should be stronger in low-commoditization categories. Thus, there should be a stronger impact of private label share on store loyalty under this condition.

For highly commoditized product categories, customers perceive products within that category as being mostly fungible (Steiner 1993). However, because customers perceive fewer differences between products and perceived risk is low, switching costs are negligible. Thus, customers are more likely to switch within and between stores. Moreover, because the brands are interchangeable, consumers are unlikely to develop strong positive private label attitudes. As we mentioned previously, these attitudes are important to the strengthening of the private label share–store loyalty link. Because of both these factors, the impact of private label share on store loyalty is weaker when commoditization is high. Therefore,

H_2: The lower the degree of commoditization, the stronger the effect of customers' private label share on store loyalty.

Product Category Characteristic: Product Category Involvement

As a second product category characteristic, we expect product category involvement to influence the effect of private label share on store loyalty. In relatively higher-involvement product categories, customers display more extensive information-seeking behavior (Dholakia 1998) and spend more time and effort processing and comprehending the information to draw inferences from the information (Celsi and Olson 1988). Thus, customers who buy private labels in a relatively higher-involvement product category are likely to have sought information actively, processed the information thoroughly, and developed a more positive and stronger attitude toward private labels. Moreover, high involvement increases the impact of information on attitude as well as the impact of attitude on loyalty (Ajzen 2001; Suh and Yi 2006). Furthermore, switching costs are higher in relatively higher involvement product categories because customers need to make more effort to process information and evaluate alternative brands and/or other stores' private label brands. On the basis of our theoretical mechanisms, both of these factors should lead to a strengthening of the private label brand share–store loyalty link.

For relatively low-involvement product categories, customers are less likely to process information (Hoyer 1984) and therefore are less likely to develop strong positive private label attitudes that influence store loyalty. In addition, the switching costs are lower because there is little information processing effort involved in switching to another private label brand. These arguments lead to our third hypothesis:

H_3: The higher the product category involvement, the stronger the effect of customers' private label share on their store loyalty.

Retailer Characteristic: Price Positioning of the Retailer

The retailer's price positioning is an important factor in store choice (González-Benito and Martos-Partal 2012; Rhee and Bell 2002). Therefore, when customers shop at a retailer with a low price strategy, they are by nature more directed toward low-priced brands. Because private label brands are often cheaper, such customers will develop more positive attitudes toward them. As we have mentioned, a stronger positive private label attitude is tied to the store and therefore strengthens the link between private label brand share and store loyalty.

In addition, when a retailer's low price positioning motivates customers to buy its private label brands, they become more familiar with these brands, and switching costs to other retailers' lesser-known private labels increase. This provides an incentive to remain with the current retailer, thereby strengthening the impact of private label brand share on store loyalty.

In the case of retailers with a higher price positioning, customers are driven more by quality than price in purchase decisions. Because private label brands are generally perceived as low-price, lower-quality alternatives, customers are less likely to develop positive private label attitudes in this context. Therefore, private label share should have a smaller impact on store loyalty. Therefore,

H_4: The lower a retailer's price positioning, the stronger the effect of customers' private label share on their store loyalty.

Finally, it is worthwhile to question whether some moderators influence the private label share–store loyalty link more strongly than others. Therefore, we examine the relative importance of these four moderators in influencing the private label share–store loyalty relationship. Because existing theory and research provide little guidance for developing explicit hypotheses in this regard, this analysis will be largely exploratory.

In summary, we hypothesize that the private label brand share–store loyalty link will be stronger for (1) customers with high price-oriented behavior, (2) retailers with low price positioning, and (3) product categories that are less commoditized and have relatively higher involvement. In addition, we examine the relative importance of each of these moderators.

Empirical Analysis

Data

The study was conducted in Germany. We collected two large-scale data sets (panel data and survey data) and combined them to empirically test our hypotheses. We conducted all analyses at the household level.

Purchasing and household panel data. The first data set consisted of panel data for 10,637 households, which was provided by GfK (one of the world's leading market research firms). This sample is representative of the German population. Purchasing data were observed for a period of two years (January 2008–December 2009). The households included

in the sample remained in the panel for the entire observation period, and all relevant data were available for them.

In the household panel, 35 FMCG product categories were sampled. These categories are a good representation of the FMCG market, including several food categories, beverages, household products, cosmetics, and other toiletries (for a complete list, see Table 1). The data include the purchase price and purchase quantity for all products bought at a particular retailer. The panel members reported this information using hand-scan devices that GfK provides to each panel household. Our analyses included supermarkets, hypermarkets, and discounters. For each household, we include the five retailers at which the household spends the most (i.e., we exclude from our analyses retailers with marginal relevance for a given household; Ailawadi, Pauwels, and Steenkamp 2008).

We used the first data set to compute each household's private label share at each of the relevant retailers and their store loyalty toward these retailers. In addition, we derived the retailers' price positioning, the customers' price-oriented behavior, and control variables (e.g., household information), which we discuss in greater detail subsequently.

Survey data. The second data set consisted of a large-scale online survey of 17,324 consumers that was carried out in June 2010. The purpose was to assess the relevant perceived product category characteristics (i.e., degree of commoditization and involvement for individual product categories). Participants for the survey were recruited from a pool of consumers who regularly respond to surveys conducted by GfK. Each participant was asked to fill out the survey for one randomly selected product category to reduce the amount of effort required per participant. The survey used the same set of 35 product categories as in the panel study, and a total of 17,324 consumers participated. From this survey, we obtained the perceived degree of commoditization and the product category involvement of the 35 categories included in our study. We then combined the survey data with the purchasing data, which resulted in a data set with purchasing data, retailer information, product category characteristics, and household information.

Measurement

We calculated private label share as the expenditures (in euros) allocated to private labels at a particular store divided by total expenditures for that retailer. We assessed store loyalty as the total spend at a particular retailer (in euros) as a percentage of total spend across retailers. These measures are consistent with previous research in this area (e.g., Ailawadi, Pauwels, and Steenkamp 2008; Corstjens and Lal 2000).

TABLE 1
Overview of Product Categories Included in Empirical Analyses

Beer	Espresso	Men's shavers
Body lotion	Fabric softener	Mixed drinks
Canned soup	Face lotion	Muesli
Chocolate bars	Frozen pizza	Pasta
Cleaners	Ground coffee	Rice
Coffee pads	Ice cream (box)	Sanitary towels
Cola	Juice	Shampoo
Cordials	Ketchup	Shower gel
Cream cheese	Laundry detergent	Toilet paper
Deodorant	Lemonade	Toothpaste
Dish detergent	Margarine	Whiskey
Dry pudding		

"Price-oriented behavior" refers to the extent to which the customer pays low prices in his or her purchasing. Because our panel data contained a large number of observations over time, we were able to calculate this index as an inversion of category-weighted average price paid by relevant household, divided by average market price. This constitutes an objective measure of the extent to which households actually select low-priced products when making purchase decisions.

The first of two product category characteristics was the degree of commoditization. We measured this construct with a three-item scale we developed from a thorough review of previous commoditization literature (e.g., Reimann, Schilke, and Thomas 2010; Steiner 1993) as well as expert interviews. Table 2 presents the actual items used. These items were measured with a seven-point Likert scale (1 = "strongly disagree," and 7 = "strongly agree"). A Cronbach's alpha of .84 indicates high internal consistency (Nunnally 1978).

We measured product category involvement with two items taken from established scales (Steenkamp, Van Heerde, and Geyskens 2010), also measured with a seven-point Likert scale. A Cronbach's alpha of .80 indicates high internal consistency for this measure. The indicator reliability is significantly higher than .40 for all items and thus is satisfactory (Bagozzi and Baumgartner 1994).

For the measurement of a retailer's price positioning, we applied a price index per retailer consistent with Ailawadi, Pauwels, and Steenkamp (2008). The price positioning is measured as the price of the basket sold by a retailer relative to the price of the same basket at market-average prices.

Similar to previous research, we included a variety of sociodemographic and psychographic constructs as control variables. Income and household size constituted the only sociodemographic factors for which consistent and significant effects have been reported across several studies (e.g., Ailawadi, Pauwels, and Steenkamp 2008; Dick, Jain, and Richardson 1995; Frank and Boyd 1965; Richardson, Jain, and Dick 1996). Customers' age is a frequently included factor, though the results are slightly less consistent (e.g., Baltas 2003; Hoch 1996).

In addition, we assessed general private label propensity, which refers to the cross-retailer private label share of a given household (Ailawadi, Pauwels, and Steenkamp 2008; González-Benito and Martos-Partal 2012). We included this variable to control for general private label tendencies (vs. those for a specific retailer). This was important because, as Ailawadi, Pauwels, and Steenkamp (2008) show, a household's general private label propensity has a positive impact on the private label share at a specific retailer. We also added the distance to the store of interest, which has been identified as a further key determinant of store loyalty as a control variable (Ailawadi and Keller 2004). Finally, we accounted for store format with two dummy variables.

TABLE 2
Overview of Constructs and Measurement

Construct	Operationalization	Source
Moderating Variables		
Price-oriented behavior	Inversion of category-weighted average price paid by relevant household divided by average market price	
Degree of commoditization[a] (std. α = .84)	•"Overall, I see no major difference between brand name products and the store's own brands in category X." (IR = .70) •"Overall, brand name products and store's own brands are equivalent in category X." (IR = .66) •"In category X, I could substitute brand name products and store's own brands for each other." (IR = .58)	
Product category involvement[a] (std. α = .80)	•"Category X is very important to me." (IR = .65) •"Category X interests me a lot." (IR = .67)	Steenkamp, Van Heerde, and Geyskens 2010; Zaichkowsky 1986
Retailer price positioning	Category-weighted index of average price at relevant retailer divided by average price across retailers	Ailawadi, Pauwels, and Steenkamp 2008
Control Variables		
Household size	Number of people living in a household	GfK
Household net income	Monthly net income (in euros), divided into groups from 1 (less than €500) to 16 (more than €4,000)	GfK
Age of main shopper	Age of main shopper in relevant household (in years), divided into age groups from 1 (under 20 years of age) to 12 (more than 70 years of age)	GfK
Private label propensity	Expenditures (in euros) allocated to private labels across retailers, divided by total expenditures across all retailers	Ailawadi, Pauwels, and Steenkamp 2008
Distance to relevant store	Time to drive to relevant store in minutes	GfK

[a]Measured on a seven-point Likert scale (1 = "strongly disagree," and 7 = "strongly agree").
Notes: Std. α = standardized Cronbach's alpha; IR = indicator reliability.

Statistical Methodology

To test our hypotheses, we conducted a one-way error component regression with random effects (Baltagi 2008). This regression methodology connects the dependent variable across measurement periods by including a household-specific error component that is constant over time. We modeled this household-specific error term as a random effect because the members of the household panel constitute a random sample of households (Baltagi 2008). An important precondition for this specification is the existence of error terms that follow a random distribution, which we validated by applying a Breusch–Pagan Lagrange Multiplier Test (Breusch and Pagan 1980). The test statistic is significant ($\chi^2 = 20{,}872$, d.f. = 1, $p < .001$) and supports the selected model specification.

Our store loyalty index resulted in values between 0 and 1. Therefore, this variable does not follow a normal distribution, and we conducted a logistic transformation (Ailawadi, Pauwels, and Steenkamp 2008). To rule out strong multicollinearity between our independent variables, we computed the variance inflation factors. All values were below the critical value of 10 (Rawlings, Pantula, and Dickey 1998).

We estimated our model in maximum likelihood. The model we applied to the data has the following form[1]:

$$
\begin{aligned}
(1)\quad \ln\left(\frac{SL_{irt}}{1-SL_{irt}}\right) &= \alpha_0 + \beta_1 PLS_{irt} + \beta_2 PLS_{irt}^2 + \beta_3 PLS_{irt} \times Pob_{it} \\
&+ \beta_4 PLS_{irt} \times PLcomm_{irt} + \beta_5 PLS_{irt} \times PLinv_{irt} \\
&+ \beta_6 PLS_{irt} \times P_{rt} + \alpha_1 Pob_{it} + \alpha_2 PLcomm_{irt} \\
&+ \alpha_3 PLinv_{irt} + \alpha_4 P_{rt} + \alpha_5 HHsize_{it} \\
&+ \alpha_6 HHinc_{it} + \alpha_7 Age_{it} + \alpha_8 PLP_{it} + \alpha_9 Dist_{irt} \\
&+ \alpha_{10} S_{irt} + \alpha_{11} H_{irt} + \mu_{ir} + \varepsilon_{irt},
\end{aligned}
$$

where SL_{irt} represents the store loyalty of household i toward retailer r in year t, PLS denotes the private label share, Pob denotes a household's price-oriented behavior, PLcomm denotes the degree of commoditization of the product categories in which the household buys private labels, PLinv stands for the product category involvement, P represents the retailer price positioning, HHsize denotes household size, HHinc represents household income, Age denotes the age of the household's main shopper, PLP is the private label propensity, Dist stands for the distance to a store, S is a dummy variable for the supermarket store type, H denotes a hypermarket store type, μ denotes a random effect that is constant across periods, and ε represents an error term. Note that consistent with Ailawadi, Pauwels, and Steenkamp (2008), the unit of analysis is yearly data

[1]We also include weighting factors that control for differences between our panel member structure and the population structure.

because these observations represent more stable behavior than month-to-month variations.

Results

Overall Descriptive Findings

Tables 3 and 4 provide descriptive data for our sample and correlations between key variables in the study. As Table 3 shows, the mean level of private label share is 15%. In the case of store loyalty (measured as the share of wallet spent at a given retailer), the mean level is 23%. Participants are spread across levels of age, household income, and household size (Table 4).

Private Label Share and Store Loyalty

To ensure that our model improved overall explanatory power, we compared it with two base models. The first base model contained only private label share and private label share squared as direct effects and used the control variables of household size, household income, age of main shopper, private label propensity, and distance to store. The full model with moderating effects provides significant improvement over this base model because the likelihood ratio test is highly significant ($p < .001$). In a second base model, we added the four direct effect control variables of price-oriented behavior, degree of commoditization, product category involvement, and retailer price positioning. Again, the full model with moderating effects outperforms this second base model ($p < .001$). Table 5 presents the results of these analyses.

Direct effect. In terms of the direct effect of private label share on store loyalty, the data confirm the findings of previous research of a positive linear and a negative quadratic effect. The coefficient estimate is $\hat{\beta}_1 = 3.71$ ($p < .001$) for the linear effect and $\hat{\beta}_2 = –.98$ ($p < .001$) for the negative quadratic effect of private label share on store loyalty. Thus, these results indicate that Ailawadi, Pauwels, and Steenkamp's (2008) findings are also generalizable to different retailer formats and to another country (i.e., Germany).

Moderating effects. H_1 predicted that price-oriented behavior has a positive moderating effect on the relationship between private label share and store loyalty. As Table 5 shows, the evidence provides support for this hypothesis ($\hat{\beta}_3 = 1.76, p < .001$). Thus, private labels are more effective in developing store loyalty when customers display price-oriented behavior.

H_2 proposes that the relationship between private label share and store loyalty is weaker when product categories are more commoditized. This hypothesis is supported because the coefficient estimate for the moderating influence of the degree of commoditization on the relationship between private label share and store loyalty is negative and significant ($\hat{\beta}_4 = –.26, p < .001$). Thus, the degree of commoditization of the product categories in which a household buys private labels has a negative moderating effect on the relationship between private label share and store loyalty.

H_3 predicts a positive moderating effect of product category involvement on the relationship between private label share and store loyalty. Consistent with this hypothesis, the relevant coefficient is positive and significant ($\hat{\beta}_5 = .50, p < .001$). In other words, private label share is more strongly related to store loyalty in relatively higher-involvement product categories than in low-involvement product categories.

H_4 posits a negative moderating effect for the price positioning of the retailer on the private label brand share–store loyalty link. The coefficient estimate for this effect is $\hat{\beta}_6 = –6.24$ ($p < .001$), in support of the hypothesis.

To further test whether the examined effects are causal within households, we ran an additional model in which we control for household fixed effects. The results of this analysis indicate that the effects are not only cross-sectional but occur within households as well.

Attitudes toward the retailer's private label brands. To provide additional post hoc support for our theoretical reasoning underlying the moderating hypotheses, we had access to and analyzed data from a separate panel (containing 10,600 responses) that measured one aspect of consumers' attitudes toward the retailer's private label brands (i.e., "The retailer's private label brand fulfills its expectations"). Consistent with our reasoning, the correlation between private label share and private label attitudes was significantly higher (and therefore stronger) when price-oriented behavior was high (vs. low; Fisher's $z = 1.730$, $p < .05$), when commoditization was low (vs. high; Fisher's $z = 2.878$, $p < .01$), when product category involvement was high (vs. low; Fisher's $z = 2.111$, $p < .05$), and for a low (vs. high) retailer price positioning (Fisher's $z = 3.527$, $p < .01$).

Relative importance. We conducted analyses regarding the relative importance of our moderators. We evaluated the effect size for each of our moderators by comparing the impact of a change in the moderators by ±1 standard deviation from the mean. As Table 6 shows, the marginal effect of a change in private label share on our dependent variable was greatest for price-oriented behavior (.70), followed by the retailer's price positioning (.37), product category involvement (.15), and degree of commoditization (.10).

In addition, we assessed the confidence interval for the effect size based on the confidence interval for the model parameter of the relevant moderator. From the assessment of effect sizes, we document the strongest effect for price-oriented behavior (between .66 and .74). This effect size is significantly greater than the moderating effect for retailer price positioning (between .36 and .39). The third-largest moderating effect is shown for product category involvement (.12 to .18). The degree of commoditization has the weakest moderating effect (.08 to .13), although the confidence interval overlaps with that for the effect size of product category involvement. The latter effect sizes thus do not differ statistically.

Additional Analyses

In addition to our testing of the hypotheses, three other issues are worth investigating: the validation of our hypotheses using alternative measures of store loyalty, causal direction, and total spend as an outcome variable. Each of these issues has garnered attention in the private label literature stream.

TABLE 3
Correlation Matrix

Correlations	M	SD	Store Loyalty	Private Label Share	Price-Oriented Behavior	Commodi-tization	Involve-ment	Retailer Price Positioning	Private Label Propensity	Household Size	Household Income	Age of Main Shopper
1. Store loyalty	.23	.20										
2. Private label share	.39	.21	.25									
3. Price-oriented behavior	.87	.21	.05	.18								
4. Commoditization	4.48	.32	.01	–.18	–.18							
5. Involvement	4.18	.26	–.08	.00	–.04	–.01						
6. Retailer price positioning	1.22	.04	.03	–.45	–.17	.16	.00					
7. Private label propensity	.38	.22	.09	.26	.53	–.14	.03	–.08				
8. Household size	2.40	1.19	–.03	.02	.15	.02	.01	–.03	.08			
9. Household income	see Table 4		–.02	–.06	–.18	.08	.05	.05	–.10	.36		
10. Age of main shopper	see Table 4		–.01	–.07	–.10	–.01	–.02	.09	–.11	–.29	–.02	
11. Distance to store	7.52	6.32	–.13	–.14	.01	.05	.01	.14	–.03	.13	.08	–.05

Notes: All correlations are significant at $p < .001$. Store loyalty = share of wallet spent at a given retailer; private label share = share of private labels (%) at a given retailer (linear effect); price-oriented behavior = inversion of weighted average price paid relative to market prices; commoditization = degree of commoditization of product categories in which household buys private labels (measured on a seven-point Likert scale); involvement = product category involvement of product categories in which household buys private labels (measured on a seven-point Likert scale); retailer price positioning = weighted average price index of retailer relative to market prices; private label propensity = share of private labels (%) across retailers; household size = number of people in household; household income = monthly net income of households (income cohorts); age of main shopper = age of main shopper in the household (age cohorts); distance to store = driving distance to store (in minutes).

TABLE 4
Demographic Characteristics of the Sample

Demographic Characteristic	Percentage of Sample
Age[a]	
<25 years	3
25–34 years	19
35–44 years	22
45–54 years	20
55–64 years	16
>64 years	20
Household Net Income[b]	
<€1,000	8
€1,000–€1,999	35
€2,000–€2,999	35
>€3,000	22
Household Size[c]	
1	24
2	39
3	18
4	14
5	4
>5	1

[a]Age of main shopper in household.
[b]Monthly net income of households.
[c]Number of people in household.

Validation analyses. We further tested models using alternative indicators of store loyalty, including share of items purchased and share of shopping trips to a particular retailer. The results indicate that our hypothesized moderating effects are supported for these alternative measures of store loyalty. For the share of items purchased, the moderating effects were as follows: price-oriented behavior ($\hat{\beta}_3$ = 1.80, $p < .001$), degree of commoditization ($\hat{\beta}_4 = -.44$, $p < .001$), product category involvement ($\hat{\beta}_5 = .32$, $p < .001$), and retailer's price positioning ($\hat{\beta}_6 = -5.96$, $p < .001$). For share of shopping trips to a particular retailer, we found the following moderating effects: price-oriented behavior ($\hat{\beta}_3$ = 1.56, $p < .001$), degree of commoditization ($\hat{\beta}_4 = -.11$, $p < .001$), product category involvement ($\hat{\beta}_5 = .21$, $p < .001$), and retailer's price positioning ($\hat{\beta}_6 = -4.64$, $p < .001$). Thus, our results are robust across different measures of store loyalty.

Test for causal direction. The majority of previous studies in this area have investigated the impact of private label brand share on store loyalty, and our study is consistent with this approach. Nevertheless, some researchers have suggested a reverse-direction causal link (e.g., Ailawadi, Pauwels, and Steenkamp 2008). Thus, to provide further support for our causal direction, we analyzed a time-lagged model in which private label brand share in time period 1 is used to predict store loyalty in time period 2. For this analysis, we applied a one-year time period, consistent with previous studies in this area (e.g., Ailawadi, Pauwels, and Steenkamp 2008).

Our results confirm a causal effect of private label brand share on store loyalty ($\hat{\beta}_1 = 2.19$, $p < .001$). Our four moderating effects were significant in this time-lagged model as well. That is, price-oriented behavior in time period 1 posi-

TABLE 5
Results for the Store Loyalty Model

	Full Model		Base Model (II)		Base Model (I)	
Effects on Logit Store Loyalty	**Estimate[a]**	**z-Value**	**Estimate[a]**	**z-Value**	**Estimate[a]**	**z-Value**
Direct Effects						
Private label share	3.71	13.07*	1.10	21.47*	1.10	21.40*
Private label share squared	–.98	–18.36*	–.57	–12.81*	–.62	–13.82*
Moderating Effects						
Price-oriented behavior × private label share	1.76	34.21*				
Commoditization × private label share	–.26	–8.38*				
Involvement × private label share	.50	11.41*				
Retailer price positioning × private label share	–6.24	–45.73*				
Control Variables						
Price-oriented behavior	–.95	–26.80*	–.10	–4.05*		
Commoditization	.11	6.53*	.01	1.28		
Involvement	–.32	–15.72*	–.17	–11.05*		
Retailer price positioning	.22	2.66*	–1.22	–16.01*		
Household size	–.02	–4.42*	–.02	–4.81*	–.02	–4.87*
Household income	.00	.75	.00	3.02*	.00	3.03*
Age of main shopper	.01	6.47*	.01	6.44*	.01	6.76*
Private label propensity	.88	35.04*	.92	36.11*	.85	38.05*
Distance to store	–.03	–35.22*	–.03	–35.27*	–.03	–34.78*
Intercept	–.51	–3.67*	.21	1.95*	–1.57	–59.89*
Dummy supermarket	.39	14.17*	.26	9.27*	–.11	–7.70*
Dummy hypermarket	.90	41.80*	.72	33.42*	.50	31.14*
R-square	.11		.07		.06	
Log-likelihood	–155,178.48		–156,911.30		–157,102.50	
p-value of log-likelihood ratio test	.00		.00		.00	

*$p < .001$.
[a]Unstandardized results are presented.

TABLE 6
Effect Size Comparison

Moderator	Difference in Marginal Effects	95% Confidence Interval	
		Lower Limit	Upper Limit
Price-oriented behavior	.70	.66	.74
Retailer price positioning	.37	.36	.39
Involvement	.15	.12	.18
Commoditization	.10	.08	.13

Notes: Difference in marginal effects is ±1 standard deviation from the mean.

tively moderated the relationship between private label share in time period 1 and store loyalty in time period 2 ($\hat{\beta}_3$ = 1.08, $p < .001$). Similar time-lag effects were evident for the moderating effects of degree of commoditization ($\hat{\beta}_4 = -.13$, $p < .001$), product category involvement ($\hat{\beta}_5 = .25$, $p < .001$), and the retailer's price positioning ($\hat{\beta}_6 = -3.37$, $p < .001$). Overall, this analysis provides support for our proposed causal direction.

Private label share and total spend. Another issue is that private label buyers may not always be the most profitable segment to target from a revenue perspective (Ailawadi, Pauwels, and Steenkamp 2008). Even though private label share may lead to greater store loyalty, this could lead to a negative effect of lower total revenues because private label buyers tend to spend less (*Consumer Reports* 2009). Therefore, a customer's private label share could negatively affect his or her aggregate spend across retailers as well as total spend at a particular retailer (Ailawadi, Pauwels, and Steenkamp 2008). Thus, we extend our analyses to test our moderating hypotheses in the context of an additional retail performance measure: a customer's total spend at a particular retailer.

We analyzed a model similar to the one proposed for store loyalty, but with the customer's total spend at a particular retailer as the dependent variable. Including the moderating factors significantly improved the explanatory power of the model compared with two base models similar to those discussed previously ($p < .001$).

Overall, the results indicate moderating effects that are consistent with those for store loyalty (i.e., in support of H_1–H_4). Price-oriented behavior positively moderates the relationship between private label share and total spend at a particular retailer ($\hat{\beta}_3 = 182.46$, $p < .001$). In terms of product category characteristics, the degree of commoditization has a negative moderating effect on the relationship between private label share and total spend at a particular retailer ($\hat{\beta}_4 = -44.45$, $p < .001$). We also find that product category involvement strengthens the effect of private label share on total spend at a particular retailer ($\hat{\beta}_5 = 63.34$, $p < .001$). Finally, the retailer's price positioning has a negative moderating effect on the relationship between private label share and total spend at a particular retailer ($\hat{\beta}_6 = -313.27$, $p < .001$). Together, these findings suggest that the relationship between private label share and customer's total spend at a particular retailer is stronger when price-oriented behavior and product category involvement are high and when the degree of commoditization and the retailer price positioning are low.

Discussion

The finding that there is a positive relationship between private label share and store loyalty is an important one. However, from an academic perspective, research is needed to provide a deeper understanding of this relationship. From the combination of two extensive data sets containing both behavioral and perceptual data, we find evidence for several important moderating effects. First, there is a stronger relationship between private label share and store loyalty for customers who display price-oriented behavior. Second, product characteristics also moderate this important relationship. The private label share–store loyalty link is stronger in product categories in which there is a low degree of commoditization and high product category involvement. Third, we find that the private label brand share drives store loyalty more for retailers with a low price positioning. Fourth, we also find that the four moderators differ in terms of relative importance, with price-oriented behavior being the strongest. These results have important academic and practical implications.

Academic Implications

From an academic perspective, our key goal was to respond to Ailawadi, Pauwels, and Steenkamp's (2008) call for research on moderating effects on the private label share–store loyalty link. Collectively, our findings regarding these moderating effects advance the understanding of the complexity of the relationship between private label share and store loyalty. Our study integrates moderating effects of customer, product category, and retailer characteristics into one model, and all three types of factors have significant moderating effects on the relationship between customers' private label share and their store loyalty. On the basis of our theoretical reasoning, these effects may occur because consumers develop stronger positive attitudes toward private labels and because switching costs are higher under certain conditions. Thus, our study makes several important contributions to private label research.

First, our findings reveal that the link between private label share and store loyalty is strongest when customers' price-oriented behavior is high. This result highlights the notion that private label brands can help price-oriented customers achieve their goal of cutting overall spending, leading to positive attitudes toward private labels and thereby strengthening the private label share–store loyalty link. Furthermore, because higher private label brand share leads to greater familiarity with a retailer's private label brands, switching costs should be higher, thereby also strengthening the link. Notably, we found a significant, negative main effect of price-oriented behavior on store loyalty, indicating that these consumers have less store loyalty overall. However, our moderating effect suggests that when these consumers purchase a high share of private labels from a particular retailer, they do become store loyal. It is also

important to highlight that this moderator was the highest of the four in terms of relative importance.

Second, we provide insights into how to identify product categories in which private labels are particularly effective in developing store loyalty. Previous research has identified factors that positively influence the general acceptance of private labels, such as private label quality and the introduction of premium private labels (Dhar and Hoch 1997; Geyskens, Gielens, and Gijsbrechts 2010). González-Benito and Martos-Partal (2012) suggest that the relationship between a customer's private label share and the customer's store loyalty differs between product types in terms of perceived risk. Our study extends this work by investigating two important product category characteristics that moderate the private label share–store loyalty link: degree of commoditization and product involvement. To the best of our knowledge, extant research has not examined these moderating effects.

In terms of degree of commoditization, we found that this variable has a negative moderating effect—in other words, the lower the degree of commoditization, the stronger the link between private label share and store loyalty. At first, this finding may seem counterintuitive because one might expect private label brands play a greater role in highly commoditized product categories. Indeed, our data indicate a positive main effect for commoditization, thus highlighting again the important difference between product-category and store-level effects. At the store level, customers risk more when switching to other private label brands if commoditization is low because there are more perceived differences between brands. Consistent with this notion, our data indicate that customers are more likely to be store loyal in this case. In contrast, when commoditization is high, there is little risk of switching to different brands (including other private labels), and therefore private label share should play a lesser role in developing store loyalty.

We found a positive moderating effect in the case of product category involvement. That is, the private label share–store loyalty link was stronger in relatively high-involvement product categories. Our findings suggest that customers develop stronger private label attitudes, which strengthen the link. In addition, switching costs should be higher in this instance. This finding may also seem counterintuitive because one might expect private label brands to be stronger in categories in which involvement is low because of the proliferation of private label brands in these categories. However, our findings suggest the opposite—that driving store loyalty through private label brand share is more likely to be successful in relatively higher-involvement product categories. In categories in which involvement is lower, consumers are less likely to develop strong attitudes toward private labels, and switching costs are lower.

Third, we show that a retailer's price positioning has a negative moderating effect on the relationship between a customer's private label share and store loyalty. Our findings indicate that increasing private label share is particularly important for retailers with a low price positioning. Thus, it is critical for these retailers to have strong private label brands. The results of our study suggest that when customers develop more positive attitudes toward private label brands, these attitudes transfer to the *store* even though the focus might still be on price at the brand level. Thus, it is possible for low-priced retailers to develop store loyalty through a private label strategy. This again highlights the important difference between brand-level and store-level effects. For retailers with a high price positioning, a private label strategy is less critical in developing store loyalty because the link between private label share and store loyalty is weaker. In this case, the store choice is driven more by the quality of the brands in that store, and private labels play a lesser role for these retailers.

Note that our results are consistent with González-Benito and Martos-Partal (2012), who provide evidence for the effectiveness of private labels in developing store loyalty, particularly for retailers with a low price positioning. However, these findings contrast with those from a different study by Martos-Partal and González-Benito (2011), which indicates a stronger effect of private label loyalty on store loyalty when private label positioning is more quality oriented. We provide further evidence on this issue by conducting a more formal and specific test of the moderating role of a retailer price positioning and examining its relative importance. Our results show that the retailer price positioning is an important moderator but that the customers' price-oriented behavior seems to play a greater role in driving the private label share–store loyalty link.

We also provide crucial information on the relative importance of the four moderators. Our analyses indicated that price-oriented behavior is the strongest factor influencing the private label share–store loyalty link. This is a notable finding because although these customers, by definition, focus heavily on price, they can still play a critical role in increasing store loyalty. It was also surprising to find that product category involvement and the degree of commoditization were lower in relative importance. This suggests that customer-related factors contribute more to the private label share–store loyalty link than product category related factors. However, further research is needed to test this notion with other customer and product category characteristics.

In addition to the contribution of the aforementioned moderating effects on the relationship between private label share and store loyalty, our study adds to the existing body of research by analyzing the moderated relationship between customers' private label share and their total spend at a particular retailer. This issue is important because private labels are lower in price and enable customers to lower their overall spending at the retailer. Our results indicate that there are certain circumstances in which a higher private label share does not necessarily lead to a lower total spend and, indeed, may possibly increase it. Specifically, private label brand share is more likely to increase a customers' total spend at a particular retailer when the retailer price positioning and degree of commoditization are low and product category involvement and price-oriented behavior are high. Thus, although customers' private label share could negatively affect their aggregate spend across retailers, our results highlight that customer, product category, and retailer characteristics can strengthen the private label share–total spend link.

Managerial Implications

Private labels are an important part of many retailers' strategies, and previous research has noted that private label share can be an important determinant of store loyalty. By investigating factors that influence the effectiveness of private labels in developing store loyalty, our study provides useful guidance to retailers when they define the strategic importance they assign to their private label programs.

First, the finding that the private label share–store loyalty link is stronger among customers with higher price-oriented behavior has important practical implications because customers who focus on price are typically believed to have low store loyalty. Our results indicate that these customers are a critical segment for building overall store loyalty based on private label share. Thus, when retailers have a large, price-oriented customer base, it is crucial to target these customers with private label brands.

Second, we determined which product categories are most conducive to a private label strategy. We found that private labels are most effective in product categories that are less commoditized and are *relatively* high in involvement. From our data, examples would include coffee, chocolate, ice cream, facial lotion, and deodorant. Therefore, if retailers want to increase customers' loyalty toward the store through private label brands, it is best to invest in or build up private labels in these categories. Note that this strategy represents a significant challenge because these categories are the very ones in which customers are more willing to pay higher prices for national brands to avoid buying private labels (Steenkamp, Van Heerde, and Geyskens 2010). However, the payoff in terms of greater store loyalty would suggest that this strategy is worth the investment. This is an important implication because many retailers tend to focus their private label activities on highly commoditized, low-involvement product categories. Our study would suggest that retailers are less effective in developing store loyalty under the latter strategy.

Third, we studied whether our strategy is appropriate across all retailers. Our results indicate that this is not the case. Rather, retailers with a low price positioning seem to benefit the most from a private label strategy designed to increase store loyalty. This finding has important implications: because customers primarily shop for lower prices in these stores, it has been assumed that retailers with a low price positioning have lower levels of store loyalty. Our study indicates, however, that low-price-strategy retailers can build store loyalty through their private label programs. In contrast, for high-price-strategy retailers, private labels are not as critical in developing store loyalty. Therefore, retailers with a high price positioning should not heavily rely on private label share to build store loyalty. Rather, they might focus on other factors such as assortment, customer service, and store atmosphere.

Limitations and Directions for Further Research

One limitation of the current study is that we did not have a measure of switching costs. Therefore, future studies could more formally examine the role of switching costs in this research context. Moreover, our study identified moderating effects across three broad categories of characteristics (i.e., customer, product category, and retailer characteristics). However, other factors in each of these three categories are likely to have important moderating effects as well.

In terms of customer characteristics, frugality might be an important moderator. Frugal people are highly disciplined in acquiring and consuming products and services to achieve longer-term goals. These consumers are also more conscious about price and value than those low in frugality (Lastovicka et al. 1999). Therefore, private labels are likely to play a greater role in their purchase behavior, which may influence their loyalty to a particular retailer. Further research could explore this variable, as well as other customer characteristics.

Other product dimensions could also be relevant. For example, the distinction between utilitarian and hedonic products has been useful in explaining customer behavior in a variety of areas. In the present context, one might expect a stronger effect for utilitarian products because consumers make private label purchases on the basis of price, which reflects a more cognitive decision process. Hedonic products, in contrast, are more influenced by image, which may be weaker in the case of private label brands. Further research is needed to explore these possibilities.

In terms of retailer characteristics, assortment depth could play an important role. Deep assortments are beneficial for customers because they provide products that match customers' desired specifications more often (Broniarczyk, Hoyer, and McAlister 1998), but they also lead to higher cognitive costs of processing the increased amount of information (Boyd and Bahn 2009). Because customers with a high private label share use only limited parts of a potentially deep assortment, the benefits of such an assortment may be less relevant for these customers. Consequently, the assortment depth may negatively moderate the relationship between a customer's private label share and the customer's store loyalty. Other retailer characteristics may moderate the relationship as well.

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