

Store image dimensions and brand equity: the moderating role of demographic characteristics

Joseph KASWENGI*

This study examines the relationship between store image dimensions and own brand equity. Based on data from a French test market including consumers' own brand choices and their perception on stores patronized, we found that good image stores benefit to brands bearing their names. Moreover, the effects of store image on own brand equity vary with the demographic characteristics. Assortment variety tends to attract larger households whereas affluent families are insensitive to price images. Finally, locational convenience appeals to older households while it does not affect highly educated families.

Keywords: store image, demographics, brand equity, own brands

* Associate Professor of Marketing, Université d'Orléans, B.P. 6749, 45067 Orléans Cedex 2, France, E-mail: joseph.kaswengi@univ-orleans.fr.

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1. Introduction

Managing store image is crucial for retail success. Store characteristics are cues that consumers consider important before patronizing. Consumers use these attributes to determine which stores fit better their needs. Some studies have examined store image dimensions such as price and merchandise quality. Retailers market is characterized by more competition. Thus, store brands can be used to gain some competitive advantages.

More and more, retailers seek to increase their brand equity by integrating their store brands and distributor brands such as store brands or private labels. This study proposes to examine the effects of store image on distributor brand equity in store brands (i.e., we focus on brands that bear or suggest the name of the store). Retailing studies have recognized that although distributor's brands enjoy brand equity, few studies refer to it (Beristain and Zorrilla, 2011; De Wulf *et al.*, 2005).

Specifically, we address the following question: (I) Does store image influence the equity of the distributor brands? Investigation of that issue not only will enable us to better understand what dimensions of store brand are crucial for consumer choice, but also will provide useful marketing implications for manufacturers and retailers. Manufacturers will choose the stores that fit better their brands and retailers will adapt and therefore optimize marketing policies taking account of consumers' perception. The author concludes with a discussion of these and other implications for researchers and practitioners.

2. Research background

The concept of brand equity began to gain an expanding attention in the 1980s. Since these years, brand equity has been studied across three main perspectives: customer, product market and financial (Keller and Lehmann, 2003). Because this article focuses on the perspective of the consumer, customer-based brand equity can be defined as "the differential effect of brand knowledge on consumer response to the marketing of the brand" (Keller, 1993).

Marketing literature has examined a large variety of brand equity determinants: product (Pauwels, 2004), price (Suri, Manchanda & Kohli, 2002), promotions (Valette-Florence, Guizani & Merunka, 2011; Ailawadi, Neslin & Lehmann, 2003) and advertising (Keller, 2003). However, a few studies have examined the impact of distribution (Czellar & Denis, 2002), especially in terms of store image.

This study focuses on the store image influence on store brand equity. Collins-Dodd and Lindley (2003) suggest that a strong relationship between a retail store image and its brand is a crucial requirement for a successful differentiation strategy.

2.1. Relationship between store image dimensions and store brand equity

Store image is defined as "the way in which the store is defined in the shopper's mind partly by its functional qualities and partly by an aura of psychological attribute" (Martineau, 1958). Beristain and Zorrilla (2011) define store brand equity as "a set of components (assets and liabilities linked to a brand) that flow into a global and subjective value associated with a brand, generating a differential response from consumers. These definitions deal with the purpose of this article suggesting the influence of store image on store brand equity.

The cue utilization theory suggests that consumers use an array of cues (e.g., price, color, brand name, brand image, store image, etc.) to assess a product's quality (Olson and Jacoby, 1972). According to Smeijn et al. (2004), consumers use these cues to form an overall evaluation that will affect their attitude toward the store as a whole and its store brands. Some recent researches have tried to examine empirically the relationship between store image and store brand equity.

Collins-Dodd and Lindley (2003) have demonstrated that store image plays a role in specific store brand evaluations. Thus, in this view, they have found support for the notion that store brands can be seen as extensions of the store image, and so can contribute to store differentiation in the consumer's mind.

Vahie and Paswan (2006) have investigated the impact of store image on private label brand image. They find that store atmosphere and store quality positively influence the perception of private label brand's quality. This implies that focusing on store image dimensions can boost store brand equity.

Marketing literature use interchangeably the concept of store brands with terms such as 'private label brands' or 'own brands' (Smeijn et al. 2004). But some researchers distinguish between store brands that bear retailer's name, i.e. own brands, and those that don't do it, i.e. others store brands (Rao et al. 2004; Ngobo, 2011a). In this study, we use the concept of store brands as those that bear retailer's name (i.e. we focus on own brands). Because they use retailer's name, own brands operate as a signal of retailer product quality (Erdem and Swait, 1998). Studies have shown that own-name branding has different effects on customers in comparison to other-name branding strategies (Dhar and Hoch, 1997). However, in line with Beristain & Zorrilla (2012, p 565), there is a lack of empirical evidence in the relationship between store image dimensions and store brand equity. We develop a model of yoghurt own-brand equity where we assume a first and more pressing premise that store image may influence own brand equity.

In addition, although some studies, particularly those mentioned above, have investigated the relationship between store image and brand equity, little attention has been paid to the moderating role of demographic characteristics.

2.2. Moderating role of demographic characteristics

Several studies have examined the influence of consumer characteristics on brand performance. For example, Dhar and Hoch (1997) argue that demographics could vary across retailers because of differences in targeting, positioning, and real estate. One year before, Hoch (1996) found that private label shares vary according to the age, income, education, etc. Richardson, Jain and Dick, (1996) suggest that the conflicting findings may not only be an artifact of the different products, but also sample sizes and dependent measures used in the various investigations. We draw on previous studies on demographics' effects and include the following demographic characteristics in our research to estimate the effects of store image on brand equity: (1) family size, (2) age, (3) income, (4) education, (5) working female presence, and (6) occupations. Including these variables in our model affords the opportunity to test their importance relative to consumer store perception in determining own brand equity. This variables selection is based on the rationale that since own brands are different to national brands and other store brands (e.g. relative to price), own brands may otherwise appeal to consumers in distinct demographic groups. The second primary hypothesis is that demographic characteristics can act as moderating variables by significantly influencing own brand equity. Studies have shown that socio-demographic characteristics affect brand knowledge, i.e. a component of brand equity. Based on brand literature evidence, we expect that demographic characteristics can moderate the link between store image and brand equity.

3. Data

We use data provided by the MarketingScan Panel. The panel was drawn up one city (Angers, 147,571 inhabitants) in France and covers purchases made from January 2004 to June 2009. Panel households make more than 95% of their purchases inside the town where there are fourteen stores. The study variables include purchases, marketing mix variables, demographics and store image data. MarketingScan collects stores perception in early January of every year. We selected all the households that bought an own brand at least once during the period of study (Cotton and Babb, 1978). We estimated the model using one category: yoghurt. This category represents a broad representation of physical and chemical properties, sensory quality (e.g., aroma, texture) and packaging (Bouteille et al. 2013). We also selected stores that sell yoghurt bearing store name, these stores constitute 62 % of the test market. Therefore, our study covers purchases made in 9 stores on 6 brands by 2053 households (Table 1).

Table 1
Consumers' distribution (n=2053).

Households' factors	Number (%)
Age of family head	
18-29	14 (0.01)
30-44	545 (0.27)
45-59	844 (0.41)
60 and over	650 (0.32)
Education	
College and over	1458 (0.71)
Other level	595 (0.29)
Occupation	
High occupation level	760 (0.37)
Middle occupation level	677 (0.33)
Low occupation level	616 (0.30)
Income (€)	
Well-off (2745 and more)	695 (0.34)
Middle class (1295-2745)	1008 (0.49)
Low-income family (up to 1295)	350 (0.17)

Store image was measured with 19 items (see also Ngobo and Jean, 2012). The dimensionality of the construct was checked via estimating an Exploratory Factor Analysis (EFA). Like Ngobo and Jean (2012), we obtained a stable structure with six components: price image, sales staff service, locational convenience, assortment perceived variety, produce quality, and store brand quality (Table 2). The variance explained by these factors exceeds 67%. Reliability was assessed by the Cronbach's Alpha. All variables yielded an Alpha at or over the recommended 0.7 (Fornell and Larcker, 1981), satisfying the criteria. In addition, the composite reliability (CR) estimates (Jöreskog's rho, ρ), ranging from 0.74 to 0.90, exceed the cut-off value of 0.7 (Nunnally and Bernstein, 1994). We conducted a Confirmatory Factor Analysis (CFA) using AMOS. We tested a one-factor model before a multiple-factor model (Byrne, 2009). The one-factor model provided the following fit: Chi-Square (df) = 377535.748 (152), $p=0.0000$; RMSEA=0.159; RMSR=0.188; CFI=0.652; TLI=0.608. The six-factor model fit the data better than the one-factor model: Chi-Square=43185.780, df=138, $p=0.0000$; RMSEA=0.056; RMSR=0.049; CFI=0.960; TLI=0.951. The RMSEA and

RMSR values are less than the recommended 0.8 (Hu and Bentler, 1999). The CFI and TLI measures fall above the recommended 0.9. Further, all the obtained standardized loadings were satisfactory and the Z-values were significant ($p < 0.001$). All the average variances extracted (AVE) were greater than the recommended 0.5. These tests demonstrated evidence of adequate convergent validity. Table 2 presents the composition of store image factors.

Table 2
Store image factors.

Factors	Items	Standardized Factor Loadings	Z - statistic*
Price image ($PRIM_{hst}$)	Reliability : Alpha=0.74, ρ=0.78		
	The store has attractive flyers	0.69	–
	The store has good sales promotions	0.75	128.93
	The advantages (e.g. coupons) offered by the store are attractive	0.63	111.50
Sales staff service ($SERV_{hst}$)	Reliability : Alpha=0.72, ρ=0.78		
	There are short lines	0.61	–
	The store staff is available and responsive	0.73	101.08
Locational convenience (ACS_{hst})	Reliability : Alpha=0.77, ρ=0.80		
	I can easily get a place to park my car	0.75	–
	I can easily get to the store to do my shopping	0.84	86.17
Assortment perceived variety ($VARI_{hst}$)	Reliability : Alpha=0.70, ρ=0.77		
	Products are clearly displayed and it is easy to find what you want	0.75	–
	In general, the store has a large variety of products	0.66	116.38
	The products I need are never out of stock	0.60	106.73
Produce quality ($PROD_{hst}$)	Reliability : Alpha=0.87, ρ=0.90		
	Fresh produce sold in the following departments are of good quality (1=totally disagree, 5 = totally agree)		
	Fruit and vegetables	0.69	–
	Bakery section	0.65	109.41
	Cheeses	0.73	116.79
	Fishery	0.68	113.66
	Butchery	0.71	116.74
	Pork butchery	0.75	122.27
Store brand quality ($QSBR_{hst}$)	Reliability : Alpha=0.93, ρ=0.74		
	The low-end private labels are of good quality	0.67	–
	The store brands are of good quality	0.75	126.02

* $p < 0.001$

Table 3 compares the average variances extracted (AVE) values with the squared correlations for each pair of constructs and shows that the former are greater than the latter, indicating distinct differences and discriminant validity between the latent variables (Fornell and Larcker, 1981). Therefore, we retained the six-factor model of store image.

Table 3

Constructs correlations and Average Variance extracted (AVE).

	1	2	3	4	5	6
	0.54	0.54	0.66	0.52	0.59	0.58
PRIM (1)	1					
SERV (2)	<i>0.41</i>	1				
ACS (3)	<i>0.10</i>	<i>0.17</i>	1			
VARI (4)	<i>0.42</i>	<i>0.50</i>	<i>0.16</i>	1		
PROD (5)	<i>0.44</i>	<i>0.47</i>	<i>0.13</i>	<i>0.43</i>	1	
QSBR (6)	<i>0.31</i>	<i>0.38</i>	<i>0.09</i>	<i>0.42</i>	<i>0.45</i>	1

Note: Squared correlations are in italics; AVE are bolded

4. Research model formulation

We begin our model development with a generalized linear model (GLM) including logit framework (Gupta et al. 1996):

$$\begin{aligned}
\pi_{hist} = & \alpha_{his} + \beta_{1hs} \times PRICE_{ist} + \beta_{2hs} \times DISP_{ist} + \beta_{3hs} \times FEAT_{ist} + \beta_4 \times INC_h \\
& + \beta_5 \times AGE_h + \beta_6 \times SIZE_h + \beta_7 \times EDU_h + \beta_8 \times WFEM_h + \beta_9 \times OCUP_h \\
& + \beta_{10hs} \times PRIM_{hst} + \beta_{11hs} \times SERV_{hst} + \beta_{12hs} \times VARI_{hst} + \beta_{13hs} \times ACS_{hst} \\
& + \beta_{14hs} \times PROD_{hst} + \beta_{15hs} \times QSBR_{hst} + \sum_{p=1}^{P-1} \beta_p \times Z_p
\end{aligned} \quad (1)$$

where π_{hist} denotes the probability of household h ($1, \dots, H$) choosing own brand i ($1, \dots, N$) in store s ($1, \dots, K$) on purchasing occasion t ($1, \dots, T$); α_{his} is the intrinsic utility or value for household h regarding brand i in store s ; β is the vector of variables on brand choice; $PRICE_{ist}$ is the price average of brand i in store s in year t ; $DISP_{ist}$ is the average of the product display activity for brand i in store s in year t ; $FEAT_{ist}$ is the average of the feature advertising activity for brand i in store s in year t ; INC_h is the household h income; AGE_h is the household h head age; $SIZE_h$ is the household h size; EDU_h is the household h head education (1 if he/she has a college education or over, 0 otherwise); $WFEM_h$ denotes the working female presence in a household h ; $OCUP_h$ is the household h head occupation level; $PRIM_{hst}$ is the measure of price image for household h concerning store s in year t ; $SERV_{hst}$ is the perception of service quality for store s in year t ; $VARI_{hst}$ is the perceived assortment variety by household h regarding store s in year t ; ACS_{hst} is the access perception for household h related to store s in year t ; $PROD_{hst}$ is the measure of produce quality for household h associated to store s in year t ; $QSBR_{hst}$ denotes the quality perception of the store brands by household h corresponding to store s in year t . Z_p is the year-specific p ($p=1, \dots, P$) effects.

Eq. (1) assumes that store image effects on own brand choice are the same for all consumers. However, prior research demonstrated that consumer's food choice is affected by many factors like consumer-related factors. Pohjanheimo and Sandell (2009) show that consumers differ in their liking and motives for yoghurts. Because there are different segments of consumers in yoghurt choice and its consumption, we include the moderating effects of the demographic characteristics as follows:

$$\pi_{hist} = \sum_{k=1}^K \beta_k \times SI_{hst} \times DC_h \quad (2)$$

where the interactions concern all the variables k ($k=1, \dots, K$) of store image SI_{hst} and demographic characteristics DC_h . Then we reintegrate Eq. (2) into Eq. (1). Because we specify the within-household correlation structure for the panel, model parameters are

estimated by generalized estimating equations (GEE) where a logit-based function is estimated using STATA.

5. Findings

To test our model, we first computed a model which overlooked demographics and their interactions with store image dimensions. Next, we assessed a model that accounts for the interactions variables. In order to determine which model provides the best fit for our data, we rely on the specification error and select the model with the smallest p-value. It implies that as more the *p*-value is high as more the model needs to include all the relevant variables. The second model yielded a good fit (coef=0.0400, *p*= 0.040) in comparison to the first model (coef=0.0599, *p*=0.0000). In addition, the Wald chi-square (1189.43, *p*=0.000) is greater than for the model 1 (898.01, *p*=0.000). Then, we retained the results from the model 2 (Table 4).

Table 4
Model results.

Predictors	Coefficient (z-value)	
Intercept	-3.067***	(-10.40)
Marketing mix variables		
Price	0.523***	(21.73)
Display activity	1.751***	(14.54)
Store image		
Salesperson service quality	-0.146***	(-4.52)
Assortment variety	-0.236***	(-3.87)
Store brand quality	0.107***	(7.41)
Demographic characteristics		
Household size	0.108***	(7.35)
Income	-0.060***	(-5.61)
College education	0.088*	(2.14)
Interactions		
Age x Locational convenience	0.012***	(3.90)
Family size x Assortment variety	0.036**	(2.82)
Family income x Price image	-0.009*	(-2.03)
College education x Locational convenience	-0.100**	(-2.70)

* *p*<0.05, ** *p*<0.01, *** *p*<0.001. Note: *p*< 0.05

Note: To more understand relationships, irrelevant variables were deleted.

According to the marketing mix variables, Table 4 shows that price increases own brand equity (0.523, *p*=0.000). Display activity positively influences own brand equity (1.751, *p*=0.000). These findings confirm that marketing mix expenditures have positive effects on distribution. Past research showed that consumers use price as a proxy for the store brand quality and consider display as a more important marketing variable than price (Ngobo and Jean, 2012). The findings on store image show that families that are inclined to rely on the private label quality tend to choose own brands (0.107, *p*=0.000). The own brand equity decreases as the variety assortment increases (-0.236, *p*=0.000) and is similar when households highly perceive salesperson service quality (-0.146, *p*=0.000).

Affluent families manifest lower propensity to buy own brands (-0.060, $p=0.000$) because of less financial pressure (Frank and Boyd, 1965). This result is consistent with the observation that store brands target price-sensitive consumers. On the other hand, households' size positively influences own brands' equity (0.0108, $p=0.000$). Households with more highly educated heads are prone to purchase own brands (0.088, $p=0.033$).

The results show that own brands' equity is positively influenced by locational convenience and age (0.012, $p=0.000$). This means that older households transfer more retailers' convenience image to own brands. Older shoppers appear to have developed more sophisticated choice processes in brand choice than young shoppers due to their expertise. It has also been pointed out that the larger the household, the greater the transfer of store variety assortment image to own brands (0.036, $p=0.005$). Yet, own brands' equity decreases with the family income and price image (-0.009, $p=0.043$). This suggests that wealthier households strongly relate price to quality and consider price as a proxy for the product quality (Yoo et al. 2000). Frequent promotions lower product quality. Therefore, low perceived quality may not drive own brands' equity. Finally, the results indicate that the influence of locational convenience on own brand equity become more important as household's education is high (-0.100, $p=0.007$). Highly educated households are not inclined to choose own brands. Because education is considered as a surrogate measure of income, stores offering large assortments to consumers give more opportunities to better educated households to prefer quality and premium products.

6. Conclusion

The purpose of this study was to examine the effects of store image on distributor brand equity in brands that bear store name. Prior research has indicated that store image predicts brand quality, which in turn affects brand equity. Own brands contribute to the retailer's differentiation (Collins-Dodd and Lindley, 2003), and although it has been argued that they enjoy brand equity, little attention has been paid to testing this assumption. The present study was an attempt to better understand the store image dimensions that are crucial for consumer-based own brand equity. Two main conclusions flow from this analysis.

First, we found the evidence that store image dimensions are an important determinant of own brand equity. This highlights the notion that store brands are an extension of store image and they can sustain the retailer's differentiation in the market. This research particularly contradicts prior studies showing that private label quality is negatively associated to store brands equity. Retailers should keep up a good image that consumers use to infer the product's quality. According to manufacturers, they may choose stores which demonstrate good image and, therefore, build the equity of their brands.

The second conclusion is that store image effects on brand equity may vary with demographics. This supports the importance to understand how different types of consumers perceive stores such that managers may adjust store image dimensions to socioeconomic characteristics to increase brand value.

The present study has limitations. Our model includes only a few store image dimensions. More store image data (e.g. shopping experiences) should be collected in order to better investigate brand equity. Secondly, our study concerns one test market in France. Replications in other countries and cultures are needed. Regardless of these limitations, our study contributes to better understand factors that drive own brand equity.

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