Study of the strategies of merchandising, promotion and private label in retail
AUTORIZACIÓN DE LOS DIRECTORES
DE LA TESIS PARA SU PRESENTACIÓN

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Y para que así conste, a los efectos oportunos, se firma la presente en Salamanca a 24 de Octubre de 2014.

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CHAPTER 1. INTRODUCTION TO THE MERCHANDISING IN RETAIL
Nowadays, we live a complex economic situation. This situation is reflected in the slowdown in householders’ consumption in Europe in recent years, for example in Spain it has come to represent negative annual rates (Eurostat, 2014). In this situation, both retailers and manufacturers fight for attracting consumers to their stores and products. This competition is increasing since they cannot lose any chance and should anticipate or react quickly to sales strategies of their competitors.

Therefore, retailers are looking for ways to attract more consumers to their stores and, once there, how to get these spend more than they have planned. For this reason, retailers use the different tools available that take place both outside and inside the store. Some of these tools are advertisements designed to increase demand for a product or brand (Erdem et al., 2008; Wansink and Ray, 2000), flyers advertising to increase traffic on the store (Gijsbrechts et al., 2003; Schmidt and Bjerre, 2003) or price promotions and discounts to trigger picking up products once inside the store (Blattberg et al., 1995; Gupta, 1988; Inman et al., 1990:).

Retailers should assess if these above tools are profitable since they are an important expense or an investment. In the case of advertising, the retailer must invest money to have a space in a magazine or a few of seconds in a television or radio. In the case of the flyers, the retailer must design it, print it and send it to potential buyers. While it is true that manufacturers often make contributions to appear in them. In the case of promotions, at the time that they fix a lower price, retailer loses some of the profit margin that they normally obtain from the sale of this product, although another part of the loss is assumed by the manufacturer by reducing the product’s costs. Another of the tools that retailer has at its disposal to promote the sale within the store are different techniques of merchandising. These techniques can be widely construed as all actions that take place inside the store and are related to product positioning to encourage acquisition (Buttle, 1984). Unlike the above tools, these do not involve a great economic cost, in fact the opposite, since retailers receive income or contributions by manufacturers in order to rent preferential spaces within the store (Valenzuela and Raghubir, 2009; Valenzuela et al., 2013). Manufacturers pay for this position because they know that it is profitable since these techniques cause the product will be more perceptible by the potential buyer (Buttle, 1984; Inman et al., 2009). This increased perception of a product within the store is very important for a manufacturer since the percentage of unplanned purchases made by consumers is estimated between 46 and
77% of all purchases according to recent studies (Bell et al., 2011; Bezawada et al., 2009; Stilley et al., 2010).

1.1. Concept of Merchandising

Definition

According to the AMA (American Marketing Association), merchandising is a wide term that encompasses promotional activities run by the manufacturer in the form of special presentations that take place within stores, as well as initiatives run by the retailer to make the product stand out. Academic authors like Buttle (1984) define it as “any form of on-store or in-store promotion other than personal selling which is designed to trigger purchasing behavior” and he adds that it is a way to motivate the purchase with a higher benefit-cost ratio. In any case, merchandising refers to commercial actions at the point of sale aimed to stimulate customers’ purchases as soon as they enter the store.

The manufacturer’s and retailer’s reliance on merchandising actions has been growing over the past few years. For instance, the investment in this communication technique shows an increase of 0.7%, when the average variation in communication and publicity has been -9.9% in the Spanish market (Infoadex, 2013). Thus, from the manufacturer’s point of view, the growing competition in the shelves at the point of sale, aggravated with the increasing development of private label -up to a market share of 43.5% in packaged food in the Spanish market, according to AC Nielsen, (2013)- makes merchandising initiatives are very useful actions to increase the visibility and attraction of their brands at the point of sale. Similarly, from the point of view of the retailer, increased competition between hypermarkets, reflected in their increasing number (AC Nielsen, 2013), involves not only the need to enhance the attraction to the stores, but also the need to develop merchandising initiatives which could achieve the best possible performance from customers visits.
How does it work?

Consumers can decide their purchase before the entry or once they have entered in the store, therefore, it is possible to stimulate or influence the purchase at these two moments (Sheth, 1983). There are commercial incentives that can act at one or another time. In particular, merchandising techniques act inside the store. The effectiveness of these techniques is based on they cause the product becomes more perceptible by the consumer (Chandon et al., 2009; Yeung and Wyer, 2004), so they influence at the early stages of the election process such as attention and perception (Evan et al., 2006). This is particularly important because consumers usually have a fixed path within the store (Larson et al., 2005) and if the stimulated product draws their attention, it may become part of the set of options considered in the evaluation phase or choice (Chandon et al., 2009; Yeung and Wyer, 2004). Being able to be perceived and evaluated on site is even more important if we consider that current studies show that unplanned purchases is about the 70% of total purchases (Bell et al., 2011; Bezawada et al., 2009; Inman et al., 2009). That is, the most of purchases are decided within the store and thus, they may be very influenced by commercial incentives that arise in it.

Advantages and effects

These techniques can increase the product sales between 77 and 400% in the short term (Wilkinson et al., 1982; Woodside and Waddle, 1975), while promotions do it about 33% (Ataman et al., 2010; Van Heerde et al., 2003). Therefore, they even may become more effective than promotions. In fact, they may be not only more effective, but also more profitable because they do not involve a reduction of the margin for retailers as it happens with price promotions (Ailawadi et al., 2006; Ailawadi et al., 2007). On the contrary, the manufacturers pay economic contributions in order to ensure that their brand is stimulated through these techniques (Ailawadi et al., 2009; Valenzuela et al., 2013). Therefore, merchandising is considered a tool with a higher benefit-cost ratio (Buttle, 1984) which improves margins for retailers and it should be analyzed in greater depth in future research (Ailawadi et al., 2009).

Furthermore, these merchandising can place the stimulated products far from its usual place. In this situation, buyers cannot compare prices and they usually assume that there exists a price advantage (Inman et al., 1990; Smith and Burns, 1996). Thus,
merchandising techniques may stimulate the product without modifying the product price. This is an advantage in comparison with price promotion which may damage the brand equity in the long term if they cause a change in the reference price that consumers have about the brand (Blattberg et al., 1995; Kopalle et al., 1999; Zeelenberg and Van Putten, 2005).

**Previous literature about merchandising**

Previous literature has analyzed different types of commercial stimuli such as promotions, displays, brochures, flyers or coupons (Bawa, 1996; Bezawada et al., 2009; Blattberg et al., 1995; Buttle, 1984; Gijsbrechts et al., 2003; Schmidt and Bjerre, 2003; Swaminathan and Bawa, 2005; Wilkinson et al., 1982; Zhang et al., 2009). These studies conclude that commercial stimuli can increase the sales of a product, of a brand or even of a product category (Ailawadi et al., 2006; Van Heerde et al., 2004).

Several previous academic contributions have approached the effect of merchandising initiatives on consumer behavior and market response (Bezawada et al., 2009; Bolton, 1989; Buttle, 1984; Chan et al., 2008; Chevalier, 1975; Gupta, 1988; Inman et al., 2009; Little, 1998; Narasimhan et al., 1996; Shankar and Krishnamurthi, 1996; Van Heerde et al., 2000; Van Heerde et al., 2004). However, most of these studies focus on promotions and treat the merchandising effects in a collateral form. In fact, the role of merchandising is usually collected in the variable *display*, which means any special presentation within the point of sale, when it is analyzed cues about price promotion (Ailawadi et al. 2006; Little 1998; Narashiman et al., 1996; Van Heerde et al., 2004). These studies only conclude that merchandising techniques, without any distinction, increase the product sales or even there may exist synergistic effects between price promotions and the use of merchandising (measured by variable display), because it involves that promotions become more visible (Inman et al., 2009; Lemon and Nowlis, 2002; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004; Wilkinson et al., 1982; Woodside and Waddle, 1975).

Studies about commercial stimuli have been more prolific for promotions than other stimuli. So, there are several studies that analyze how promotions affect to the sales taking into account:
- Product characteristics such as their brand (Ailawadi et al., 2001; Ailawadi et al., 2006; Bemmaor and Mouchoux, 1991; Lemon and Nowlis, 2002; Macé and Neslin, 2004; Van Heerde et al., 2004) or their level of price (Narashiman et al., 1996; Macé and Neslin, 2004; Wakefield and Inman, 2003).

- Category characteristics such as their purchase frequency (Bawa, 1996; Fader and Lodish, 1990; Inman et al., 2009; Macé and Neslin, 2004; Wakefield and Inman, 2003), their ease of storage (Ailawadi et al., 2003; Ailawadi et al., 2007; Blattberg et al., 1995; Narashiman et al., 1996; Macé and Neslin, 2004; Mela et al., 1998; Pauwels et al., 2002; Raju, 1992; Van Heerde et al., 2000), the expiration (Gupta, 1988; Krishna, 1994) or the level of category’s competition measured in number of brands (Fader and Lodish, 1990; Narashiman et al., 1996; Wakefield and Inman, 2003) or the private label share (Bezawada et al., 2009; Fader and Lodish, 1990; Wakefield and Inman, 2003).

- Category characteristics based on the motivation or the buying process such as the hedonic or utilitarian purchase motivation (Ailawadi et al., 2003; Chandon et al., 2000; Chaudhuri, 2000; Inman et al., 2009; Micu and Chowdhury, 2010; Palazón and Delgado-Ballester, 2013; Park and Moon, 2003; Shiv and Fedorikhan, 1999; Sloat et al., 2005; Suh, 2009; Wakefield and Inman, 2003; Yeung and Wyer, 2004), the planned or the impulsive nature (Bezawada et al., 2009; Inman et al., 2009; Jones et al., 2003; Narashiman et al., 1996; Metcalfe and Mischel, 1999) or the consumer involvement in the purchase (Kapferer and Laurent, 1985; Park and Moon, 2003; Volle, 2001).

This type of analysis has not been prolific for other stimuli such as merchandising techniques, although we can find relevant studies about coupons or brochures that analyze their effectiveness taking into account any of the above aspects (Bawa, 1996; Burton et al., 1999; Swaminathan and Bawa, 2005; Walters and Jamil, 2003). Regarding merchandising techniques, we only find studies that analyze their effectiveness depending on the brand (Bemmaor and Mouchoux 1991; Lemon and Nowlis 2002). However, the most of merchandising studies analyze the importance of only one
technique, the product place on the shelf in order to increase their perception and improve their evaluation (Chandon et al., 2009; Drèze et al., 1994; Valenzuela and Raghunbir 2009; Valenzuela et al., 2013). But they analyze a little number of categories and references, so they do not take into account these results may be moderated by some of the product category characteristics such as the purchase frequency or the hedonic or utilitarian nature.

In this field, we detect a lack of papers that analyze, as with the promotions, whether the above characteristics moderate the effectiveness of different merchandising techniques. We can find studies that classify promotions and analyze which type of them is most appropriate for a particular type of product (Chandon et al., 2000; Hardesty and Bearden, 2003; Palazón and Delgado-Ballester, 2009; Palazón and Delgado-Ballester, 2013; Volle, 2001), but not for merchandising techniques. Despite the continued growth of the unplanned purchase (Bell et al., 2011; Bezawada et al., 2009; Stilley et al., 2010), which trigger the continued growth of the investment made by the retailers and manufacturers in the study of the purchasing decisions within the store in recent years (Stilley et al., 2010; Valenzuela et al., 2013), we find a lack of studies that analyze deeper all the possibilities that merchandising within the store can give in order to optimize the retailer and manufacturers’ profits, as Breugelmans and Campo (2011) do it for online groceries. Despite the growing importance of these techniques and the fact that they are highlighted as an important line to be development (Ailawadi et al., 2009; Shankar et al., 2011), we do not find papers focus on merchandising techniques that (1) analyze the effectiveness of these techniques depending on the products characteristics, (2) analyze the temporary effects of these techniques (3) analyze comparatively the effectiveness of different merchandising techniques and (4) analyze the effectiveness on private labels. The reason for this gap may be the great difficulty in obtaining data on these merchandising techniques because they are often not recorded in the retailers’ computer system unlike other data such as prices, units sold or even a product margins. Therefore, it is necessary for the researchers to visit the store, or pay a provider data, and collect information through observation, which represents a large investment of time or money to get this information on various products over a large period of time.
1.2. Objectives and contribution of the thesis

We propose a deep investigation in order to improve the theoretical and practical knowledge about these merchandising techniques, which are increasingly important for retailers and manufacturers (Bezawada et al., 2009; Chandon et al., 2009; Valenzuela et al., 2013). We seek to advise retailers and manufacturers about how they can optimize the use of these techniques, as well as, to answer the call of several papers that highlight a lack of empirical studies on alternative techniques to price promotions or discounts (Ailawadi et al., 2009; Shankar et al., 2011; Sethuraman and Raju, 2012). These studies indicate the need of deeper researches about vital issues such as what type of technique is more effective depending on the characteristics of the product categories or type of brand.

As main novelty, we conduct a study on the influence of more used merchandising techniques along the thesis, by analyzing comparatively their effects as Breugelmans and Campo (2011) do for online groceries. This already is a novelty since most previous studies that incorporate the analysis of techniques merchandising, treat it as a control variable in the analysis of promotions (Bemmaor and Mouchoux, 1991; Inman et al., 2009; Lemon and Nowlis, 2002; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004). In addition, we will analyze the influence of merchandising compared with other techniques available to the retailer, such as flyers, taking into account the moderating role of the two dimensions of product quality (Chapter 2). Furthermore, we will distinguish between different techniques of merchandising for doing a separately and comparatively study of them in order to differentiate the intensity of its effects and possible synergies with different types of promotions (Chapters 3, 4 and 5), something not done with previously, since the most recent papers focus on analyzing the effectiveness of a single stimulus (Bezawada et al., 2009; Chandon et al., 2009; Inman et al., 2009). We have not found any previous empirical paper which distinguishes between different techniques of merchandising within the store, although there are theoretical papers that listed various merchandising techniques and show that may have different impact when it comes to influence a consumer (Buttle, 1984; Tellis, 1998; Varley, 2006). Furthermore, the effects of these techniques will be analyzed in different types of products such as computer products (Chapter 2), personal care products (Chapter 3) or food products (Chapters 3, 4 and 5). Most studies on
commercial incentives focus on food products although there are studies that show the particular characteristics and the need to separately consider other products such as computer (Neelamegham and Chintagunta, 2004; Sriram et al., 2006). In food products, we have a set of 22 categories in order to analyze the merchandising effectiveness depending on some of their characteristics such as the hedonic or utilitarian nature. The number of analyzed categories is much higher than in other papers that focus on merchandising techniques (Bezawada et al., 2009; Chandon et al., 2009; Drèze et al., 1994; Valenzuela and Raghurban, 2009; Valenzuela et al., 2013). Another new aspect is to analyze whether the effectiveness of these techniques varies depending on the quality associated with the product brand (Chapter 2). In this line we have only found some studies that examine the effectiveness some of the merchandising techniques depending on price tiers instead of quality, moreover their results are somewhat contradictory (Bemmaor and Mouchoux, 1991; Lemon and Nowlis, 2002). Finally, we analyze whether different merchandising techniques have different degrees influence on national brands and private labels (chapter 5), in order to recognize which technique is most appropriate for national brands and which one is for private labels. There is no wide evidence in the literature about this; in fact studies with different commercial stimuli to price promotion for the private label are called (Sethuraman and Raju, 2012). We have only found the study of Lemon and Nowlis (2002), which analyzes only one product category, so their results may not be generalizable.

1.3. Structure of the thesis

Considering the hard competition between commercial agents and the increasing importance of unplanned purchase, along this thesis, we are going to analyze different issues about one of the most interesting commercial tools today: merchandising techniques. The aim is to understand and explain the characteristics and operation of these techniques and, analyze in which situations are more likely to succeed in order to, finally, advise to retailers on their use within the store. To this aim, we will try to solve several issues about these techniques during the following chapters of the thesis (see Figure 1.1).
In the second chapter, we analyze the effectiveness of merchandising techniques in comparison with other tools such as flyers. Here, we analyze the effects of these tools on computer products, therefore, not frequently purchased products, with a higher perceived risk and involvement purchase. We also take into account the possible moderating effect of objective quality and of subjective quality associated with the brand in these products.

In the third chapter, we comparatively analyze the effectiveness of two of the more used merchandising techniques (island and end of aisle) on two product categories with different characteristics such as the frequency of purchase, the perishable nature or the storage ease. In this case, we also analyze the possible temporal effects of these techniques as well as the possible synergistic effect with price promotions or discounts. In the fourth chapter, we comparatively analyze the effectiveness of three most used merchandising techniques available to the retailer (island, end of aisle and signage). These techniques are analyzed with a set of twenty two product categories, all packaged foods, which are divided into two groups according to their hedonic or utilitarian nature. Moreover, we also test the synergies between these three techniques of merchandising and two types of promotions, price promotions and product promotions. In the fifth chapter, we perform a comparative analysis of the effects of the three main techniques of merchandising on national brands and private labels. This analysis is performed in
the same twenty two product categories used in the previous chapter. Table 1.1 summarizes the content of the main chapters. Finally, we discuss a number of theoretical conclusions and practical implications of how these techniques work and how merchandising could be used to obtain the maximum benefit from them.

Table 1.1. Focus of respective chapters

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1.4. References


Chapter 1. Introduction to the merchandising in retail


CHAPTER 2. PRODUCT QUALITY AND BRAND INFLUENCES ON THE EFFECTIVENESS OF MERCHANDISING TECHNIQUES
2.1. Introduction

According to the American Marketing Association, the broad term “merchandising” refers to a wide set of in store techniques, available to retailers or manufacturers to help them draw attention to a product and increase its sales. Investments in these techniques have increased in recent years, compared with advertising or communication (ACNielsen, 2013; Infoadex, 2013), because of the increased trend of unplanned purchases (Bell et al., 2011; Bezawada et al., 2009) and the high benefit-cost ratio they offer (Buttle, 1984). Yet analyses of these techniques have been limited; most empirical articles include simply a “display” variable when studying promotional techniques (Ailawadi et al., 2006; Little, 1998; Van Heerde et al., 2004).

Similar to other promotional incentives, merchandising stimuli can be moderated by different variables related to a product’s physical characteristics, such as its expiration date, storage conditions, or weight (Inman et al., 2009; Narasimhan et al., 1996; Swaminathan and Bawa, 2005), or the consumer’s behavioral characteristics, such as the expected utility of the purchased product, the consumer’s hedonic or utilitarian motivation, and the level of purchase involvement or perceived risk (Chandon et al., 2000; Chaudhuri, 2000; Hardesty and Bearden, 2003; Teas and Agarwal, 2000; Volle, 2001).

Other variables can moderate merchandising’s effectiveness and require special consideration, such as the product’s brand and quality. The brand is an extrinsic attribute of the product, which influences consumers’ perceived risk (Erdem et al., 2006; Gooner and Nadler, 2012; Grewal et al., 1998; Yoo et al., 2000; Zeithaml, 1988). Quality comprises two dimensions: objective quality, associated with the technical characteristics of the product, and subjective quality, which results from the consumers’ own views (Mitra and Golder, 2006; Zeithaml, 1988). This latter quality dimension relates closely to the brand too (Dawar and Parker, 1996; Dodds and Monroe, 1985; Gooner and Nadler, 2012; Mitra and Golder, 2006). No studies have analyzed the moderating effects of brand and quality on merchandising effectiveness though.

To contribute theoretically and empirically, we examine the importance of merchandising techniques by accounting for the potential moderating role of the
product’s objective quality and subjective quality attributable to the brand. Furthermore, we analyze these relationships in technological products that, due to lack of awareness or price levels, induce greater perceived risk and purchase involvement than food products, which have been the focus of many prior studies.

In the next section we review the previous literature about commercial stimuli and how quality can moderate their effectiveness in order to propose hypotheses about what type of commercial stimuli are the most appropriate depending on the assessment of two quality dimensions. Subsequently, we describe the used methodology for performing the empirical analysis in order to contrast the above hypotheses. Then, we analyze the results of the empirical analysis. Finally, we present the conclusions that shed light on the effectiveness of different commercial stimuli on computer products, which allow us to give advice to the computer retailers and manufacturers on the use of different commercial stimuli on these products.

2.2. Previous Literature Review and Hypotheses

2.2.1. Commercial stimuli

Several studies cite the direct effects of different commercial stimuli that retailers or manufacturers use to increase their sales and profits (Ailawadi et al., 2006). The most widely analyzed are merchandising techniques, advertising flyers, coupons, and promotions. We can classify these stimuli into in-store stimuli and out-store stimuli. Our analysis focuses on in-store stimuli (merchandising techniques) and one out-store stimuli (advertisement flyers).

From a broad perspective, merchandising techniques include any action in the store aimed at drawing attention to a product and increasing its sales. Different techniques appear within the merchandising concept, such as positioning products in an unexpected location (ends of the aisle, islands) or highlighting products with visual stimuli (signage, posters). Several studies confirm that merchandising exerts direct effects on sales (Ailawadi et al., 2006; Bezawada et al., 2009, Chandon et al., 2009; Gupta, 1988; Inman et al., 2009; Macé and Neslin, 1994; Van Heerde et al., 2000),
though usually by adopting merchandising as a control variable in their analyses of the effects of promotions (Bezawada et al., 2009; Blattberg et al., 1995; Inman et al., 2009).

One of the more important out-store stimulus is advertising flyers that seek to increase sales of a certain product (Gijsbrechts et al., 2003; Schmidt and Bjerre, 2003). Flyers remind consumers about the existence of a product and inform them about any promotions to enhance the impact of those deals (Schmidt and Bjerre, 2003). Previous literature tends to include flyers in a “feature” control variable that refers to any external technique designed to increase sales of a product or attract consumers to the store (Gijsbrechts et al., 2003; Lemon and Nowlis, 2002; Little, 1998; Van Heerde et al., 2004). This variable also moderates the effects of the promotions (Lemon and Nowlis, 2002; Narasimhan et al., 1996). Yet promotions are the most studied stimuli, in research that attempts to reveal their direct effects on sales, especially short-term sales (Blattberg et al., 1995; Inman et al., 1990; Pauwels et al., 2002). In addition, several studies assess synergies between promotions and other commercial stimuli, such as merchandising techniques or flyers (Lemon and Nowlis, 2002; Van Heerde et al., 2004).

2.2.2. Determinants of commercial stimuli’s effectiveness

Studies of these commercial stimuli usually take into account different determinants and thus control for various aspects that may moderate the results. For example, studies that analyze special presentations at the point of sale control for the distance between the new position of the stimulated product from its usual position or whether this new position is in proximity to a complementary product (Bezawada et al., 2009; Chandon et al., 2009). Studies of advertising flyers also account for their characteristics, such as the number of pages, the geographic area in which they launch, temporal frequency, or average discounts (Gijsbrechts et al., 2003; Schmidt and Bjerre, 2003). Studies of promotions instead control for their characteristics, such as whether they induce immediate benefits, for example a price discount, a gift, or additional amounts of the stimulated product (Chandon et al., 2000; Hardesty and Bearden, 2003; Palazón and Delgado-Ballester, 2009).

Previous studies of commercial stimuli also analyze some common determinants and confirm the moderating role of a product’s physical characteristics, such as its expiration date, storage conditions, and weight, on the extent to which promotions affect
sales (Gupta, 1988; Narashiman et al., 1996; Pauwels et al., 2002). Another key determinant of commercial stimuli effectiveness is the consumer’s profile. Consumer characteristics such as price sensitivity, risk aversion, product involvement, and product knowledge imply greater or lesser predispositions to such stimuli (Inman et al., 2009; Park and Moon, 2003; Swaminathan and Bawa, 2005; Volle, 2001; Wakefield and Inman, 2003). Some of these characteristics relate closely to perceived quality in its role as a moderator of commercial stimuli effectiveness (Agarwal and Teas, 2001; Aqueveque, 2006; Dawar and Parker, 1996; Mitra and Golder, 2006). Higher quality attributed to the product implies lower perceived risk and therefore influences risk-averse consumers, decreasing their need for knowledge or information search and triggering a greater willingness to respond to commercial stimuli (Chaudhuri, 2000; Gijsbrechts et al., 2003; Inman et al., 1990). We propose the following hypothesis:

**H1:** Quality positively moderates the effectiveness of commercial stimuli for product sales.

Perceptions of quality depend on two attribute types: intrinsic and extrinsic (Aqueveque, 2008; Szibillo and Jacoby, 1974) (See Figure 2.1). Whereas intrinsic attributes are the objective, technical characteristics of the product, which can be compared easily by seeking out information about the objective quality of the product or planned purchase (Bawa, 1996; Burton et al., 1999; Mitra and Golder, 2006), extrinsic attributes relate closely to the product (e.g., the brand) and have crucial influences on perceived quality (Aqueveque, 2006; Dodds et al., 1991; Gooner and Nadler, 2012; Zeithaml, 1988). Therefore, assessments of the quality attributed to the brand entail subjective quality (Mitra and Golder, 2006). Both objective and subjective quality dimensions relate inversely to perceived purchase risk (Agarwal and Teas, 2001; Aqueveque, 2006) but have different connotations for the effectiveness of commercial stimuli.

The differential roles of objective and subjective quality reflect the heterogeneity of consumers. Some consumers, usually those without much product knowledge, tend to be less analytical planners. They instead are more influenced by merchandising techniques, which prompt their unplanned purchases (Bezawada et al., 2009; Inman et al., 2009). These less analytical consumers also tend to trust brand assessments, using this extrinsic attribute to reduce their perceived risk (Gooner and Nadler, 2012; Lemon and Nowlis, 2002; Teas and Agarwal, 2000; Yoo et al., 2000) without requiring
additional knowledge or information search (Chaudhuri, 2000; Gijsbrechts et al., 2003). Thus, subjective quality should enhance the effectiveness of merchandising techniques among these consumers. In contrast, more analytical consumers might use flyers more readily and relate these commercial stimuli to their planned purchase. The flyers, sent to potential consumers’ homes, facilitate their purchase planning and, ideally, attract them to the establishment (Schmidt and Bjerre, 2003). That is, advertising flyers allow consumers to search for information and evaluate the objective quality of a product before they even enter the retail establishment (Gijsbrechts et al., 2003). We thus predict that higher perceived objective quality enhances the effectiveness with which flyers encourage purchase among those more analytical consumers who plan their purchases.

![Figure 2.1. Quality dimensions](source: Prepared by the authors)

In short, the behavioral patterns of less analytical consumers suggest that subjective quality enhances the effectiveness of merchandising techniques, whereas the behaviors of analytical consumers suggest that objective quality better enhances the flyers’ effectiveness among these shoppers. Along these lines, we propose:

**H2:** The subjective quality attributed to the brand enhances the effectiveness of merchandising techniques more than it does the effectiveness of a flyer for sales.

**H3:** The objective quality of the product enhances the effectiveness of a flyer more than it does the effectiveness of merchandising techniques for sales.
Chapter 2. Product quality and brand influences on the effectiveness of merchandising techniques

2.3. Methodology

2.3.1. Study context

For this study, we consider software products sold by a category killer retailer. We collected data about computers offered for sale over a period of eight weeks, from February to April 2011, in one of Europe’s largest computer retailer (Retail-Index, 2013; Metro, 2013), gathered from a Spanish store. The weekly data featured units sold and sales prices of 109 stockkeeping units (SKU) from 12 brands. The retailer provided the information directly from the scanner data warehouse available in its information system. We obtained 599 observations (some products did not remain on sale during the eight-week study period), which we complement with other sources of information, such as surveys and observations, to detail the quality and commercial stimuli.

2.3.2. Measures of quality

Two variables help us measure the two dimensions of quality: objective product quality and subjective brand quality. For these measures, we rely on technical data about the products and a survey of potential buyers. This survey was conducted inside the establishment during the same eight weeks we collected the other information. A pretest with 21 consumers and employees of the establishment asked them to review the survey for any errors. After fixing a few minor mistakes, we randomly asked 402 customers who observed and/or compared computers inside the store. The items used in the survey (rated on a 5-point Likert scale) can be found in the Appendix section (Appendix 1). Finally, we obtained 376 valid surveys from consumers.

For the “subjective quality attributed to the brand” (SQ) variable, we turned to assessments of the brands that consumers offered in the survey. Specifically, we asked about the level of quality they would attribute to each of the 12 brands in the panel data, on a five-point Likert scale that contained already established scales, such as those from Keller and Aaker (1992), Erdem et al. (2006), and Grewal et al. (1998). This procedure provided a separate score for each of the 12 brands. For the “objective quality of the product” (OQ) measure, we combined subjective and objective data. In this case, we weighted the scores provided regarding the extent to which consumers assessed four objective technical characteristics for each product (Mitra and Golder, 2006). processor
speed, RAM capacity, hard drive capacity, and graphics card capability. In most cases, the same manufacturers of these components assessed the quality of the component with a five-point scale, on the basis of objective features such as capacity measured in Mb/Gb or speed measured in GHz. We weighted the scores obtained from manufacturers according to the importance that our surveyed consumers granted these technical details. Thus, we obtained a different score of the objective quality for each of the 109 SKUs.

2.3.3. Measures of commercial stimuli

We collect the commercial stimuli as two dummy variables, following previous studies (e.g., Van Heerde et al., 2000; Van Heerde et al., 2004). They equal 1 if the reference appears in the current week in the stimulus analyzed; otherwise, they take a value of 0. For the merchandising variable, we obtained observational data by visiting the establishment during each of the weeks analyzed. During these visits, we checked whether each SKU appeared in a different place than usual, such as the end of an aisle or an island, and whether any special signage sought to draw attention to it. Finally, we checked all the flyers the retailer sent during the study period (one per week) to establish the flyer variable.

Table 2.1 displays the composition of the three data sources we collected and used in this study; Table 2.2 provides descriptions of the main variables.

Table 2.1. Descriptive study data

<table>
<thead>
<tr>
<th>STUDY DATA</th>
<th>SCANNER DATA</th>
<th>OBSERVATION DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMPORAL PERIOD: February–April 2011 (8 weeks)</td>
<td>Number of SKUs</td>
<td>Observations with merchandising</td>
</tr>
<tr>
<td>PLACE: Salamanca (Spain)</td>
<td>Number of brands</td>
<td>Observations with flyers</td>
</tr>
<tr>
<td></td>
<td>Number of observations</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Observations with merchandising</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Observations with flyers</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURVEY DATA</th>
<th>SCANNER DATA</th>
<th>OBSERVATION DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Computer buyers</td>
<td>Number of SKUs</td>
</tr>
<tr>
<td>Pretest</td>
<td>21 persons</td>
<td>Number of SKUs</td>
</tr>
<tr>
<td>Total sample</td>
<td>376 persons</td>
<td>Number of SKUs</td>
</tr>
<tr>
<td>Sampling error to 95% trust level</td>
<td>5%</td>
<td>Number of SKUs</td>
</tr>
</tbody>
</table>
Chapter 2. Product quality and brand influences on the effectiveness of merchandising techniques

Table 2.2. Study variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>$S_{it}$ - SALES</td>
<td>Physical units of product $i$ sold during week $t$.</td>
</tr>
<tr>
<td>$P_{it}$ - PRICE</td>
<td>Retail price in euros (including VAT) of product $i$ during week $t$.</td>
</tr>
<tr>
<td>$B_{(k)i}$ - BRANDS</td>
<td>Dummy variables that control for the effect of each brand. We introduce one dummy variable for each of the 12 brands, such that it takes a value of 1 if product $i$ has the brand $k$.</td>
</tr>
<tr>
<td>$M_{it}$ - MERCHANDISING</td>
<td>If product $i$ is stimulated by a special location or signage during week $t$. The variable equals 1 if the product is stimulated; otherwise it equals 0.</td>
</tr>
<tr>
<td>$F_{it}$ - FLYER</td>
<td>If product $i$ appears on a flyer or brochure during week $t$. The variable value is 1 if the product $i$ appears on a flyer and 0 otherwise.</td>
</tr>
<tr>
<td>$OQi$ - OBJECTIVE QUALITY</td>
<td>The weighting, according to the importance cited by surveyed consumers, of the assessment of the objective quality of product $i$ depending on its main technical characteristics. The possible values vary between 1 and 5.</td>
</tr>
<tr>
<td>$SQi$ - SUBJECTIVE QUALITY</td>
<td>The average assessment of the product’s subjective quality attributed to the brand, according to surveyed consumers. The values vary between 1 and 5. All products of the same brand have the same value for this variable.</td>
</tr>
</tbody>
</table>

Notes: $i$ is the SKU for which we collect information; $t$ is the week in which the information is collected; and $k$ is the product brand

2.3.4. Model

We propose a sequential analysis, through linear multiple regressions, in which we consider the effect of each commercial stimuli and its interaction with the quality dimensions separately. We then present a general model that jointly compares the direct relationship of the product’s objective quality and the subjective brand quality with sales, as well as their moderating roles in the link between merchandising or flyers and sales.

With Model 1, we contrast the effectiveness of merchandising techniques and flyers for this product category:

$S_{it} = \alpha + \beta_1 P_{it} + \sum_{k=1}^{12} \beta_{2k} B_{ki} + \beta_3 M_{it} + \beta_4 F_{it} + \varepsilon_{it}$.

In Models 2 and 3, we assess the moderating role of quality with regard to the effectiveness of merchandising and flyers, respectively. Thus, Model 2 includes interactions of the variable that represents merchandising techniques in the
establishment with the objective quality \((\text{MxOQ}_i)\) and with the subjective quality associated with the brand \((\text{MxSQ}_i)\). Model 3 features interactions between the variable that captures flyers and both the objective quality of the product \((\text{FxOQ}_i)\) and the subjective quality attributed to the brand \((\text{FxSQ}_i)\). In both models, the direct effect of subjective brand quality gets omitted, due to its redundancy with the effects of brand variables. Thus,

\[
(2) \quad S_{it} = \alpha + \beta_1 P_{it} + \sum_{k=1}^{12} \beta_{2k} B_{ki} + \beta_3 M_{it} + \beta_4 \text{OQ}_i + \beta_5 \text{MxOQ}_it + \beta_6 \text{MxSQ}_it + \varepsilon_i,
\]

and

\[
(3) \quad S_{it} = \alpha + \beta_1 P_{it} + \sum_{k=1}^{12} \beta_{2k} B_{ki} + \beta_3 F_{it} + \beta_4 \text{OQ}_i + \beta_5 \text{FxOQ}_it + \beta_6 \text{FxSQ}_it + \varepsilon_i.
\]

Finally, Model 4 combines all treated interactions in the regressions:

\[
(4) \quad S_{it} = \alpha + \beta_1 P_{it} + \sum_{k=1}^{12} \beta_{2k} B_{ki} + \beta_3 M_{it} + \beta_4 \text{F}_it + \beta_5 \text{OQ}_i + \beta_6 \text{FxOQ}_it + \beta_7 \text{FxSQ}_it + \beta_8 \text{MxOQ}_it + \beta_9 \text{MxSQ}_it + \varepsilon_i.
\]

2.4. Analysis and Results

Table 2.3 shows the estimation results. The results obtained from Model 1 suggest that the uses of merchandising techniques and flyers for promoting computer products have significant positive direct effects \((p<0.01)\) on sales, in line with previous papers that study frequently purchased products (Bezawada et al., 2009; Gijsbrechts et al., 2003; Van Heerde et al., 2004). In support of H1, Model 2 reveals a significant positive moderating effect for both objective quality \((p<0.10)\) and subjective quality \((p<0.01)\) on the effectiveness of merchandising techniques to promote computer products. Similarly, Model 3 indicates that the moderating effect of quality on flyers’ effectiveness has a significant positive effect for both objective quality \((p<0.05)\) and subjective quality \((p<0.10)\).
Finally, we estimate all possible combinations of the analyzed variables in Model 4 and observe that subjective quality has a greater moderating impact when it refines merchandising effectiveness (3.998) rather than the flyers’ effectiveness (2.439). In contrast, objective quality exerts a greater impact when it moderates flyers (4.303) instead of merchandising techniques (2.149). In both cases, the differences are significant (p < 0.10). Therefore, our results support both H2 and H3. We summarize these results in Table 2.4.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.414ns</td>
<td>-0.046ns</td>
<td>-0.350ns</td>
<td>-0.361ns</td>
</tr>
<tr>
<td>Price</td>
<td>0.001ns</td>
<td>-0.002ns</td>
<td>-0.002ns</td>
<td>-0.001ns</td>
</tr>
<tr>
<td>Apple</td>
<td>-0.240ns</td>
<td>0.432 ns</td>
<td>-0.361ns</td>
<td>-0.292ns</td>
</tr>
<tr>
<td>Asus</td>
<td>0.805ns</td>
<td>1.19*</td>
<td>0.222ns</td>
<td>0.340ns</td>
</tr>
<tr>
<td>Compaq</td>
<td>0.736ns</td>
<td>0.897ns</td>
<td>0.731ns</td>
<td>0.801ns</td>
</tr>
<tr>
<td>Dell</td>
<td>-1.029ns</td>
<td>-0.967ns</td>
<td>-1.258ns</td>
<td>-1.396**</td>
</tr>
<tr>
<td>Hewlett-Packard</td>
<td>0.704ns</td>
<td>-0.395ns</td>
<td>1.514*</td>
<td>-0.429ns</td>
</tr>
<tr>
<td>LG</td>
<td>-0.782ns</td>
<td>-0.767ns</td>
<td>-0.729ns</td>
<td>-0.618ns</td>
</tr>
<tr>
<td>Medion</td>
<td>-0.231ns</td>
<td>0.399ns</td>
<td>0.191ns</td>
<td>0.239ns</td>
</tr>
<tr>
<td>Packard Bell</td>
<td>0.615ns</td>
<td>0.461ns</td>
<td>0.462ns</td>
<td>0.327ns</td>
</tr>
<tr>
<td>Sumsung</td>
<td>1.823**</td>
<td>2.439***</td>
<td>1.625*</td>
<td>1.594**</td>
</tr>
<tr>
<td>Sony</td>
<td>4.081***</td>
<td>3.162**</td>
<td>5.303***</td>
<td>3.533***</td>
</tr>
<tr>
<td>Toshiba</td>
<td>5.144***</td>
<td>4.398***</td>
<td>6.229***</td>
<td>4.611***</td>
</tr>
<tr>
<td>Merchandising</td>
<td>8.197***</td>
<td>10.748*</td>
<td>5.933ns</td>
<td></td>
</tr>
<tr>
<td>Flyers</td>
<td>7.183***</td>
<td>3.800*</td>
<td>4.922ns</td>
<td></td>
</tr>
<tr>
<td>Objective Quality</td>
<td>0.633*</td>
<td>0.793*</td>
<td>0.600*</td>
<td></td>
</tr>
<tr>
<td>Merchandising-Objective Quality</td>
<td>2.288*</td>
<td>2.149*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merchandising-Subjective Quality</td>
<td>5.037***</td>
<td>3.988***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flyers-Objective Quality</td>
<td>3.254**</td>
<td>4.303**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flyers-Subjective Quality</td>
<td>1.327*</td>
<td>2.439*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.429</td>
<td>0.393</td>
<td>0.331</td>
<td>0.472</td>
</tr>
<tr>
<td>F Test</td>
<td>33.066***</td>
<td>22.654***</td>
<td>17.419***</td>
<td>26.873***</td>
</tr>
</tbody>
</table>

*p<0.10, **p<0.05, ***p<0.001; ns: no significative θ p>0.10

a. ACER serves as the reference brand.
b. The effect of SUBJECTIVE QUALITY is redundant, because we introduce a constant for each brand.
Table 2.4. Summary of results

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Expected effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Quality positively moderates the effectiveness of commercial stimuli for product sales.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H2</td>
<td>The subjective quality attributed to the brand enhances the effectiveness of merchandising techniques more than it does the effectiveness of a flyer for sales.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H3</td>
<td>The objective quality of the product enhances the effectiveness of a flyer more than it does the effectiveness of merchandising techniques for sales.</td>
<td>Confirmed</td>
</tr>
</tbody>
</table>

2.5. Conclusions

The main aim of this research was to analyze the importance of a product’s objective quality and the subjective quality attributed to its brand for explaining the effects of merchandising techniques within an establishment and flyers sent to potential customers. We analyze infrequently purchased products, computers, which feature substantial technological components and greater perceived risk, because of their complexity and dynamic evolution (Neelamegham and Chintagunta, 2004; Sriram et al., 2006). According to our results, both merchandising techniques and flyers help increase sales in this product category. The positive influence on sales is moderated by two dimensions of product quality, objective (due to its own technical characteristics) and subjective (due to the perceived quality of the brand). The more objective or subjective quality a product has, the greater the impact of the merchandising techniques and flyers. However, we also emphasize that objective quality improves to a greater extent the effect of the flyers, which relate more closely to planned purchases and appeal to more analytical consumers. We find opposite results for subjective quality, in that it increases to a greater extent the effect of merchandising techniques, through its link to unplanned purchases and appeal to impulsive consumers.

Therefore, we recommend that computer manufacturers allocate some resources to convincing retailers to encourage sales of their products through merchandising techniques and flyers; the results affirm their effectiveness. In addition, they should devote further efforts to increase the subjective quality attributed to their brand, which is more profitable in terms of enhancing their image than is improving the technical characteristics of their products. In this product category, consumers seek to reduce the
high perceived risk associated with purchasing such an infrequently bought, relatively expensive, complex product by focusing on the brand. Many consumers (up 91.4%) also seek to advise from other expert consumers or sellers, who have great influence as prescribers. Thus, manufacturers should combine a pull strategy to attract potential buyers with a push strategy that encourages the retailer’s sellers to recommend their brand, not other brands.

For retailers, we suggest they pay close attention to their uses of merchandising techniques and flyers, because these commercial stimuli are particularly effective in the computer product category. According to our results, retailers should use merchandising techniques for products with higher subjective quality or recognized brands, to motivate impulsive consumers to make an unplanned purchase. In contrast, they should place products with higher objective quality prominently in their advertising flyers, because analytical consumers likely compare the product’s attributes carefully and make planned purchases. Furthermore, buyers are not extremely price sensitive; when they observe a product in merchandising or flyers, they assume a price cut (Inman et al., 1990). Therefore, they likely prefer to minimize perceived risk, rather than gain economic deals, for these complex products; this suggests retailers can optimize their profits using commercial stimuli without needing to offer great price discounts.

To complement this study, further research might increase the number of product attributes, expand the SKUs and brands, or use a longer study period to gain further insights. Another interesting research extension might devise a specific questionnaire, adapted to technological products, to refine the measure of subjective quality. We call for research that compares our results across retailers in other areas, to determine if the results vary by region, due to greater product knowledge or greater price sensitivity in certain locations. Finally, it might be interesting to test our findings in non-specialized stores that also sell computers, such as hypermarkets.

2.6. References


Chapter 2. Product quality and brand influences on the effectiveness of merchandising techniques


CHAPTER 3. MERCHANDISING AT THE POINT OF SALE: DIFFERENTIAL EFFECT OF END OF AISLE AND ISLANDS
3.1. Introduction

According to the AMA (American Marketing Association), merchandising is a wide term that encompasses promotional activities run by the manufacturer in the form of special presentations that take place within establishments, as well as initiatives run by the retailer to make the product stand out. In any case, merchandising refers to commercial actions at the point of sale aimed to stimulate customers’ purchases as soon as they enter the establishment. Traditionally, it was conceived as a way to motivate the purchase with a higher benefit-cost ratio (Buttle, 1984).

The manufacturer’s and retailer’s reliance on merchandising actions has been growing over the past few years. For instance, in the Spanish market the investment in this communication technique shows an increase of 0.7%, when the average variation in communication and publicity has been -9.9% (Infoadex, 2013). This increasing interest in merchandising can be credited to current studies that show that unplanned purchases make up between 46 and 70% of total purchases (Bell et al., 2011; Bezawada et al., 2009; Inman et al., 2009). That is, there are purchases that are decided at the store and thus, are very influenced by commercial incentives that arise in it. Thus, from the manufacturer’s point of view, the growing competition in the shelves at the point of sale, aggravated with the increasing development of private label -up to a market share of 43.5% in packaged food, according to AC Nielsen (2013)- makes merchandising initiatives very useful actions to increase the visibility and attraction of their brands at the point of sale. Similarly, from the point of view of the retailer, increased competition between hypermarkets, reflected in their increasing number and the falling demand (AC Nielsen, 2013), involves not only the need to enhance the attraction to the stores, but also the need to develop merchandising initiatives which could achieve the best possible performance from customers visit.

Several previous academic contributions have approached the effect of merchandising initiatives on consumer behavior and market response (Bezawada et al., 2009; Bolton, 1989; Buttle, 1984; Chan et al., 2008; Chevalier, 1975; Gupta, 1988; Inman et al., 2009; Little, 1998; Narasimhan et al., 1996; Shankar and Krishnamurthi, 1996; Van Heerde et al., 2000; Van Heerde et al., 2004). However, the role of merchandising is usually analyzed in an aggregate manner as a special presentation within the point of sale (display). In addition, it is usually studied in a collateral form
together with an interpretation of external communication stimulus added to the point of sale (feature), with special attention to the effect of price and product promotions in its usual sense. Some studies have explored separate analysis of different promotions and external communication stimuli at point of sale, such as flyers, coupons, advertisements, etc. (Bawa, 1996; Bezawada et al., 2009; Gijsbrechts et al., 2003; Zhang et al., 2009). However, the effort to analyze the impact of various merchandising initiatives separately has been much more limited, despite having been identified as an important issue (Ailawadi et al., 2009; Buttle, 1984; Shankar et al., 2011). The difficulty to collect precise data may underlie this lack of studies.

We seek to contribute in this regard, by using separately and comparatively the effect on sales of various merchandising initiatives. Specifically, we focus on two very common initiatives at the point of sale: the presentation of the product in ends of aisle and the presentation of the product in islands within the main aisles. In addition to the comparison in the impact of both these initiatives, we also discuss the interaction with promotional incentives and potential synergies that this combination may cause. Not surprisingly, the role of merchandising to support promotional campaigns has been repeatedly pointed out in previous academic literature (Ailawadi et al., 2006; Bolton, 1989). Additionally, the temporary effects are also considered in these stimuli, considering possible effects of diffusion, saturation or inertia commonly referred to in the literature on the market response to commercial incentives (Haans and Gijsbrechts, 2011; Van Heerde et al., 2000; Van Heerde et al., 2004).

Empirically, we based on weekly data from a hypermarket. This methodology is common in studies that analyze the impact of commercial incentives on sales of a product category (Kopalle et al., 1999; Little, 1998; Pauwels et al., 2002; Van Heerde et al., 2000; Van Heerde et al., 2004). However, most studies put much stress on the longitudinal variation, what it means, they focus on temporary variations in product categories established in a closed way, i.e., with very few references and very similar to each other (Ailawadi et al., 2007; Van Heerde et al., 2004). Instead, we pay the attention on the transversal variations, it is, we consider a shorter sales history, but in a wide category comprising many references. This quantification of effects through many references involves that the dependent variable of interest is formalized in relative terms rather than in absolute, it is said, it is considered the variation sales instead of sales (Van Heerde et al., 2000; Van Heerde et al., 2004).
The main contribution of this paper is to perform a first theoretical and empirical approach to the role of the ends of aisle and islands to stimulate purchases at the point of sale. As noted previously, the previous literature has barely differentiated merchandising initiatives and less ends of aisle and islands, to study their impact on demand, even though the need for studies in this line has been noted in recent years (Ailawadi et al., 2009; Shankar et al., 2011). The results of this study not only show that these techniques have a different impact on the purchasing decisions of consumers, but that the impact evolves differently depending on its duration, its combination with other promotional incentives or product category affected.

Then, we make a review of the previous literature concerning to the effects of merchandising on the market response leading to the formulation of hypotheses. Subsequently, we detail the methodology used in the empirical analysis and we describe the analysis and results. Finally, we discuss the main conclusions and implications of our study to managers and researchers.

3.2. Previous Literature Review and Hypotheses

3.2.1. Effects of end of aisle and island on market response

Several studies have confirmed that using merchandising techniques in the store can stimulate sales of a product (Bemmaor and Mouchoux, 1991; Beawada et al., 2009; Chevalier, 1975; Narasimhan et al. 1996; Inman et al. 2009; Wilkinson et al. 1982). This phenomenon is perfectly logical from the perspective of consumer behavior. For example, The Integrated Theory of Consumer Behavior by Sheth (1983) distinguished a previous planning that includes the selection of stores and a later phase focused on behavior at the point of sale. This last phase shows that consumers may change initially planned purchases or deciding new purchases during their visit and that stimulus at the store can influence these changes significantly (Cricq and Bruel, 1975; Díez de Castro et al., 2006). Its importance increases if it is taken into account the proportion of unplanned purchases tend to be increasing (Bell et al., 2011; Beawada et al., 2009; Inman et al., 2009). These merchandising techniques influence the early stages of the formation of the choice of purchase: exhibition, knowledge and perception (Armstrong and Kotler, 2007; Evan et al., 2006), obtaining a higher probability that the
product was taken into consideration, evaluated and finally acquired. In fact, they can influence remembering a forgotten need, awakening an unknown need or managing the impulsive purchase (Inman et al., 2009). This effect is boosted because consumers tend to assume that the product, which is supported by a merchandising action, includes some promotion or price advantage; this fact can be interpreted as a clear example of Learning Theory or Conditioned Reflex by Pavlov (1927). Although it has been shown that this association is not always true (Inman et al., 1990), again increasing concern and/or lack of time causes the buyer was more sensitive to these signals and to be attracted by the idea of saving it (Theory of Time’s Distribution of Households, Becker, 1965).

The stimulus at the point of sale can be different types (Buttle, 1984; Cricq and Bruel, 1975; Cooper et al., 1996; Díez de Castro et al., 2006; Wilkinson et al., 1982). This fact implies the need to analyze separately the role each one plays in the response on consumer’s purchase. In particular, it is interesting to analyze separately and comparatively the role of two types of special presentation of products at the point of sale: in end of aisle and island in the main aisles. Most of previous research has interpreted them as a single stimulus type (display). However, they have different characteristics (Díez de Castro et al., 2006; Samson and Little, 1988; Varley, 2006):

a) The end of aisle is an exposure at the end of the same shelf in which there are all products of a particular category. Thanks to this technique, the product increases its visibility from the central aisles busiest, with more traffic or transit.

b) The island is the grouping or stacking of a product, out of its normal location together with the rest of the category, and it is usually located in the middle of the main aisles with more traffic of people or at the entrance to the store.

Because of this distinction, we expect that the island is a more aggressive merchandising technique and, therefore, will have a greater impact on consumer response. The island has a greater visual impact and a certain element of surprise (Díez de Castro et al., 2006; Varley, 2006). It is located in areas of greater traffic of buyers that often follow a path shopping at the establishment (Larson et al., 2005); therefore, it is more perceptible by potential buyers and it may have more capacity to capture the attention of customers who had not even thought of getting this type of product on their visit. Being the products more exposed, consumers will increase the probability of their purchase (Burton et al., 1999; Inman et al., 2009). Furthermore, consumers associate the
product’s isolation with the existence of higher discounts, which carry an increase of the willingness to buy (Smith and Burns, 1996; Valenzuela et al., 2013). Moreover, the product is often placed farther from its usual placement with the rest of competing brands and this prevents price comparisons. Many buyers prefer to assume that there exists a price advantage and save their time (Inman et al., 1990; Smith and Burns, 1996).

All these previous arguments suggest that, although different merchandising techniques help to stimulate sales at the establishment, the effectiveness differs from one technique to another. This effectiveness of the merchandising techniques is linked to the potential of capturing the attention of consumers and the potential to improve assessment of stimulated product by consumers. Consequently, we propose the following hypothesis:

\[ H1a: \text{The ends of aisle have a positive impact on stimulated product sales.} \]
\[ H1b: \text{The islands have a positive impact on stimulated product sales.} \]
\[ H1c: \text{The islands have a greater positive impact than the impact of the ends of aisle on stimulated products sales.} \]

3.2.2. Interaction between end of aisle with islands and price promotions

The positive effects of short-term promotions have been extensively studied in the literature; there are already such as evidences about them, that the effort of the literature has focused on the reason of their success, it means, how they work and affect the customer’s behavior (Ailawadi et al., 2006; Blattberg et al. 1995; Chan et al., 2008; Gupta, 1988; Leeflang et al., 2008; Pauwels et al., 2002; Van Heerde et al., 2003).

Another line of research, but not yet too developed, analyzes the possible synergies between promotions and merchandising techniques, understood at aggregated terms under the terms display and feature, concluding that the joint use of merchandising and promotions (especially price discounts) can enhance the effectiveness of each of the separate techniques (Bolton, 1989; Fader and Lodish, 1990; Lemon and Nowlis, 2002; Narasimhan et al., 1996; Van Heerde et al., 2000; Van Heerde et al., 2004).
On one hand, the existence of a promotional incentive can make the captured attention by means of merchandising actions become sales (Chandon et al., 2009). On the other hand, a special exhibition of products helps draw attention to promotions, increasing their effectiveness. Furthermore, it should be noted that there is a tendency to overestimate a product or a promotional incentive when it is presented in a different way than the other competitors (Inman et al., 1990; Smith and Burns, 1996; Valenzuela et al., 2013).

Starting from the positive synergistic effect between the merchandising (commonly understood as ‘display’) and price promotions, we expect this effect remains positive if the merchandising techniques are broken down into end of aisle and islands. Both techniques, despite their different characteristics, have a common objective, which is simply to boost and encourage stimulated product’s purchase (Bemmaor and Mouchoux, 1991; Samson and Little, 1988) trying to optimize selling space (Mourton, 1990). While price promotions attract attention of a set of price-sensitive buyers, merchandising techniques, both end of aisle and island, do it on more impulsive buyers who need less information (Cricq and Bruel, 1975; Diez de Castro et al., 2006; Inman et al., 1990; Mourton, 1990). However, the special presentations of the products also serve to give greater visibility to the stimulated products and help spread out the promotional efforts made on them, it means, they provide consumers become aware of promotions (Blattberg et al., 1995; Lemon and Nowlis, 2002; Smith and Burns, 1996). This helps consumers to value the proposal of saving money, and ultimately, it promotes the test of product and brand switching (Bezawada et al., 2009; Samson and Little, 1988). Consistent with this, we propose the following hypothesis:

\[ H_2a: \text{The combination of ends of aisle with price promotions produces a positive synergistic effect.} \]

\[ H_2b: \text{The combination of islands with price promotions produces a positive synergistic effect.} \]

However, although the two techniques have a positive synergistic effect, it is possible that promotions’ moderation occurs with different intensity. The island is a more aggressive stimulus and it is located far of its usual placement (Diez de Castro et al., 2006; Varley, 2006). Therefore, it has a greater effect on impulsive buyers which do
not need to walk up the aisle, where the rest of competing brands are, in order to compare prices or other information (Inman et al., 1990). In many cases, they even assume significant price discounts on products placed on the islands even if they do not have one (Smith and Burns, 1996). Because of this, price discounts may be less relevant in these decisions. Consequently, the combination with a price promotion may have a lower potentiating effect. Instead, the ends of aisle are at the end of the shelf where the competing brands are located. Many consumers attracted to this presentation who had decided to buy this type of product and, in any case, they have a faster access to the comparison between the different alternatives (Valenzuela et al., 2013). It is to remember that one of the objectives of the ends of aisle, usually mentioned in the literature, is to attract consumers to a particular area of the establishment (Samson and Little, 1988; Varley, 2006). The possibility of a faster comparison between different brands entails that the success of an end of aisle is more conditioned to the existence of any incentive that once captured the attention of consumers motivates them to buy. In other words, the contribution of the ends of aisle is more linked to the potentiation of the effect of price promotions than the only capture impulsive purchases. Therefore, we expect the combination ends of aisle with a price promotion markedly intensify the effect on sales (Varley, 2006). So:

\[ H2c: \text{The synergistic effect between end of aisle and price promotion is bigger than synergistic effect between the island and price promotion.} \]

3.2.3. Temporary effect of end of aisle and islands

Several previous academic contributions have approached the impact of promotions from a time perspective and have tried to study its short-term and long-term consequences (Ailawadi et al., 2006; Blattberg et al., 1995, Chan et al., 2008; Gupta, 1988; Hans and Gijsbrechts, 2011; Leeflang et al., 2008; Pauwels et al., 2002; Van Heerde et al., 2003). In this regard, we note that there is no clear consensus in the literature.

We can distinguish two main issues related to the impact of a commercial stimulus: on one hand, the development of sales when the stimulus is prolonged and, on the other hand, the development of sales once the stimulus have finalized. Focused primarily on the extension of the stimulus and also in the context of promotions, the
academic literature provides two opposing effects. The stimulus’ diffusion between consumers can generate promotion requires a period of time to impact on sales. That is, sales would grow as the promotion prolong during a reasonable time (Blattberg et al., 1995). Instead, the initial use of the advantages of a promotion can also make its interest fall down when it is prolonged (Díez de Castro et al., 2006). In short, the promotion’s effect on sales tends to decrease because the number of consumers who can benefit from it is more reduced (Ataman et al. 2010; Macé and Neslin, 2004; Mela et al., 1998; Kopalle et al., 1999).

Now, focused on the stimulus termination, most authors support the idea that disloyal buyers are attracted during the promotion and, therefore, when they return to buy the same product category, they buy the promoted model at that time (Volle, 2001). In addition to this, whether buyers are loyal or not, it may exist a stockpiling effect which will reduce sales in the next weeks (Blattberg et al., 1995; Blattberg and Neslin 1989; Kopalle et al. 1999; Pauwels et al., 2002; Van Heerde et al., 2000; Van Heerde et al., 2004). This post-promotion negative effect can last between 6 and 8 weeks depending on the characteristics of product category (Ataman et al., 2010; Pauwels et al., 2002; Van Heerde et al., 2000; Van Heerde et al., 2004).

However, others researchers indicate there is no temporary effect remarkable because sales returns to the same level after the promotion (Bawa and Shoemaker, 1987; VIlcassim and Chintagunta, 1992). Even, some researchers defend the idea that there is a positive effect after the promotion because the test is habit forming (Keane, 1997) or create booster purchase (Ailawadi et al., 2007), which would be consistent phases with purchasing choice models (Armstrong and Kotler, 2007; Evan et al., 2006). As an evidence of consensus does not exist, it includes various studies by the same research group provide conflicting evidence on the effects post-promotional (Ailawadi et al., 2007; Blattberg and Neslin, 1989; Blattberg and Neslin, 1993; Neslin et al., 1985; Neslin and Shoemaker, 1989; Neslin and Stone, 1996; Macé and Neslin, 2004).

We are not aware of this potential post-promoting effect has not been studied in the case of merchandising techniques, especially whether we distinguish between ends of aisle and islands.

However, the goal of merchandising techniques is to highlight, show and make the product known and, finally, cause a switch (Samson and Little, 1988). Thus, it is expected that the positive effect of ends of aisle and islands techniques will be
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consolidated during the period of stimulation, bearing in mind that these periods are not too extended as recommended in some studies, such as Samson and Little (1988) or Diez de Castro et al. (2006). Similarly, it is expected that the positive effects after the conclusion of these presentations are greater than the negative effects.

The ends of aisle contribute to the visibility of the products and some of the attracted customers will continue to buy the stimulated product. However, we do not expect a large negative effect resulting from the anticipation of purchases and stockpiling of products, unless there is a promotional incentive that leads consumers to predict a loss for future purchases (Ataman et al., 2010; Blattberg et al., 1995; Pauwels et al., 2002; Van Heerde et al., 2000; Van Heerde et al., 2004). Thus, the hypotheses in this regard are:

\[ H3a: \text{The temporary extension of an end of aisle has a positive effect on stimulated product's sales.} \]

\[ H3b: \text{The temporary extension of an island has a positive effect on stimulated product's sales.} \]

\[ H4a: \text{The end of aisle has a positive effect on product's sales once the stimulus is concluded.} \]

\[ H4b: \text{The island has a positive effect on product's sales once the stimulus is concluded.} \]

3.3. Methodology

3.3.1. Data

The used data in this study has been compiled in one representative store from one of the largest European retailers in the food sector with the highest sales rates (PLMA, 2011). These data offer information on sales rate, merchandising techniques, and sales prices during a time period of ten weeks for all the products registered under two big categories: milk and liquid soap or gel. The information about merchandising techniques, especially at end of aisle and islands was verified on site.
The reason for choosing such two different categories of product is due to the numerous previous studies which have proven that the characteristics of the product object of study are crucial in evaluating the effects of promotions and other merchandising techniques applied (Ailawadi et al., 2006; Bemmar and Mouchoux, 1991; Blattberg et al., 1995; Gupta, 1988; Inman et al., 2009; Jones et al., 2003; Pauwels et al., 2002). These two product categories can provide information about opposite variables, such as the frequency of purchase or the expiration of the product, as milk presents a higher purchase frequency and a lower expiration period than liquid soap or gel. Furthermore, other differences such as the number of competitors or the concentration of the category can be observed. Within these two categories, all the products that showed a market share as low as 0.05% or lower were ruled out from the study, due to the fact that their data would barely contribute to the merchandising techniques and sales rate variables that are objects of our study. The main data collected from the samples are shown in Table 3.1. It shows the number of references and observations collected for each product category, as well as the effects of merchandising techniques and price promotions.

<table>
<thead>
<tr>
<th>Table 3.1. Sample descriptive</th>
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<tbody>
<tr>
<td><strong>MILK</strong></td>
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<tr>
<td>SKUs</td>
</tr>
<tr>
<td>SAMPLE</td>
</tr>
<tr>
<td>MERCHANDISING</td>
</tr>
<tr>
<td>End of Aisle</td>
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<tr>
<td>Island</td>
</tr>
<tr>
<td>PROMOTION</td>
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<tr>
<td>Discount</td>
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</tbody>
</table>

3.3.2. Empirical analysis

The method used for this study differs from that of other multiple studies in this field. While most studies compile data about a few product references during long periods of time, our study compiles data on a large number of product references during a short period of time. This method will provide higher chances of generalizing the results obtained from the study. However, this method also implies that, due to the need of comparing sales from very different product references, the dependent variable will have to be studied from a relative perspective, rather than absolute. For this very same
reason, the dependent variable object of our study is the variation of sales compared to the average sales of the same product within the period of time in which it was not stimulated with any type of price promotions or any other merchandising techniques.

Table 3.2 shows the main variables in the study.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>$SV_{it}$ - SALES VARIATION</td>
<td>It marks the sales variation of the product reference $i$ during week $t$ compared to the average sold units of the same product $i$ during the weeks in which it is sold without any type of stimuli.</td>
</tr>
<tr>
<td>$SVC_{it}$ - SALES VARIATION CATEGORY</td>
<td>It indicates the sales variation of the product category as a whole during week $t$ in regard to the average sales rate of the ten-week period of the study.</td>
</tr>
<tr>
<td>$EOA_{it}$ - END OF AISLE</td>
<td>It indicates if product $i$ is displayed at the end of the aisle where the rest of products are during week $t$. It equals 1 if the product $i$ is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>$EOACOM_{it}$ - END OF AISLE COMPETITORS</td>
<td>It indicates the actions of the competitors of the product reference $i$ during week $t$ regarding end of aisle. It was calculated with a sum of the $EOA_{it}$ variable for all the competitors during week $t$, although it was weighted by the market share (except for $i$) of each competitor.</td>
</tr>
<tr>
<td>$ISL_{it}$ - ISLAND</td>
<td>It indicates if product $i$ is displayed on the island in the middle of a main aisle during week $t$. It equals 1 if the product $i$ is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>$ISLCOM_{it}$ - ISLANDS COMPETITORS</td>
<td>It indicates the actions of the competitors of the product reference $i$ during week $t$ regarding island. It was calculated with a sum of the $ISL_{it}$ variable for all the competitors during week $t$, although it was weighted by the market share (except for $i$) of each competitor.</td>
</tr>
<tr>
<td>$PRO_{it}$ - PROMOTION</td>
<td>It indicates the price discount on the product reference $i$ during week $t$, as a proportion over the regular price.</td>
</tr>
<tr>
<td>$PROCOM_{it}$ - AVERAGE PROMOTION COMPETITORS</td>
<td>It indicates the average discount level expressed as a percentage of the competitors of the product reference $i$ during week $t$. It was calculated with a sum of the $PRO_{it}$ variable for all the competitors during week $t$, although it was weighted by the market share (except for $i$) of each competitor.</td>
</tr>
</tbody>
</table>

Notes: $i$ is the SKU for which we collect information; $t$ is the week in which the information is collected.

We checked whether the necessary assumptions of normality, linearity and homoscedasticity are met. In addition, we find that there is no multicollinearity between
the variables based on an analysis of tolerance and vif (Hair et al., 1998). Then, we propose a set of linear multiple regression models. Model 1 analyzes the direct effect of end of aisle and islands on sales rates. Model 2 incorporates the price promotions or discounts effect. Model 3 adds the interactions between both merchandising techniques and the price promotions. Thus, we proposed the following models:

\[(1) \quad S_{it} = \alpha + \beta_1 SVC_{it} + \beta_2 EOA_{it} + \beta_3 EOACOM_{it} + \beta_4 ISL_{it} + \beta_5 ISLCOM_{it} + \epsilon_i \]

\[(2) \quad S_{it} = \alpha + \beta_1 SVC_{it} + \beta_2 EOA_{it} + \beta_3 EOACOM_{it} + \beta_4 ISL_{it} + \beta_5 ISLCOM_{it} + \beta_6 PRO_{it} + \beta_7 PROCOM_{it} + \epsilon_i \]

\[(3) \quad S_{it} = \alpha + \beta_1 SVC_{it} + \beta_2 EOA_{it} + \beta_3 EOACOM_{it} + \beta_4 ISL_{it} + \beta_5 ISLCOM_{it} + \beta_6 PRO_{it} + \beta_7 PROCOM_{it} + \beta_8 EOA_{it} \times PRO_{it} + \beta_9 ISL_{it} \times PRO_{it} + \epsilon_i \]

Then, we introduced a set of dummy variables in order to collect temporary effects such as extension and conclusion’s stimuli in Model 4. In addition, Model 5 also takes into account the price promotion effect. Thus, these following functional relations were proposed:

\[(4) \quad S_{it} = \alpha + \beta_1 SVC_{it} + \beta_2 EOA_{it} + \beta_3 EOAYY_{it} + \beta_4 EOAYN_{it} + \beta_5 EOACOM_{it} + \beta_6 ISL_{it} + \beta_7 ISLYY_{it} + \beta_8 ISLYN_{it} + \beta_9 ISLCOM_{it} + \epsilon_i \]

\[(5) \quad S_{it} = \alpha + \beta_1 SVC_{it} + \beta_2 EOA_{it} + \beta_3 EOAYY_{it} + \beta_4 EOAYN_{it} + \beta_5 EOACOM_{it} + \beta_6 ISL_{it} + \beta_7 ISLYY_{it} + \beta_8 ISLYN_{it} + \beta_9 ISLCOM_{it} + \beta_{10} PRO_{it} + \beta_{11} PROCOM_{it} + \epsilon_i \]

Where the new variables are:

- EOAYY\textsubscript{it} is a dummy variable that has no null value when the product reference i was displayed at the end of aisle during week t having been stimulated during the previous week t-1, too. It shows weeks in which end of aisle is prolonged.

- ISLYY\textsubscript{it} is a dummy variable that has no null value when the product reference i was displayed on the island during week t having been stimulated during the previous week t-1, too. It shows weeks in which island is prolonged.

- EOAYN\textsubscript{it} is a dummy variable that has no null value when the product reference i was NOT displayed on the end of aisle during week t having been stimulated during the previous week t-1. It shows weeks in which end of aisle concludes.
ISLYNit is a dummy variable that has no null value when the product reference i was NOT displayed on the island during week t having been stimulated during the previous week t-1. It shows weeks in which island concludes.

3.4. Analysis and Results

3.4.1. Direct and synergistic effects

Table 3.3 shows the estimation results for the proposed model, which is aimed at analyzing the direct effects of the end of aisle and islands, as well as the moderating role that price promotions play. For each one of the product categories were proposed three models: the first one studies only the direct effects of end of aisle and islands, the second one studies the effects of the price promotions too, and the third one includes the interactions between these two elements.

<table>
<thead>
<tr>
<th>Table 3.3. Estimation of direct effects and interactions</th>
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<tbody>
<tr>
<td><strong>MILK</strong></td>
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<tr>
<td><strong>Model 1</strong></td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>Sales Variation of Category</td>
</tr>
<tr>
<td>End of Aisle</td>
</tr>
<tr>
<td>Ends of Aisle of Competitors</td>
</tr>
<tr>
<td>Island</td>
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<tr>
<td>Islands of Competitors</td>
</tr>
<tr>
<td>Discount</td>
</tr>
<tr>
<td>Average Discount of Competitors</td>
</tr>
<tr>
<td>Interaction End of Aisle-Discount</td>
</tr>
<tr>
<td>Interaction Island-Discount</td>
</tr>
<tr>
<td>Adjusted R²</td>
</tr>
<tr>
<td>F Test</td>
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</tbody>
</table>

*p<0.1, **p<0.05, ***p<0.001; ns: no significative \( p>0.10 \)

The results show that the two merchandising techniques, both the end of aisle and islands, have a significant and positive effect (p<0.01, except for the end of aisle in the milk category, in which p<0.10). These results conclude that after analyzing the
merchandising efforts within the two techniques previously mentioned, both of them have positive effects on the stimulated product sales. This result confirms H1a and H1b. It was also observed that the variables that gather the efforts of the competitors have an opposite influence on the sales of a specific product reference, that is to say, the more items from the competitors are stimulated with these merchandising techniques, the less will the sales of the product reference be. This result shows that the analyzed merchandising techniques work well, as they increase the sales of stimulated reference at the expense of not stimulated ones.

There exist also differences between the two product categories in terms of relative importance of end of aisle and islands (test difference of parameters for island and end of aisle in Model 1: F = 17.45, p<0.01, for milk, and F = 49.05, p<0.01, for gel). The results for the milk category are aligned with H1c: islands are more effective than ends of aisle. However, this effect turns out to be the opposite one in the case of the liquid soap or gel. So, we must reject H1c. This difference is due to the characteristics of each category. Milk has a high frequency of purchase, and given this fact consumers do not plan on buying it, as they are already used to purchasing it without the necessity of writing it down on the grocery list. Thus, the effectiveness of milk products targeted with merchandising techniques is higher when displayed in main aisles as they are more perceptible there (Inman et al., 2009; Varley, 2006). In addition, being milk a frequently consumed product, various profile customers might “get tired” of consuming the very same product. Therefore, customers are more predisposed due to their willingness to innovate or due to their supposed knowledge of the category and, consequently less risk perception, to switching to a different brand (Chaudhuri, 2000; Laurent and Kapferer, 1985). On the contrary, if the customer has written down a certain product category on his or her grocery list, that customer will most likely head to the aisle where that product category is located and, as a consequence, will be more influenced by commercial stimulus such as the end of aisle (Inman et al., 2009). Either way, results confirm that the relative importance of the ends of aisle and islands may depend on the nature of the product that is being stimulated.

Regarding price promotions, results show that the bigger is the price discount on the product, the higher the sales rate will be for both product categories. No significant connections were found in the promoting actions of the competitors. It is worth mentioning, however, that the promoting efforts for a product reference can also
stimulate the sales of other product references (Leeflang et al., 2008). When a product reference is stimulated, this reminds the customers that they need that product, or that they are going to need it within a short period of time, therefore the overall sales rate of the whole category will raise (Leeflang et al., 2008; Parreño-Selva et al., 2009; Pauwels et al., 2002).

Regarding the synergistic effect between the merchandising techniques and the promotions, there exist several differences in the results for each one of the techniques studied. Results show that for the island the effect is not significant, while for the end of aisle, as well as having more importance in both product categories, the effect is significant (p<0.01) in the case of the gel and significantly higher in comparison with the effect of end of aisle (test difference of interaction parameters in Model 3: F = 6.05, p<0.05, for gel). This result makes we must reject H2b, because the effects are positive, but not significant. Although, it is in line with H2a and H2c, at least for gel category. It all seems to prove that the end of aisle plays a more decisive role when complementing the price promotions. Less impulsive and more price-oriented customers feel more attracted to price promotions, and the end of aisle become more useful for making the promoted products stand out, therefore empowering the effects of the promotions. This effect is less noticeable in the case of the islands, due to the fact that the price-sensitive customer is more likely to look for information (Inman et al., 1990), which leads the customer to head to the aisle where the analyzed product is located in order to compare the different options. This way, the end of aisle will have a more synergistic effect with the price discounts due to its proximity to other competitors’ references, which allows customers to compare their prices and therefore notice this additional discount. Either way, the differences observed from the product categories seem to point out that the nature of the product category plays a moderating role in the effects of the commercial stimulus studied. This result is in line with numerous previous studies (Bolton, 1989; Macé and Neslin, 2004; Pauwels et al., 2002; Raju, 1992).

### 3.4.2. Temporary effects

Table 3.4 shows the estimation result of the second model proposed, aimed at analyzing the temporary effects resulting from the extension or the finalization of end of aisle and islands.
The results obtained are in line with the ones obtained in the previous model, although in this case the extension of the stimulus is explicitly studied. Once again, the effects of displaying islands are more noticeable than ends of aisle in the case of milk category products, while the effects are the opposite in the case of the gel. For both categories, an extension of the most effective stimulus, that is to say, the islands for the milk and the ends of aisle for the gel have positive and significant effects. In other words, a diffusion effect happens that increases the sales rates during the later weeks to the implementation of the stimulus. This result partially confirms H3a and H3b. No significant signs of a saturation effect are observed in any case, that is to say, a reduction of the impact of the stimulus within the following weeks to its implementation. It is important to bear in mind that both the end of aisle and the islands tend to exist for a reduced period of time (around 2 or 3 weeks maximum), which prevents these negative effects.

<table>
<thead>
<tr>
<th>Table 3.4. Estimation of temporary effects</th>
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<tbody>
<tr>
<td><strong>MILK</strong></td>
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<tr>
<td>Model 4</td>
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<tr>
<td>Constant</td>
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<tr>
<td>Sales Variation of Category</td>
</tr>
<tr>
<td>End of Aisle</td>
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<tr>
<td>End of Aisle Extension</td>
</tr>
<tr>
<td>End of Aisle Conclusion</td>
</tr>
<tr>
<td>Ends of Aisle of Competitors</td>
</tr>
<tr>
<td>Island</td>
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<tr>
<td>Island Extension</td>
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<tr>
<td>Island Conclusion</td>
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<tr>
<td>Islands of Competitors</td>
</tr>
<tr>
<td>Discount</td>
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<tr>
<td>Average Discount of Competitors</td>
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<tr>
<td>Adjusted R²</td>
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<td>F Test</td>
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</tbody>
</table>

*p<0.1, **p<0.05, ***p<0.001; ns: no significative \( p>0.10 \)

Regarding the effects of the termination or finalization of the stimulus, only positive effects are observed in the case of the end of aisle for the gel category. This implies that there exists an inertial effect due to the familiarization of the customers.
with the product reference that is stimulated, in line with previous papers as Ailawadi et al. (2007); Keane (1997) or Neslin and Stone (1996); which counteracts the possible negative effect of an accumulation of such reference by the customers. No significant effects were observed for the remaining stimulus and categories. This result partially confirms H4a, while it shows no evidence in favor of H4b.

Table 3.5 summarizes the obtained results regarding analyzed hypothesis.

### 3.5. Conclusions

Despite the growing importance of merchandising techniques in the communication budget, there exist not many studies that analyze and compare the effects of different tools. We respond to the demand of researches and provide empirical evidence about the effect of the two most important merchandising techniques, ends of aisle and islands, on sales rate. Additionally, we have provided evidence about the effects of its combination with price promotions and its prolongation or interruption in time. The results confirm the importance of both stimuli, ends of aisle and islands, in capturing the attention of consumers and encourage sales. They also suggest that ends
of aisle play a greater role in supporting price promotions, in line with its greater proximity to other brands that make up the product category and easy to make comparisons without much extra effort. The results also suggest that the extension and termination of the period of stimulation are aspects to be taken into account in assessing the overall impact of the stimuli of merchandising. A reasonable extension in time contributes to the consolidation of the positive effects on sales.

The results are useful for manufacturers and retailers in order to achieve the most favorable response from consumers who visit the point of sales. The unplanned purchases in store are growing and they are largely influenced by commercial incentives within it (Bell et al., 2011; Bezawada et al., 2009; Inman et al., 2009). For this reason, it is vital to understand the idiosyncrasies of each merchandising tool to optimize its application.

A first implication of this study, from an academic and a professional point of view, is the need to analyze separately the different stimuli of merchandising. The majority of empirical academic studies simplifies these stimuli to a single variable, without considering explicitly the differential effects of the various initiatives. We show that, even though all the merchandising techniques have favorable effects on sales rates, their role is very different. Although we only analyze two categories of product, in both cases there exists a differential impact between the ends of aisle and the islands. Obviating these differences is a waste of opportunities to optimize merchandising strategy.

As a second implication for management, we must stress the importance of merchandising techniques as complements to other commercial stimuli, including promotional ones. Moreover, every merchandising stimulus has very different potential supporting promotional campaigns because they differ in their ability to influence on different types of consumers, for example, the price sensitive ones or the impulsive ones. The joint use of merchandising and promotional stimuli may be another important aspect to optimize the contribution of consumers at the point of sale. For example, we should note that ends of aisle attract the buyer’s attention to the area in which are located other competitor references, which presents a lower cost of searching information and a greater access to comparing prices, formats, etc. This fact makes advisable to add a promotional incentive so that the buyer believes that the stimulated brand is the best choice. On the contrary, the islands do not require offering a
promotional incentive because they are focused on influencing the impulsive buyers which are less concerned about the price. The consumers often attribute promotional benefits even if they do not exist. Moreover, the location of the islands makes the comparison with other competing brands less accessible.

Another important implication to consider is the relevance of the temporary perspective in planning merchandising stimuli. The same way it happens with promotional incentives, we should take into account both diffusion and saturation effects that may result from the extension of the stimulus, such as the effects of inertia or relapse from the termination of the stimulus. Therefore, in order to get the best performance of a campaign, besides the selection of stimulus merchandising and its combination with other commercial stimuli, we must consider the stimuli’s duration. In this regard, merchandising actions may benefit from a moderate extension that allows their dissemination to customers. Additionally, the ability of merchandising activities to capture new customers can prolong the positive effects after the campaign.

A last implication, of great importance, is the role played by product category. Aspects such as purchase frequency, expiration date or hedonic or impulsive character are crucial for studying the impact of different merchandising or promotional stimuli because they are associated with the perceived risk, the accelerating of purchase or stockpiling, which may cause enormous changes in the results. Several previous studies have already demonstrated the moderating role of very diverse product’s characteristics on the impact of commercial incentives. For example, purchase frequency (Ailawadi et al.; 2006; Bawa, 1996; Fader and Lodish, 1990; Inman et al., 2009; Narashiman et al. 1996) or expiration (Gupta, 1988; Pauwels et al. 2002). Also, the impulsive nature of the category (Jones et al., 2003) beyond the consumer impulsiveness may be a key moderating the impact of promotional stimuli in different product categories.

The results of this study should be interpreted with some caution. The paper focuses exclusively on two product categories with different trends regarding the use of this type of stimuli. Furthermore, it has had only a limited time period.

Therefore, the analysis may be influenced by the frequency of use of the techniques of merchandising and price promotions in these categories, and their combined use. Finally, we have not considered some characteristics of the analyzed techniques, such as the distance between the special and the usual presentation, or commercial stimuli: some linked to merchandising, for example the use of posters, and
others linked to the external product diffusion, for example the use of flyers or brochures.

3.6. References


Chapter 3. Merchandising at the point of sale: differential effect of end of aisle and islands


CHAPTER 4. EFFECTIVENESS OF MERCHANDISING TECHNIQUES IN HEDONIC & UTILITARIAN CATEGORIES
4.1. Introduction

The importance of unplanned purchase continues to grow each year (Bell et al., 2011). These purchases are defined as purchases of a product that are made without having previously planned the acquisition of that product category or if the category has planned, without having planned the product brand (Inman et al., 2009; Bell et al., 2011). These purchases decided within the establishment represent about 70% of total purchases (Bell et al., 2011; Bezawada et al., 2009; Stilley et al. 2010). However, unplanned purchases do not occur at the same proportion for all types of products (Bell et al., 2011), as well as commercial stimuli differently affect depending on the characteristics of stimulated product category (Narashiman et al., 1996; Ailawadi et al., 2006). In this line, some authors have analyzed whether the hedonic nature of a product causes increased effectiveness of certain commercial incentives, which encourage unplanned purchases, such as merchandising techniques and promotions (Chandon et al., 2000; Inman et al., 2009).

Merchandising techniques are any special presentations of the product within the establishment to attract attention and increase their sales (AMA). They can be of different types, as special presentations that move the product to another location (islands or ends of aisle) or special presentations that do not change the usual place of the product in the store (signages or extensions of shelf space) (Tellis, 1998; Varley, 2006). Therefore, merchandising techniques have different characteristics which cause a distinct influence on the consumer (Buttle, 1984; Samson and Little, 1988; Tellis, 1998; Varley, 2006). Some of these techniques such as islands or ends of aisle separate the product from its competitors by restricting the information on alternatives and this cause a more emotional and impulse response (Shiv and Fedorikhin, 1999; Suh, 2009). Other techniques such as signages or extensions of shelf space allow consumers to compare information on alternatives and this cause a more analytical and reasoned decision (Shiv and Fedorikhin, 1999; Suh, 2009). Despite these differences in the way they influence or their effectiveness on consumers, we do not find previous studies that compare the effectiveness of several of these techniques as Breugelmans and Campo (2011) do for online groceries. Most empirical studies that consider the effectiveness of merchandising use a single dummy variable *display* that takes a positive value if the product is stimulated with any of the various techniques of merchandising such as ends...
of aisles, islands, shelf space, etc. (see Ailawadi et al., 2006; Inman et al., 2009; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004; Woodside and Waddle, 1975). By doing so, these authors simplify reality, since they gather any merchandising tool into a single variable and, therefore, assume that all these tools have the same effectiveness. Studies that perform a more in-depth analysis, usually focus on one merchandising technique in particular, such as the extension of shelf space (Chandon et al., 2009; Valenzuela et al., 2013), the use of end of aisles (Bemmaor and Mouchoux, 1991; Lemon and Nowlis, 2002) or the use of piles or islands in main aisles (Smith and Burns, 1996). Among the most recent studies, Inman et al. (2009) indicate merchandising techniques and product category characteristics may influence on unplanned purchase. In particular, they analyze the hedonic or utilitarian nature of a product category, and indicate that hedonic products are more susceptible to an unplanned purchase decided in the store that utilitarian products. Therefore, the product nature may boost or discourage the unplanned purchase linked to emotions and induced by merchandising techniques that take place within the store (Bezawada et al., 2009). However, they do not analyze whether hedonic categories are more affected by the merchandising, let alone what merchandising techniques (islands, ends of aisle or signages) are the more effective for hedonic products and what are for utilitarian products. In this line, the hedonic products are purchased in a more emotional and spontaneous response (Batra and Ahtota, 1990; Hirschman and Holbrook, 1982; Suh, 2009), therefore, we expect merchandising techniques that trigger this type of response (islands, ends of aisle) are more appropriate to them. While utilitarian products are purchased in a more cognitive and rational response (Batra and Ahtola, 1990; Hirschman and Holbrook, 1982; Suh, 2009), therefore, we expect merchandising technique such as signages work better in this type of products. This lack of studies that compare the effectiveness of various merchandising techniques may be due to the difficulty to obtain detailed information on several of these tools used within the store. This information is not usually recorded in the retailer’s computer system and, therefore, it is required that researchers do periodic visits, which is a great effort, or it is collected by marketing data providers.

Regarding promotions, they also increase unplanned purchases, studies are more developed and we find various academic papers that try to analyze how retailers can optimize this resource (Ailawadi et al., 2007; Ailawadi et al., 2009; Chandon et al., 2009; Inman et al., 2009; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004; Woodside and Waddle, 1975).
2000; Hardesty and Bearden, 2003; Leeflang and Parreño-Selva, 2012; Palazón and Delgado-Ballester, 2009). Some of these papers classify promotions to analyze their effectiveness depending on their characteristics and distinguish between price promotions (e.g. offering a price reduction) or product promotions (e.g. offering an extra product advantage, such as a sample or gift, an extra product amount, a “pay 2 and get 1 free”) (Hardesty and Bearden, 2003). Furthermore, we find studies which analyze if different characteristics of the product category, as its hedonic or utilitarian nature explain the effectiveness of promotions (Chandon et al., 2000; Okada, 2005; Wakefield and Inman, 2003), but there not exist consensus. Some of them indicate consumers have a higher need to justify hedonic purchases and, therefore, price promotions are more effective on hedonic products (Okada, 2005; Zheng and Kivetz, 2009). However, other studies indicate that hedonic purchases are less sensitive to price (Wakefield and Inman, 2003) or propose a congruency framework in which price promotion work better on utilitarian products while product promotion do it on hedonic products (Chandon et al., 2000). In this study, we try to clarify what type of promotion (price or product promotions) are more appropriate to hedonic products and what type to utilitarian products. Thus, consumers search emotions or feelings such as fun, pleasure when they buy hedonic products (Batra and Ahtola, 1990; Hirschman and Holbrook, 1982; Suh, 2009) therefore, we expect product promotions which trigger this type of response are more appropriate to them. While consumers search functional or rational benefits when they buy utilitarian products (Batra and Ahtola, 1990; Hirschman and Holbrook, 1982; Suh, 2009) therefore, we expect price promotions work better for this type of products.

In sum, we find a gap between theoretical studies that distinguish different merchandising techniques and explain their operation depending on their characteristics, and empirical studies that gather all the techniques in a single variable or that focus on the study of one of them (Ailawadi et al., 2006; Inman et al., 2009; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004; Woodside and Waddle, 1975) and, therefore, they cannot explain in which situations or on what types of products are more profitable the analyzed techniques. Furthermore, we find studies that analyze the suitability of different types of promotions on hedonic or utilitarian products (Chandon et al., 2000; Okada, 2005; Wakefield and Inman, 2003), but they do not reach the same conclusions. Our study aims to contribute to the literature on marketing and retail in this sense, by performing a comparative empirical analysis of the effectiveness of different
techniques of merchandising and different types of promotions, in order to know what type of commercial stimuli may be more effective and appropriate to improve the sales of hedonic or utilitarian products.

In the next section we review a) the previous literature about the influence of the hedonic nature of the product category on the buying behavior, b) the previous literature that distinguishes between merchandising techniques most used by retailers and, c) the previous literature that classify promotions, in order to propose a number of hypotheses about the suitability of these techniques depending on the hedonic or utilitarian nature of the product. Subsequently, we describe the used methodology for performing the empirical analysis in order to contrast the hypotheses above. Then, we analyze the results of the empirical analysis. Finally, we present the conclusions that shed light on the effectiveness of several commercial stimuli on hedonic vs utilitarian products, which allow us to give advice to the retailers and manufacturers on the use of different types of merchandising techniques and promotions depending on product’s nature.

4.2. Previous Literature Review and Hypotheses

4.2.1. Hedonic & Utilitarian nature of product categories

The characteristics inherent in the product category can decisively influence on the effectiveness of a commercial stimulus (Narashiman et al., 1996; Ailawadi et al., 2006; Inman et al., 2009). One of the characteristics of the category, which is becoming more important in recent years is the hedonic or utilitarian motivation associated to the product category (Chandon et al., 2000; Inman et al., 2009; Okada, 2005; Palazón and Delgado-Ballester, 2013; Shiv and Fedorikhin, 1999; Sloot et al., 2005; Suh, 2009; Wakefield and Inman, 2003; Yeung and Wyer, 2004).

This characteristic classifies products based on the benefits sought by the consumer when purchase them. Consumers can acquire products seeking emotional or functional benefits and, therefore, the product can be classified as a hedonic or utilitarian product, respectively (Ahtola and Batra, 1990; Hirschman and Holbrook, 1982). Thus, products are classified as hedonic if consumer acquires them taking into account their emotional or experiential motivations related to pleasure, entertainment or...
fun (Dhar and Wertenbroch, 2000; Hirschman and Holbrook, 1982; Wakefield and Inman et al., 2003). By contrast, products can be classified as utilitarian if consumer buys them mainly considering functional motivations related to their usefulness or their practical nature (Dhar and Wertenbroch, 2000; Park and Moon, 2003; Wakefield and Inman et al., 2003).

Moreover, the process that leads consumers to purchase a hedonic product category is different from the process that leads to the purchase of a utilitarian category. On one hand, when consumers acquire a hedonic product, they do it through an emotional process in which subjectively assess the product’s ability to cause certain feelings or emotions taking account their past experiences (Dhar and Wertenbroch, 2000, Park and Moon, 2003; Wakefield and Inman, 2003). Some authors such as Shiv and Fedorikhin (1999) or Suh (2009) consider this affective process is spontaneous and intuitive, since consumers only consider their emotions and they do not need to search information about attributes or compare alternatives. If so, in-store stimuli such as merchandising techniques can cause their purchase by making more perceptible the product and triggering emotions to the consumer. By contrast, other authors like Okada (2005) or Zheng and Kivetz (2009) indicate that consumers need to justify their hedonic purchases because they can feel guilty to spend more money in this type of product which are not necessary or useful. However, the same Okada’s study also indicates that “A hedonic alternative tends to be rated more highly than a comparable utilitarian alternative when each is presented singly, but the utilitarian alternative tends to be chosen over the hedonic alternative when the two are presented jointly”, thus merchandising techniques can decisively influence on hedonic purchases.

On the other hand, if consumers decide to buy a utilitarian product, they do after a reasoned cognitive process in which they assess certain objective attributes that allow solving a functional problem or need (Babin et al., 1994; Batra and Ahtola, 1990; Park and Moon, 2003). Due to the functional purpose of utilitarian products, this process involves searching and analyzing information about objective attributes of the product (e.g. price) by consumers in order to optimize their utility (Suh, 2009). In fact, this type of product is more sensitive to price than hedonic products (Wakefield and Inman, 2003). If so, in-store stimuli more effective are those that allow compare information and cause a more favorable deal to the consumers. Table 4.1 summarizes the differences between hedonic and utilitarian products.
### Table 4.1. Characteristics of hedonic & utilitarian products

<table>
<thead>
<tr>
<th>Type of product</th>
<th>Acquired searching process</th>
<th>Buying process</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEDONIC</td>
<td>Emotional or affective benefits such as pleasure, entertainment or fun (Dhar and Wertenbroch, 2000; Hirschman and Holbrook, 1982; Wakefield and Inman et al., 2003)</td>
<td>Affective process in which consumers take into account their past experiences (Dhar and Wertenbroch, 2000; Park and Moon, 2003; Wakefield and Inman, 2003)</td>
</tr>
<tr>
<td></td>
<td>Spontaneous and intuitive process, consumers do not need to search information or compare alternatives (Shiv and Fedorikhin, 1999; Suh, 2009).</td>
<td>Spontaneous and intuitive process, consumers do not need to search information or compare alternatives (Shiv and Fedorikhin, 1999; Suh, 2009).</td>
</tr>
<tr>
<td></td>
<td>It is possible consumers need to justify their hedonic purchases because they can feel guilty (Okada, 2005; Zheng and Kivetz, 2009).</td>
<td>It is possible consumers need to justify their hedonic purchases because they can feel guilty (Okada, 2005; Zheng and Kivetz, 2009).</td>
</tr>
</tbody>
</table>

| UTILITARIAN     | Functional or practical benefits related to the usefulness (Dhar and Wertenbroch, 2000; Park and Moon, 2003; Wakefield and Inman et al., 2005). | Cognitive and reasoned process in which they assess how product allows solving a functional problem or need (Babin et al., 1994; Batra and Ahtola, 1990; Park and Moon, 2003). |
|                 | This process involves searching and analyzing information about objective attributes of the product (e.g., price) by consumers in order to optimize their utility (Suh, 2009). | This process involves searching and analyzing information about objective attributes of the product (e.g., price) by consumers in order to optimize their utility (Suh, 2009). |

Source: Prepared by the authors

#### 4.2.2. Merchandising

Merchandising is defined by the American Marketing Association as any technique that takes place within the store and is used by retailers or manufacturers in order to stimulate a product’s sales. These techniques can increase sales of a product between 77 and 400% in the short term (Woodside and Waddle, 1975; Wilkinson et al., 1982), while promotions do it in about 33% (Van Heerde et al., 2003; Ataman et al., 2010). Therefore, they may become far more effective than promotions. Moreover, these techniques may be not only more effective, but also more efficient or profitable. This is due to they do not have to carry a reduction of the margin for retailers as it happens with price promotions (Ailawadi et al., 2006; Ailawadi et al., 2007), but the opposite, taking into account the economic contributions made by the manufacturer to ensure that their brand is stimulated through these techniques (Ailawadi et al., 2009; Valenzuela et al., 2013). Therefore, merchandising is considered a tool with a higher benefit-cost ratio (Buttle, 1984) which improves retailers’ margins and it should be analyzed deeper in future research (Ailawadi et al., 2009).
These techniques can positively affect sales by making the product more perceptible by the consumer (Yeung and Wyer, 2004; Chandon et al., 2009), and especially have an impact on the early stages of the selection process, such as attention for and interest in the product (Evan et al. 2006). This is particularly important when we consider that consumers usually have a fairly fixed pattern of travel if they know the store (Larson et al., 2005). Thus, these techniques can cause that consumers pay their attention on a stimulated product and, therefore, it can become part of the set of considered options in the evaluation phase or choice (Yeung and Wyer, 2004; Chandon et al., 2009). The possibility to draw attention to the product within the store is still more important if we consider that unplanned purchases are growing and nowadays, represent around 70% of total purchases (Bezawada et al., 2009; Bell et al., 2011). In fact, Bezawada et al. (2009) maintain that without merchandising support, unplanned purchases would account for only 46% instead of 70% of the purchases.

Merchandising techniques aim to increase the perception of a stimulated product in order to be purchased by the buyer as a result of an emotional or cognitive response (Yeung and Wyer, 2004; Inman et al., 2009). However, each merchandising techniques have different characteristics which cause a distinct influence on the consumer (Buttle, 1984; Samson and Little, 1988; Tellis, 1998; Varley, 2006). On one hand, some merchandising techniques such as islands or ends of aisle separate the product from its competitors by restricting the information on alternatives and this cause a more emotional and impulse response (Shiv and Fedorikhin, 1999; Suh, 2009). On the other hand, other techniques such as signages or extensions of shelf space do not entail a separation from the competitors and allow consumers compare information on alternatives and this cause a more cognitive, analytical and reasoned decision (Shiv and Fedorikhin, 1999; Suh, 2009).

Despite these differences in the way they influence or their effectiveness on consumers, we do not find previous studies that compare the effectiveness of several of these techniques within the store as Breugelmans and Campo (2011) do for online groceries. Most empirical studies analyze merchandising effectiveness by using a single dummy variable display that is equal to one if the product is stimulated with any of the various merchandising techniques, and equal to zero otherwise (see Fader and Lodish, 1990; Woodside and Waddle, 1975; Wilkinson et al., 1982; Little, 1998; Van Heerde et al., 2000; Van Heerde et al., 2004; Ailawadi et al., 2006; Inman et al., 2009). By doing
so, these authors simplify reality since they gather any merchandising tool into a single variable and, therefore, assume that all these tools have the same effectiveness. Studies that perform a more in-depth analysis, usually focus on one merchandising technique in particular, such as the extension of shelf space (Chandon et al., 2009; Dréze et al., 1994; Valenzuela et al., 2013), the use of end of aisles (Bemmaor and Mouchoux, 1991; Lemon and Nowlis, 2002) or the use of stacks or islands in main aisles (Smith and Burns, 1996). However, none of them compare the effectiveness of several of these techniques even though they differ on important characteristics, which may affect the impact on consumer behavior (Buttle, 1984; East et al., 2003; Samson and Little, 1988; Tellis, 1998; Varley, 2006). Because of this, we distinguish between three different types of merchandising techniques. First, ‘islands’ are defined as a stack of a product in the middle of a main aisle (East et al., 2003; Smith and Burns, 1996; Varley, 2006), where the traffic of buyers is higher (Larson et al., 2005). This special presentation, which separate the stimulated product from the rest of competitors, mainly affect less analytical and more impulsive consumers who do not feel the need to search for information about the other category options (Bezawada et al., 2009). Second, ‘end of aisle’ displays provide a special location at the beginning of the aisle where the products in a given product category are located (Bemmaor and Mouchoux, 1991; Samson and Little, 1988; Varley, 2006). This special presentation can attract attention of consumers who have not planned to buy the product category, towards the aisle in which it is usually located (Bezawada et al., 2009; Inman et al., 2009). Third, product can be located in its usual location, but be stimulated with a special signage. In this case, the product is mainly perceived by consumers who have planned to make a purchase in the product category, and visit the aisle of the store where the category is located. Table 4.2 summarizes the different analyzed techniques.

The effectiveness of each these techniques depends on its ability to influence the product perception phase during the buying process, which will facilitate the product choice if the benefits provided by the product are consistent with the demanded ones by the consumer. In this sense, the hedonic or utilitarian nature may be key to a merchandising technique has a greater or lesser effectiveness on a particular product category.
Table 4.2. Types of analyzed merchandising techniques

<table>
<thead>
<tr>
<th>Type of technique</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISLAND</td>
<td>Special presentation of the stimulated product in a stack at the entrance of the store or in the middle of a main aisle where the traffic of buyers is higher.</td>
</tr>
<tr>
<td>END OF AISLE</td>
<td>Special presentation of the stimulated product at the entrance of the aisle where the rest of competitor’s products of the same category product are located.</td>
</tr>
<tr>
<td>SIGNAGE</td>
<td>Special presentation through a shelf tag or other mark. It takes place in the same shelf where the product is usually; therefore it does not represent a change of location, but it makes the product stand out on the shelf.</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors

Hedonic products are purchased by searching emotional benefits such as enjoyment, pleasure or leisure (Dhar and Wertenbroch, 2000; Kempf, 1999; Inman et al., 2009; Shiv and Fedorikhin, 1999; Suh, 2009). Thus, these products are acquired through an affective buying process more spontaneous and intuitive, in which the buyers only assess the stimulated product in response to their experiences or emotions (Shiv and Fedorikhin, 1999; Suh, 2009). Therefore, we expect merchandising techniques that work better for these hedonic products will be those that favor further this spontaneous and intuitive process. In this sense, information that consumers have about other purchase alternatives is key. In fact, a consumer without this information only attend to their emotions which cause more spontaneous and intuitive affective processes (Shiv and Fedorikhin, 1999; Suh, 2009); thus, it is more likely that hedonic products will be chosen (Dhar and Wertenbroch, 2000; Okada, 2005). On contrast, a consumer with this information usually performs a cognitive and reasoned process (Shiv and Fedorikhin, 1999; Suh, 2009); thus, it is more likely that utilitarian products will be chosen (Dhar and Wertenbroch, 2000; Okada, 2005).

The island complicates the information searching on competitor’s alternatives because it places the product further away from them (Tellis, 1998). By limiting this information, island triggers a spontaneous and intuitive process (Shiv and Fedorikhin, 1999; Suh, 2009). In this situation, consumers do not have any information about alternatives and they only attend to their emotions, therefore we expect island increases largely hedonic products’ sales.

The end of aisle is at the entrance of the aisle where all the alternatives to purchase the same category are located (Samson and Little, 1988; Varley, 2006). Thus,
consumers attracted by this technique have greater accessibility to information on alternatives than consumers attracted by the island. By facilitating access to information, consumers can choose to evaluate the product by paying attention to affective as well as cognitive considerations (Shiv and Fedorikhin, 1999). In fact, consumers may feel the need to justify the purchase of hedonic products whose purchase motivation is fun or pleasure (Okada, 2005; Zheng and Kivetz, 2009), and choose to evaluate other close alternatives. In this situation, we expect end of aisle has a lower effect than island on hedonic products’ sales.

The signage only increases the product’s perception of buyers that visit the area or aisle where the category that they had planned to buy is located because it does not entail a location change (Samson and Little, 1988; Varley, 2006). In this situation, it is more complicated that signage triggers a spontaneous and intuitive process, since consumer with full access to information about alternatives usually perform a cognitive and reasoned process (Shiv and Fedorikhin, 1999; Suh, 2009). Thus, the following hypotheses are proposed:

**H1a:** For hedonic products, islands are more effective than ends of aisle.

**H1b:** For hedonic products, ends of aisle are more effective than signages.

Utilitarian products are purchased by consumers taking into account functional benefits related to their usefulness or their practical nature (Dhar and Wertenbroch, 2000; Park and Moon, 2003; Wakefield and Inman et al., 2003). This causes that they are acquired through a cognitive and reasoned buying process in which consumers analyze information about alternatives in order to assess how these products allow solving a functional problem or needing (Babin et al., 1994; Batra and Ahtola, 1990; Park and Moon, 2003). Therefore, we expect merchandising techniques that work better for these utilitarian products will be those that favor further this cognitive and reasoned process, i.e., those that allow greater access to information.

The island entails a new product placement further away from other competitors, thus it complicates the comparison of alternatives and does not allow a cognitive and reasoned process (Shiv and Fedorikhin, 1999; Suh, 2009). Therefore, consumers are
uncertain about the stimulated utilitarian product is the alternative that causes more functional or practical benefits to them, so it is difficult they choose this alternative.

The end of aisle entails a new product placement close from the rest of competitors, thus, it allows greater access to information about alternatives than island (Tellis, 1998; Varley, 2006). Therefore, it is easier consumer perform a cognitive and reasoned process, which is linked to utilitarian purchases. We expect end of aisle has a greater impact on utilitarian products’ sales than island.

The signage is the merchandising techniques that allow full access to information about alternatives. It favors consumers compare alternatives through a cognitive and reasoned process in order to optimize their utility (Suh, 2009). Therefore, we expect signage is the merchandising technique that increases more the utilitarian products’ sales. Thus, the following hypotheses are proposed:

\[ H2a: \text{For utilitarian products, signages are more effective than ends of aisle.} \]

\[ H2b: \text{For utilitarian products, ends of aisle are more effective than islands.} \]

4.2.3. Promotions

Promotions are the most used commercial incentives by retailers and manufacturers. The purpose of these is to attract consumers to the stores, stimulate product category sales, and influence brand choice (Ailawadi et al., 2006; Mulhern and Padgett, 1995; Volle et al., 2001). Previous studies rate the promoted product’s sales growth at the short-term at about 33% (Ataman et al., 2010; Van Heerde et al., 2003). Given this importance, various academic papers that try to analyze how retailers can optimize this resource have emerged (Ailawadi et al., 2007; Ailawadi et al., 2009; Hardesty and Bearden, 2003; Leeflang and Parreño-Selva, 2012; Palazón and Delgado-Ballester, 2009).

The effectiveness of promotions is moderated by the nature of the product category. Both the physical characteristics and those characteristics related to the buying process can make more advisable or effective one type of promotion or another (Gupta, 1988; Macé and Neslin, 2004; Mela et al., 1998; Narashiman et al., 1996; Wakefield and Inman, 2003; Ailawadi et al., 2006; Inman et al., 2009). In this line, recent studies such as Chandon et al. (2000) and Inman et al. (2009) have analyzed the influence of the
purchase motivation of a product category, its hedonic or utilitarian nature, on the effectiveness of commercial incentives.

To analyze differences in effectiveness of promotions, previous studies classified promotions in different ways (Inman et al., 1990; Narashiman et al., 1996; Ailawadi et al., 2006; Palazón and Delgado-Ballester, 2009). Some of the more relevant classification are those that distinguish promotions depending on the type of promotional advantage that is offered, such as the distinction between monetary promotions (discounts, repayments,…) and non-monetary promotions (including gifts or raffles) (Chandon et al., 2000), or between price and product promotions (e.g. offering a price reduction or an extra product advantage, such as a sample or gift, an extra product amount, a “pay 2 and get 1 free”) (Hardesty and Bearden, 2003). We choose to work with the latter classification, price or product promotions, because it is more linked to our study. This is because price promotions entail economic savings which are easier to compare and mean functional benefits as well as utilitarian products, while product promotions entail other type of promotional advantages more difficult to compare which means affective benefits as well as hedonic products. Table 4.3 summarizes the considered promotions scheme.

<table>
<thead>
<tr>
<th>Type of promotion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRICE PROMOTION</td>
<td>Direct discount – i.e. temporary price reduction compared to the regular product price– or repayment, which represents a monetary benefit for the buyer. Promotional advantages that allow increasing the buyer’s benefit without changing the product price. Some examples are: an extra product amount, a “pay 2 and get 1 free”, a gift from another product, accumulation of points in an account for future purchases or a gift.</td>
</tr>
<tr>
<td>PRODUC PROMOTION</td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by the authors

We find studies which analyze if different characteristics of the product category, as its hedonic or utilitarian nature explain the effectiveness of promotions (Chandon et al., 2000; Okada, 2005; Wakefield and Inman, 2003; Zheng and Kivetz, 2009), but there not exist consensus. Some of them indicate consumers have a higher need to justify hedonic purchases and, therefore, price promotions are more effective on hedonic
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products (Okada, 2005; Zheng and Kivetz, 2009). However, other studies indicate that hedonic purchases are less sensitive to price because consumers buy these products attending to emotional benefits instead economic ones (Wakefield and Inman, 2003). In particular, Chandon et al. (2000) propose a congruency framework which shows that the most appropriate type of promotion for hedonic products is a promotion that brings the same emotional or affective benefits which are pursued in the product purchase. At the time of purchase, consumers choose a hedonic category through an affective or emotional process (Batra and Ahtola, 1990; Hirschman and Holbrook, 1982; Suh 2009), hoping to get pleasure and fun (Dhar and Wertenbroch, 2000; Wakefield and Inman, 2003). In this sense, we expect promotions that may trigger these subjective sensations are product promotions, since these bring emotional or affective benefits through, for example, a gift or an extra amount of the same product which means more enjoyment or pleasure.

**H3**: For hedonic products, product promotions are more effective than price promotions.

By contrast, consumers choose utilitarian categories through a cognitive, analytical and rational process in which they prioritize the functional or rational benefits that these products bring (Batra and Ahtola, 1990; Hirschman and Holbrook, 1982; Suh, 2009). Consumers probably compare information about objective attributes of other alternatives (e.g. price) during this rational process in order to maximize their utility (Park and Moon, 2003). Therefore, we expect price promotions or discounts work better in these more analyzed product categories since they have a highly functional nuance by involving economic savings. Thus, the following hypotheses are proposed:

**H4**: For utilitarian products, price promotions are more effective than product promotions.
4.3. Methodology

4.3.1. Data and measure

We have combined three sources of information in order to get the information needed for the study: scanner data (to collect the number of units sold and prices), observational data (to capture the days that a product is stimulated with any merchandising techniques or promotion type analyzed) and survey data (to classify the different product categories according its hedonic or utilitarian nature).

Scanner data

We received daily sales data from one of the largest European retailers in the food sector (Retail-Index, 2014), for one representative store, one year (2012) and 983 products from 22 selected product categories (i.e. categories in which merchandising techniques are most often used to stimulate sales), which represents 282,242 observations. Table 4.4 shows the product categories that make up the database and the number of SKUs for each.

Table 4.4. Categories in the study

<table>
<thead>
<tr>
<th>CATEGORIES DESCRIPTION</th>
<th>Total SKUs</th>
<th>CATEGORIES DESCRIPTION</th>
<th>Total SKUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCOHOL BEER</td>
<td>65</td>
<td>NORMAL RICE</td>
<td>14</td>
</tr>
<tr>
<td>BEER ALCOHOL FREE</td>
<td>36</td>
<td>OLIVE OIL</td>
<td>45</td>
</tr>
<tr>
<td>BREAKFAST BISCUITS</td>
<td>13</td>
<td>PASTA MACARONI</td>
<td>19</td>
</tr>
<tr>
<td>CANNED RED PEPPER</td>
<td>45</td>
<td>PREMIUM ALCOHOL BEER</td>
<td>142</td>
</tr>
<tr>
<td>CANNED WHITE ASPARAGUS</td>
<td>91</td>
<td>SALT</td>
<td>35</td>
</tr>
<tr>
<td>CHIPS</td>
<td>31</td>
<td>SLICED WHITE BREAD</td>
<td>20</td>
</tr>
<tr>
<td>CHOCOLATE CEREALS</td>
<td>32</td>
<td>SLICED WHOLEMEAL BREAD</td>
<td>39</td>
</tr>
<tr>
<td>CHOCOLATE WITH MILK BAR</td>
<td>29</td>
<td>SPARKLING WATER</td>
<td>12</td>
</tr>
<tr>
<td>CORN CEREALS</td>
<td>10</td>
<td>STILL WATER</td>
<td>84</td>
</tr>
<tr>
<td>EXTRA VIRGIN OLIVE OIL</td>
<td>89</td>
<td>SUNFLOWER OIL</td>
<td>22</td>
</tr>
<tr>
<td>FRESH PIZZAS</td>
<td>62</td>
<td>TOMATO SAUCE</td>
<td>48</td>
</tr>
<tr>
<td>TOTAL SKUs = 983</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by the authors
Observational data

We complete the scanner data from the retailer’s computer system with observational data. For this, the selected store was visited daily in order to check if any of the SKUs from the 22 selected categories was located at an island in the middle of a main aisle or the entrance, at an end of aisle at the beginning of the aisle where other products of the same category can be found, or if the product was highlighted through a signage in its habitual place, near competitors. Furthermore, the observational data include promotional information, i.e. whether the product was promoted with a price discount or with a product promotion (such as an extra product amount, a gift of another product, a “pay 2 and get 1 free” promotion, etc.). We collect these data in several dummies variables that are equal to one if the product is stimulated by any of the above forms, and equal to zero otherwise. Table 4.5 shows some descriptive information about the observed merchandising techniques and promotions.

<table>
<thead>
<tr>
<th>Data</th>
<th>Total SKUs</th>
<th>Product Categories</th>
<th>Total Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>983</td>
<td>22</td>
<td>282,242</td>
</tr>
<tr>
<td>Merchandising Techniques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obs* with Signages</td>
<td>21,942</td>
<td></td>
<td>4,788</td>
</tr>
<tr>
<td>Obs with End of Aisle</td>
<td>11,662</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obs with Islands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obs with Product Promotion</td>
<td>5,376</td>
<td></td>
<td>34,292</td>
</tr>
<tr>
<td>Obs with Price Promotion</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Obs: Observations

Survey data

A survey is used to collect perceptual data, needed to classify the 22 product categories (Table 4.4) as hedonic or utilitarian. We conducted the consumer survey at the same store for which we obtained sales data and where the observational information on the use of merchandising techniques was collected.

We use previously published scales to measure whether a product category is perceived as hedonic or utilitarian in nature (Wakefield and Inman, 2003; Inman et al., 2009). The items used in the questionnaire (rated on a 7-point Likert scale) can be found in the Appendix section (Appendix 2). To develop the survey, we did a pre-test by...
randomly interviewing consumers who were buying in the test store. These data allowed us to evaluate to what extent the selected statements enabled consumers to evaluate hedonic vs utilitarian nature of the categories. Finally, we randomly surveyed 326 consumers in store which were asked about seven of the twenty two analyzed categories, thus we obtain 100 valid assessments for each product category. Table 4.6 shows the average scores obtained for each category and, according to these scores, how we can separate them into hedonic and utilitarian categories.

Table 4.6. Assessments of hedonic nature

<table>
<thead>
<tr>
<th>HEDONIC CATEGORIES</th>
<th>AVERAGE SCORE*</th>
<th>UTILITARIAN CATEGORIES</th>
<th>AVERAGE SCORE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCOHOL BEER</td>
<td>5,92</td>
<td>CORN CEREALS</td>
<td>3,09</td>
</tr>
<tr>
<td>BEER ALCOHOL FREE</td>
<td>4,78</td>
<td>NORMAL RICE</td>
<td>2,31</td>
</tr>
<tr>
<td>BREAKFAST BISCUITS</td>
<td>4,73</td>
<td>PASTA MACARONI</td>
<td>2,78</td>
</tr>
<tr>
<td>CANNED RED PEPPER</td>
<td>5,36</td>
<td>SALT</td>
<td>2,21</td>
</tr>
<tr>
<td>CANNED WHITE ASPARAGUS</td>
<td>5,24</td>
<td>SLICED WHOLEMEAL BREAD</td>
<td>3,63</td>
</tr>
<tr>
<td>CHIPS</td>
<td>6,42</td>
<td>SPARKLING WATER</td>
<td>3,28</td>
</tr>
<tr>
<td>CHOCOLATE CEREALS</td>
<td>5,53</td>
<td>STILL WATER</td>
<td>2,72</td>
</tr>
<tr>
<td>CHOCOLATE WITH MILK BAR</td>
<td>6,08</td>
<td>SUNFLOWER OIL</td>
<td>2,51</td>
</tr>
<tr>
<td>EXTRA VIRGIN OLIVE OIL</td>
<td>4,89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRESH PIZZAS</td>
<td>5,83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OLIVE OIL</td>
<td>4,46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PREMIUM ALCOHOL BEER</td>
<td>6,23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLICED WHITE BREAD</td>
<td>4,43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOMATO SAUCE</td>
<td>4,76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Rated on a scale from 1 (utilitarian) to 7 (hedonic)

We consider hedonic categories those with an average score on the questionnaire items at least of 4 points and, therefore, we consider the utilitarian categories are those with an average score below 4 points. This procedure is followed by Ailawadi et al. (2003). Figure 1 and Figure 2 graphically show the results of these assessments.
Validity check of the survey

We have obtained 100 valid assessments for each analyzed category about their hedonic or utilitarian nature through the survey. In this survey, we used the same scale as used by Wakefield and Inman (2003). However, we have performed different statistical tests to check the internal consistency of the measure and we have obtained a
Cronbach’s alpha of 0.83 (very similar to 0.80 obtained by Wakefield and Inman (2003) with their data).

Furthermore, we have contrasted the results from our survey with the different previous studies that classify product categories as hedonic or utilitarian to in order to check the external validity, such as (Batra and Ahtola, 1990; Chaudhuri, 2000; Crowley et al., 1992; Kapferer and Laurent, 1985; Micu and Chowdhury, 2010; Sloot et al., 2005; Spangenberg et al., 1997; Voss et al., 2003). In this comparison, we see that most categories classified by our survey as hedonic or utilitarian, which had already been classified by the previous studies, are classified in the same way. While it is true that some of the product categories that we analyzed we found not classified in the previous literature.

4.3.2. Variables and Model

We create several dummy variables for each merchandising technique and each type of promotion. These take the value 1 if the product is stimulated by any of the above forms or otherwise zero, at the same way that several previous papers such as Van Heerde et al. (2000) and Inman et al. (2009) do. These dummies variables will be used as independent variables in our model. The main variables of the model are described in Table 4.7.

Our study compiles data on a large number of SKUs, so due to the need of comparing sales from very different product references, the dependent variable will be studied from a relative perspective. For this very same reason, we use the logarithm of the daily variation of the sold units of each SKU with respect to a daily average level of sold units of the same SKU. To calculate this average level, we only consider the SKU’s sold units on days in which this product reference is not stimulated through merchandising techniques or promotions. Moreover, we only consider the days in which there are sales of this SKU in order to avoid stock-outs. Thus, we calculate our dependent variable LnSV_{it} in the following way:

\[ LnSV_{it} = \frac{S_i}{\bar{S}_i} \]

Where:

\[ S_i = \text{number of units of product i sold on day t}, \]

\[ \bar{S}_i = \text{daily average level of sold units of the same SKU} \]
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\[ \bar{S}_i = \text{average number of units sold per day of product } i \text{ during 2012}. \]

Table 4.7. Study variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{LnSV}_{it} ) - LOGARITHM OF SALES VARIATION</td>
<td>It marks the logarithm of the rate of sold units of the product ( i ) during day ( t ) compared to the average sold units of the same product ( i ) during the days in which it is sold without any type of stimuli.</td>
</tr>
<tr>
<td>( \text{HED}_{it} ) - HEDONIC</td>
<td>It indicates if the product ( i ) is classified in a hedonic category. It equals 1 if the average assessment for the product category is more than 4; otherwise (utilitarian category) it equals 0. We make this dummy variable according to previous studies as Ailawadi et al. (2003).</td>
</tr>
<tr>
<td>( \text{ISL}_{it} ) - ISLAND</td>
<td>It indicates if product ( i ) is displayed on the island in the middle of a main aisle during day ( t ). It equals 1 if the product ( i ) is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>( \text{EOA}_{it} ) - END OF AISLE</td>
<td>It indicates if product ( i ) is displayed on the end of the aisle where the rest of products are during day ( t ). It equals 1 if the product ( i ) is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>( \text{SG}_{it} ) - SIGNAGE</td>
<td>It indicates if the product ( i ) is stimulated by a special signage during day ( t ). It equals 1 if the product ( i ) is stimulated; otherwise it equals 0.</td>
</tr>
<tr>
<td>( \text{PRIC}_{it} ) - PRICE PROMOTION</td>
<td>It indicates if the price of the product ( i ) during day ( t ) is at least 15% lower than its regular price. It equals 1 if the product ( i ) is promoted; otherwise it equals 0. We choose 15% according to previous studies as Narashiman et al. (1996) and Wakefield and Inman (2003).</td>
</tr>
<tr>
<td>( \text{PROD}_{it} ) - PRODUCT PROMOTION</td>
<td>It indicates if product ( i ) during day ( t ) presents a promotion such as an extra product amount, a “pay 2 and get 1 free” promotion, a gift, etc. It equals 1 if the product ( i ) is promoted; otherwise it equals 0.</td>
</tr>
<tr>
<td>( \text{MON}_{ik} ) - MONTH</td>
<td>These dummy variables control the seasonal effects on sales. We introduce one dummy variable for each of the 12 months in the year, such that it takes a value of 1 if the daily observation of the product ( i ) in the day ( t ) happens in the month ( k ).</td>
</tr>
<tr>
<td>( \text{DAY}_{id} ) - DAY</td>
<td>These dummy variables control the effect of the weekday on sales. We introduce one dummy variable for each of the 7 days in a week, such that it takes a value of 1 if the daily observation of the product ( i ) in the day ( t ) happens in the weekday ( d ).</td>
</tr>
</tbody>
</table>

Notes: \( i \) is the SKU for which we collect information; \( t \) is the day in which the information is collected; \( k \) is the month in which the information is collected; \( d \) is the weekday in which the information is collected.
If we use as dependent variable the daily variation of the sold units of each SKU with respect to a daily average level of sold units of the same SKU, we must introduce some temporary variables in order to collect the seasonal effect of the analyzed categories sales. For this reason, we use monthly dummy variables that indicate in which month the observation was made ($\text{MON}_{it}$). Furthermore, we also control for the effect of the day in the week by introducing day dummy variables that reflect the weekday of the observation, ($\text{DAY}_{it}$).

To analyze the effect of merchandising techniques, promotions, category characteristics (hedonic or utilitarian) and their interaction on product sales, we use a linear multiple regression model. We checked whether the necessary assumptions of normality, linearity and homoscedasticity are met. In addition, we find that there is no multicollinearity between the variables based on an analysis of tolerance and vif (Hair et al., 1998). Thus, the proposed model is expressed as follows:

$$(1) \quad \lnSV_{it} = \alpha + \beta_1 \text{HED}_i + \beta_2 \text{ISL}_i + \beta_3 \text{EOA}_i + \beta_4 \text{SG}_i + \beta_5 \text{PRIC}_i + \beta_6 \text{PROD}_i +$$
$$+ \sum_{k=1}^{12} \beta_{7k} \text{MON}_{kit} + \sum_{d=1}^{6} \beta_{8d} \text{DAY}_{dit} + \varepsilon_{i}$$

Subsequently, we also estimate some models that - in addition to the variable that contains the category’s assessment as hedonic - incorporate possible interactions between the different merchandising techniques and the promotion types (Model 2) as well as the interactions between the hedonic nature of the product category and the different merchandising techniques or the promotion types (Model 3):

$$(2) \quad \lnSV_{it} = \alpha + \beta_1 \text{HED}_i + \beta_2 \text{ISL}_i + \beta_3 \text{EOA}_i + \beta_4 \text{SG}_i + \beta_5 \text{PRIC}_i + \beta_6 \text{PROD}_i +$$
$$+ \beta_7 \text{ISL} \times \text{PRIC}_i + \beta_8 \text{ISL} \times \text{PROD}_i + \beta_9 \text{EOA} \times \text{PRIC}_i + \beta_{10} \text{EOA} \times \text{PROD}_i + \beta_{11} \text{SG} \times \text{PRIC}_i + \beta_{12} \text{SG} \times \text{PROD}_i +$$
$$+ \sum_{k=1}^{12} \beta_{13k} \text{MON}_{kit} + \sum_{d=1}^{6} \beta_{14d} \text{DAY}_{dit} + \varepsilon_{i}$$

$$(3) \quad \lnSV_{it} = \alpha + \beta_1 \text{HED}_i + \beta_2 \text{ISL}_i + \beta_3 \text{EOA}_i + \beta_4 \text{SG}_i + \beta_5 \text{PRIC}_i + \beta_6 \text{PROD}_i +$$
$$+ \beta_7 \text{ISL} \times \text{HED}_i + \beta_8 \text{EOA} \times \text{HED}_i + \beta_9 \text{SG} \times \text{HED}_i + \beta_{10} \text{PRIC} \times \text{HED}_i + \beta_{11} \text{PROD} \times \text{HED}_i +$$
$$+ \sum_{k=1}^{12} \beta_{12k} \text{MON}_{kit} + \sum_{d=1}^{6} \beta_{13d} \text{DAY}_{dit} + \varepsilon_{i}$$
Finally, we estimate Model 4 that incorporates all the previous interactions:

\[ (4) \ln SV_i = \alpha + \beta_1 HED_i + \beta_2 \text{ISL}_i + \beta_3 \text{EOA}_i + \beta_4 \text{SG}_i + \beta_5 \text{PRIC}_i + \beta_6 \text{PROD}_i + \beta_7 \text{ISL} \times \text{PRIC}_i + \beta_8 \text{ISL} \times \text{PROD}_i + \beta_9 \text{EOA} \times \text{PRIC}_i + \beta_{10} \text{EOA} \times \text{PROD}_i + \beta_{11} \text{SG} \times \text{PRIC}_i + \beta_{12} \text{SG} \times \text{PROD}_i + \beta_{13} \text{ISL} \times \text{HED}_i + \beta_{14} \text{EOA} \times \text{HED}_i + \beta_{15} \text{SG} \times \text{HED}_i + \beta_{16} \text{PRIC} \times \text{HED}_i + \beta_{17} \text{PROD} \times \text{HED}_i + \sum_{n=1}^{t_{i}} \beta_{18} \text{MON}_{i,n} + \sum_{d=1}^{d_{i}} \beta_{19} \text{DAY}_{d_{i}} + \epsilon_i \]

4.4. Analysis and Results

We use pooled estimation over all product categories to estimate the proposed models. Due to our dependent variable (\(\ln SV_i\)), we use the Heckman’s model in order to select the observations that collect SKU’s sales positive, i.e., we only consider for a SKU, days in which this SKU has been sold. Table 4.8 shows the results of the estimations of the proposed models.

The results of Model 1 show that both merchandising techniques and promotions are effective in increasing product sales. This is consistent with previous studies, which indicate positive short-term effects of different commercial stimuli (Narashiman et al., 1996; Ailawadi et al., 2006; Inman et al., 2009). The first model shows that each of the merchandising techniques has a different effect on product sales variation, thus demonstrating the need to consider the different techniques separately. In this model, we can see that island (0.691) is the merchandising technique with the greatest (positive) impact on product sales, followed by the end of aisle (0.597). Signage (0.448) appears to be the least influential technique in general. However, the three analyzed techniques are significantly positive, so each of three is able to increase product sales. In fact, we can interpret the exact percentage by which each of these techniques increase the variation in sales through the semi-elasticity formula since we use as dependent variable the logarithm (Wooldridge, 2003). If we suppose ceteris paribus, this formula for dummy variables is: \(\% \Delta Y = 100 \times \exp(\beta) - 1\). Therefore, we can interpret that island can increase the sales of a stimulated SKU at 99.6%, end of aisle at 81.7% and signage at 56.5%. Regarding promotions, something similar happens; the two analyzed promotions types are significantly positive, so both are able to increase product sales.
### Table 4.8. Estimation results

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.958***</td>
<td>0.976***</td>
<td>0.953***</td>
<td>0.975***</td>
</tr>
<tr>
<td>Hedonic</td>
<td>-0.289***</td>
<td>-0.285***</td>
<td>-0.255***</td>
<td>-0.252***</td>
</tr>
<tr>
<td>Island</td>
<td>0.691***</td>
<td>0.627***</td>
<td>0.562***</td>
<td>0.509***</td>
</tr>
<tr>
<td>End of Aisle</td>
<td>0.597***</td>
<td>0.609***</td>
<td>0.594***</td>
<td>0.598***</td>
</tr>
<tr>
<td>Signage</td>
<td>0.448***</td>
<td>0.495***</td>
<td>0.641***</td>
<td>0.639***</td>
</tr>
<tr>
<td>Price Promotion</td>
<td>0.480***</td>
<td>0.421***</td>
<td>0.432***</td>
<td>0.520**</td>
</tr>
<tr>
<td>Product Promotion</td>
<td>0.468***</td>
<td>0.481***</td>
<td>0.414***</td>
<td>0.417***</td>
</tr>
<tr>
<td>Island X Price Promotion</td>
<td>0.070ns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Island X Product Promotion</td>
<td>0.269***</td>
<td></td>
<td></td>
<td>0.274***</td>
</tr>
<tr>
<td>End of Aisle X Price Promotion</td>
<td>0.133***</td>
<td></td>
<td></td>
<td>0.120**</td>
</tr>
<tr>
<td>End of Aisle X Product Promotion</td>
<td>0.207***</td>
<td></td>
<td></td>
<td>0.178***</td>
</tr>
<tr>
<td>Signage X Price Promotion</td>
<td>0.232***</td>
<td></td>
<td></td>
<td>0.218***</td>
</tr>
<tr>
<td>Signage X Product Promotion</td>
<td>-0.195ns</td>
<td></td>
<td></td>
<td>-0.181***</td>
</tr>
<tr>
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<td></td>
<td>0.713***</td>
<td>0.715***</td>
<td></td>
</tr>
<tr>
<td>End of Aisle X Hedonic</td>
<td></td>
<td>0.433***</td>
<td>0.432***</td>
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</tr>
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<td>Signage X Hedonic</td>
<td></td>
<td>0.044ns</td>
<td>0.032ns</td>
<td></td>
</tr>
<tr>
<td>Price Promotion X Hedonic</td>
<td>-0.070***</td>
<td></td>
<td>-0.047ns</td>
<td></td>
</tr>
<tr>
<td>Product Promotion X Hedonic</td>
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<td></td>
<td>0.292***</td>
<td></td>
</tr>
<tr>
<td>Tuesday&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.959***</td>
<td>0.960***</td>
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<tr>
<td>Wednesday</td>
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<tr>
<td>Thursday</td>
<td>0.073***</td>
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<tr>
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<td>0.287***</td>
<td>0.287***</td>
<td>0.288***</td>
<td>0.288***</td>
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<tr>
<td>Saturday</td>
<td>0.781***</td>
<td>0.781***</td>
<td>0.782***</td>
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<tr>
<td>Sunday</td>
<td>0.189***</td>
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<td>0.188***</td>
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</tr>
<tr>
<td>February&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-0.079***</td>
<td>-0.074***</td>
<td>-0.079***</td>
<td>-0.074***</td>
</tr>
<tr>
<td>March</td>
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<td>-0.027ns</td>
<td>-0.035ns</td>
<td>-0.030ns</td>
</tr>
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<td>0.127***</td>
<td>0.119***</td>
<td>0.124***</td>
</tr>
<tr>
<td>May</td>
<td>0.053**</td>
<td>0.058***</td>
<td>0.048**</td>
<td>0.053**</td>
</tr>
<tr>
<td>June</td>
<td>0.112***</td>
<td>0.119***</td>
<td>0.103***</td>
<td>0.111***</td>
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<tr>
<td>July</td>
<td>0.193***</td>
<td>0.194***</td>
<td>0.187***</td>
<td>0.189***</td>
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<tr>
<td>August</td>
<td>0.247***</td>
<td>0.247***</td>
<td>0.239***</td>
<td>0.240***</td>
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<tr>
<td>September</td>
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<td>0.104***</td>
<td>0.102***</td>
<td>0.099***</td>
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<tr>
<td>October</td>
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<td>0.025ns</td>
<td>0.021ns</td>
<td>0.022ns</td>
</tr>
<tr>
<td>November</td>
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<td>0.025ns</td>
<td>0.020ns</td>
<td>0.020ns</td>
</tr>
<tr>
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<td>0.198***</td>
<td>0.196***</td>
<td>0.193***</td>
<td>0.192***</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.223</td>
<td>0.225</td>
<td>0.225</td>
<td>0.225</td>
</tr>
<tr>
<td>F Test</td>
<td>1251.08***</td>
<td>1007.86***</td>
<td>1043.10***</td>
<td>870.01***</td>
</tr>
</tbody>
</table>

<sup>a</sup> Monday serves as the reference weekday

<sup>b</sup> January serves as the reference month.
In Model 2, we can observe what type of promotion works better with each merchandising technique. In fact, it is more effective to combine islands with product promotions than with price promotions. The joint use of islands and product promotions cause a significant positive synergistic effect (0.269) that increases the effectiveness of these commercial stimuli. In the same way, ends of aisle are more effective if they are combined with product promotions (0.207) than with price promotion (0.133). On contrary, signages only present significant positive synergistic effect if they are used with price promotions (0.232). In fact, the synergistic effect with product promotion is negative and significant (-0.195).

In Model 3, we analyze how much merchandising techniques may increase the sales of hedonic vs utilitarian product categories. We must only focus on the coefficient of variables “Island”, “End of Aisle” and “Signage” to know how these merchandising techniques improve the sales variation of the utilitarian products since they are taken as reference. We must add the values of variables that represent the interactions between each commercial stimuli and hedonic variable in order to know if the net effect of merchandising techniques on hedonic products. It is observed that island (0.713) has a higher positive synergistic effect on hedonic products than end of aisle (0.433). Thus, the effects of these merchandising techniques on hedonic products are higher than on utilitarian products (taken as reference). Signage does not present a significant synergistic effect on these products. Moreover, we can observe that the synergistic effect of product promotions (0.276) is significant and positive on hedonic products, while price promotions are not significant.

We use Model 4 to analyze all the proposed interactions in previous models and contrast the hypotheses. We must focus on the coefficient of variable that collect the effect of merchandising techniques or promotions and add the coefficient of the interaction between them and hedonic products in order to know what commercial stimuli improve more hedonic products’ sales, i.e., to contrast hypothesis H1a and H1b. We must consider the coefficients of Island (0.509) and their synergistic effect with hedonic products (0.715), to calculate the coefficient that represents the sales’ increasing when hedonic products are stimulated by islands. In this case, the coefficient is 1.224. Thus, we can apply the semi-elasticity formula to it and obtain that use of islands on hedonic products may approximately increase their sales variation at 240.1%.
In the same way, the coefficient that indicates the effect of end of aisle is 1.030 (+0.598 +0.432); therefore, this merchandising technique may increase the sales variation of hedonic products at 180.1%. Signage does not present a significant synergistic effect, thus its coefficient is 0.639, and it may increase the sales variation of hedonic products at 89.5%. We tested these results and the differences are significant (p>0.01). These results are in line with H1a and H1b.

Instead, the utilitarian products are taken as reference, therefore it is not necessary to do any transformation, i.e., we must only focus on the coefficients of Island, End of Aisle and Signage. Thus, the effect of island (0.509) on utilitarian products may increase their sales variation at 66.3%, the effect of end of aisle (0.598) at 81.8% and the effect of signage (0.639) at 89.5%. We test these results and the differences are significant (p>0.01). These results are in line with H2a and H2b.

Regarding promotions, we can observe the variable that represents the interaction between price promotions and hedonic nature does not present a significant synergistic effect. Thus, the price promotions’ net effect on hedonic products is only 0.520. It represents price promotions may increase the sales variation of hedonic products at 68.2%. Instead, product promotions’ net effect is 0.709 (+0.417 +0.292) which represent these promotions may increase the sales variation of hedonic products at 103.2%. We test these results and the differences are significant (p>0.01). Therefore, results indicate product promotions are more effective for hedonic products and are in line with H3. For utilitarian products, the price promotions’ net effect is (0.520), therefore they may increase the sales at 68.2%. Instead, product promotions’ net effect for these types of products is (0.417) which indicates these promotions may increase the sales at 51.7%. We test these results and the differences are significant (p>0.01). Therefore, results indicate price promotions are more effective for utilitarian products, thus they are in line with previous researches (Chandon et al., 2000) and with H4. Table 4.9 summarizes the results.
Table 4.9. Summary of results

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Expected effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>For hedonic products, islands are more effective than ends of aisle.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H1a</td>
<td>For hedonic products, ends of aisle are more effective than signages.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H2a</td>
<td>For utilitarian products, signages are more effective than ends of aisle.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H2b</td>
<td>For utilitarian products, ends of aisle are more effective than islands.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H3</td>
<td>For hedonic products, product promotions are more effective than price promotions.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H4</td>
<td>For utilitarian products, the price promotions are more effective than product promotions.</td>
<td>Confirmed</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors

Robustness check

We conducted several robustness checks to verify the validity of our model and the consistency of our findings. We tested the hedonic variable as a continuous variable instead of a dummy variable and the results did not improve the model fit or substantially vary the estimation of the variables. The results are very similar.

In addition, we also tested the price promotion variable in its continuous form, i.e., we introduced the percentage of discount with respect to its average price instead of a dummy variable that takes positive value if the percentage of discount is higher than 15%. In this case, the model did not improve and conclusions are the same.

Finally, we did a new analysis in which we included a new dummy variable in order to control the storage effect after the promotion. This dummy variable takes value one during the next week in which the product was promoted. In this case, the accuracy of the model did not substantially vary and conclusions about the effectiveness of merchandising techniques and promotions on the hedonic or utilitarian product categories are the same.
4.5. Conclusions

The aim of this research is to expand knowledge about the effectiveness of different commercial stimuli on hedonic vs utilitarian products in order to know what stimuli are more appropriate for a product depending on its hedonic or utilitarian nature. Specifically, we analyze the effectiveness of three different merchandising techniques (island, end of aisle and signage) and two different types of promotions (price and product promotions) because their different characteristics may influence differently on hedonic vs utilitarian categories.

Results show the importance of distinguishing between the three most common of merchandising techniques, despite previous studies do not it (Bemmaor and Mouchoux, 1991; Little, 1998; Van Heerde et al., 2000; Lemon and Nowlis, 2002; Van Heerde et al., 2004; Ailawadi et al., 2006; Inman et al., 2009). Each merchandising technique increases all analyzed product categories’ sales; even their influence can be greater than the influence of promotions in some occasions. This is not surprising if we take as a reference results of previous studies which quantify the sales increase caused by the merchandising (Woodside and Waddle, 1975; Wilkinson et al., 1982; Bemmaor and Mouchoux, 1991) or by promotions (Van Heerde et al., 2003; Ataman et al., 2010). However, each of the three analyzed merchandising techniques differently influence on increasing the product categories’ sales depending on their characteristics (Buttle, 1984; Varley, 2006). Results confirm the raised hypotheses.

For hedonic products, the island is the more effective merchandising technique because it complicates information on alternatives and triggers a spontaneous and intuitive decision purchase taken in response to emotional or affective motives. Therefore, it is more coherent that this merchandising technique has greater effectiveness on hedonic products, which are chosen by the same motivations (Batra and Ahtola, 1990; Suh, 2009). The end of aisle also limits the information on alternatives, but less so than the island. Thus, consumers have easier access to information on competitors if they feel the need to justify a hedonic product choice (Okada, 2005). Therefore, the effectiveness of this merchandising technique is smaller than the island effectiveness on hedonic products. The signage is a stimulus that allows the comparison of product alternatives which are located at the same shelf, thus favoring
more rational and reflexive decisions. Therefore, it is consistent that signage is the less effective merchandising technique on hedonic products.

For utilitarian products, island is the less appropriate merchandising technique because it complicates the comparison of alternatives and, therefore consumers are uncertain about the stimulated utilitarian product is the alternative that causes more functional or practical benefits to them. The effectiveness of end of aisle on utilitarian products is greater than island because it allows greater access to information about alternatives, therefore it is easier consumer perform a cognitive and reasoned process which is linked to these product categories (Batra and Ahtola, 1990; Park and Moon, 2003). The signage is the merchandising techniques that allow full access to information about alternatives. It favors consumers compare alternatives in order to optimize their utility (Suh, 2009). Therefore, signage is the merchandising technique that increases more the utilitarian products’ sales.

Furthermore, results show the most appropriate promotions for hedonic products are the product promotions such as an extra product amount, a “pay 2 and get 1 free”, a gift from another product, etc. This type of promotion increases the emotional feelings which trigger the election of these categories. On contrary, price promotions which provide functional benefits through monetary savings are the most effective for utilitarian product categories.

According to our results, retailers must separately analyze the effectiveness of each of the different merchandising techniques in order to optimize the store space and, therefore, maximize the effect on product sales. They should treat these techniques separately when planning the store organization. In sum, they must reserve the space at the islands in main aisles where the traffic of buyers is greater, for categories of hedonic nature. If retailers place these categories at the islands, they will obtain a greater increase in sales than if they place utilitarian categories at these islands. For the utilitarian categories, signage is the most effective merchandising technique which makes the stimulated product stands out over competitors’ alternatives within the aisle. In addition, retailers and manufacturers should propose price promotions for utilitarian categories and price promotions for hedonic products. Even they may combine the use of merchandising techniques with promotions since this entails synergistic effects that increase their profits.
Chapter 4. Effectiveness of merchandising techniques in hedonic & utilitarian categories

This research analyzes daily data from 22 food product categories in a store for a full year. The number of categories is high in comparison with other papers on merchandising (see Bezawada et al., 2009; Chandon et al., 2009; Inman et al., 2009; Valenzuela et al., 2013). However, one of the major limitations is that the data come from a single store, limiting the generalization to other, possibly differently organized stores. The major reason for this data limitation was the objective to combine sales data obtained from the retailer, with detailed observational data on the use and type of merchandising and promotional actions. Thus, future researches could try to collect data on various stores from various retailers and, even, in several countries in order to analyze if retailers characteristics and consumers profiles can moderate the commercial stimuli effectiveness on hedonic and utilitarian products. A second limitation is that the analysis has been conducted at the category level, which is the most important level of analysis from a retailer’s point of view Ailawadi et al. (2009). It is possible that, within the category analyzed, the results of merchandising techniques can vary depending on the brand or SKU (e.g. package size) (Bemmar and Mouchoux, 1991; Lemon and Nowlis, 2002). For manufacturers (and retailers with an extensive private label offer), future researches could distinguish between different brands within each product category in order to analyze if the commercial stimuli effectiveness on hedonic and utilitarian products is moderated by the type of brand. In addition, future studies could expand the number of analyzed product categories and, even use different classifications of these categories in order to analyze if other characteristics can better explain merchandising and promotions effectiveness.

4.6. References


Study of the strategies of merchandising, promotion and private label in retail


Study of the strategies of merchandising, promotion and private label in retail
CHAPTER 5. EFFECTIVENESS OF MERCHANDISING TECHNIQUES
IN PRIVATE LABELS & NATIONAL BRANDS
5.1. Introduction

Nowadays, the economic situation and the proliferation of stores of large grocery chains (AC Nielsen, 2013), causes increasingly more competition between these retailers. In this sense, retailers do not stop designing strategies in order to attract consumers to their stores. Retailers know that among all possible strategies and tools, management of their private label is key to attracting consumers. Even they have created different private labels with different quality tiers (economy, standard and premium private label) (Geyskens et al., 2010; Kumar and Steenkamp, 2007, Martos-Partal et al., 2014). However, standard ones are still the most important and widely used, therefore our study focus on them. The growing importance of these brands has been highlighted as one of the most important events in the field of marketing by different authors as Sethuraman and Raju (2012) or Szymanowski and Gijsbrechts (2012) in recent decades. Proof of this is the fact that these brands have increased their share in the shopping basket, and currently they exceed market shares of 40% in several European countries (PLMA, 2014). Private labels allow retailers to differentiate themselves from their competitors since consumers just find it at a single retailer (Ailawadi et al., 2001; Baltas et al., 2010; Collins-Dodd and Lindley, 2003; González-Benito and Martos-Partal, 2012). Thus, private label has become one of the major cues to attracting consumers to a retailer’s store and even creating loyalty (Ailawadi et al., 2001; Burton et al., 1998; Dhar et al., 2001; Kumar and Steenkamp, 2007; Richardson et al., 1996; Sethuraman, 2006). However, it is also important to know how private labels can maximize their performance in-store once consumer is within the store. Because of all this, retailers are increasingly paying attention to the management of their private label.

Historically, private label has been perceived as a cheaper option and at a lower quality than national brands (Burt, 2000; Kumar and Steenkamp, 2007; Richardson et al., 1994; Yelkur, 2000). Furthermore, these brands have focused on the tangible attributes of the product, without paying much attention to improve its image, for example through communication or designing attractive packaging (González-Benito et al., 2014; Kumar and Steenkamp, 2007; Martos-Partal et al., 2014). Thus, consumers that acquire it, are usually more sensitive to price (Baltas et al., 2003, Cunningham et al., 1982; Fan et al., 2012; Hansen et al., 2006; Manzur et al., 2011; Mendéz et al.,
and they seek economic or functional benefits on their purchase. In fact, because of this some studies relate the increasing importance of private labels with the current economic situation (Lamey et al., 2007; Lamey et al., 2012). However, retailers are offering private labels with higher quality in recent years (Apelbaum et al., 2003; Geyskens et al., 2010; Mendéz et al., 2008; Soberman and Parker, 2006) in order to make them more attractive to consumers and differentiate themselves from their competitors. In fact, with this increase in the quality of its private labels, they do not only attract more customers, they increase the loyalty of these consumers into their stores too (Geyskens et al., 2010; Kumar and Steenkamp, 2007; Soberman and Parker, 2006).

Given this new situation, in which standard private labels have improved their quality, it is possible that private labels’ impact on buying behavior is different. Even, it is possible that effectiveness of commercial stimuli on private label is different since they usually work better on brands with more quality (Bemmaor and Mouchoux, 1991). Therefore, it would be interesting to analyze whether a private label with higher quality can also cause a more proportion of unplanned purchases through in-store stimuli. These purchases are defined as purchases of a product that are made without having previously planned the acquisition of that product category or if a category purchase was planned, without having planned the product/brand choice (Inman et al., 2009; Bell et al., 2011). Unplanned purchase decisions that are made within the establishment represent about 70% of total purchases (Bell et al., 2011; Bezawada et al., 2009) and are encouraged by different strategies or tools that retailers or manufacturers implement, such as merchandising techniques (understood as special presentations of the product within the establishment to attract attention and increase their sales) and promotions. Thus, it would be interesting to know what type of these commercial stimuli may improve further the private labels’ performance.

Regarding merchandising techniques, several previous studies provide evidence of their effectiveness in increasing sales of the featured product (Bezawada et al., 2009; East et al., 2003; Wilkinson et al., 1982; Woodside and Waddle, 1975). However, most of these empirical studies have considered only one of the various merchandising techniques, for example the product is located in a different place away from other competitors (Inman et al., 2009; Smith and Burns, 1996; Tellis, 1998) or the management of shelf space (Chandon et al., 2009; Drèze et al., 1994; Valenzuela and
Raghubir, 2009; Valenzuela et al., 2013). In addition, these studies do not analyze if the effect of the merchandising techniques on private labels are the same that the effect for national brands. In this line, we only find the study of Lemon and Nowlis (2002) that analyzes the effectiveness of one merchandising technique (end of aisle), by distinguishing between private labels and national brands. This study analyzes the effect of separating the product from its habitual placement in a small number of product categories, but it does not distinguish between different forms of highlighting the product through its location, as Breugelmans and Campo (2011) do for online groceries.

Regarding promotions, several studies that have analyzed the effectiveness of price promotions on the private labels indicate that these promotions are more effective on national brands (Mace and Neslin, 2004; Raju et al., 1990; Shankar and Krishnamurthi, 2007). National brands are more encouraged to submit deeper discounts in order to avoid consumers switch to a private label brand (Garretson et al., 2002; Sethuraman and Raju, 2012). However, private labels are promoted similarly as the national brands in recent years (Kumar and Steenkamp, 2007; Martos-Partal et al., 2014). In this new situation, authors like Sethuraman and Raju (2012) note the lack of studies that compare the effectiveness of other types of promotions such as nonprice promotions on private labels.

Given this lack of studies that analyze and compare the effectiveness of different types of merchandising techniques and nonprice promotions on private labels in order to maximize their performance, our objectives are: a) determining the success of merchandising techniques most used (islands, end of aisles or signages) on private labels in order to shed light on what of them improve further the private labels’ sales and; b) analyzing what type of promotion (price or nonprice promotion) is most appropriate depending on the private label connotations.

In the next section we review a) the previous literature about private labels and their characteristics, b) the previous literature that distinguishes between merchandising techniques most used by retailers and, c) the previous literature that classify promotions, in order to propose a number of hypotheses about what type of commercial stimuli are the most appropriate for private label. Subsequently, we describe the used methodology for performing the empirical analysis in order to contrast the hypotheses above. Then, we analyze the results of the empirical analysis. Finally, we present the conclusions that shed light on the effectiveness of several commercial stimuli on private labels, which
allow us to give advice to the retailers on the use of different types of merchandising techniques and promotions on these products.

5.2. Previous Literature and Hypothesis

5.2.1. Private label

Private labels, from the point of view of the consumer, are those brands that are owned by a particular retailer and can only be found in its stores (González-Benito and Martos-Partal, 2012). In recent decades, the growing importance of these brands has been highlighted as one of the most important events in the field of marketing by different authors as Sethuraman and Raju (2012) or Szymanowski and Gijsbrechts (2012). Proof of this is the fact that these brands have been increasing their share at the shopping basket until currently exceed market shares of 40% in several European countries such as Spain, where the market share is 51% 2014 (PLMA, 2014).

These brands have been understood since their birth as a cheaper alternative to national brands by consumers (Burt, 2000; Cunningham et al., 1982; Richardson et al., 1994; Yelkur, 2000). This is because historically these brands focus on the functional attributes of the product (González-Benito et al., 2014; Kumar and Steenkamp, 2007), which often causes that consumers perceive them as options with inferior quality (Ailawadi et al., 2001; Ailawadi et al., 2008; Richardson et al., 1994). They assume that private labels are uniquely designed in order to grant favorable economic transfers, i.e., an economic or functional benefit in the purchase (Burton et al., 1998; Baltas et al., 1997; Kumar and Steenkamp, 2007). Precisely for this reason, some authors relate the increase in sales of these brands with the current economic situation (Lamey et al., 2007; Lamey et al., 2012), since consumers seek a cheaper purchase option in order to save some of their limited income. However, several studies believe that private labels are not a temporary phenomenon, but they are here to stay (González-Benito et al., 2014, Lamey et al., 2007; Lamey et al., 2012; PLMA, 2014).

In any case, retailers are realizing the offered opportunities by private labels when they compete with other retailers. Private labels are exclusively sold by only one retailer. Therefore, they can be used as a tool to differentiate the retailer from other
competitors and, therefore, to stimulate and increase store loyalty (Ailawadi et al., 2001; Baltas et al., 2010; Collins-Dodd and Lindley, 2003; Dhar et al., 2001; Kumar and Steenkamp, 2007; Richardson et al., 1996). Thus, private labels are closely related to the retailer that sells them, so they are key in the image that consumers have about the retailer (Ailawadi and Keller, 2004; González-Benito and Martos-Partal, 2012; Nies and Natter, 2012). For this reason, retailers are increasingly paying more attention to their private label strategy since this can be vital to their benefits and even for their survival in the current economic scenario. Retailers pursue different objectives when they design these private labels strategies depending on their positioning (Geyskens et al., 2010; González-Benito and Martos-Partal, 2012; Kumar and Steenkamp, 2007). For instance, many price-oriented retailers, in order to strengthen their position, have created new cheaper private labels which are positioned in a more radical way and present a much lower price in order to attract to more price-sensitive consumers. To do this, retailers try to save costs through various ways, such as using cheaper ingredients, not promoting or not investing in more attractive packaging design (Martos-Partal et al., 2014). Similarly, quality oriented retailers seek to increase the perceived quality of their private labels in order to obtain a coherent image of them with their positioning in quality, so they have created their premiums brands, which typically have a similar quality or even higher than the national brands (Geyskens et al., 2010; Soberman and Parker, 2006). However, both two type of private labels (economy and premium) is always presented together with standard ones which are the most used, for this reason we focus on them. This private label has increased its quality in recent years (Apelbaum et al., 2003; Mendéz et al., 2008; Soberman and Parker, 2006). This improvement in quality is increasingly perceived by consumers (Corstjens and Lal, 2000; Steenkamp et al., 2010); either because retailers make a great effort in communication to increase the perceived quality of their private labels (Kumar and Steenkamp, 2007) or simply because it is recognized that manufacturers make them (Kumar et al., 2010; Olson, 2012; Steenkamp et al., 2010).

Regarding the retailers’ communication efforts, consumers can observe that retailers have increased the number of communications such as promotions to increase the visibility of some of their private labels (Kumar and Steenkamp, 2007), in the same way they also increase investment in more tangible aspects such as product packaging in order to increase its perceived quality. Despite these efforts, private labels are still
perceived by most consumers as attractive purchase options according to their better price-quality ratio in comparison to national brand that consumers consider as a comparable option (Dunne and Narasimhan, 1999; Geyskens et al., 2010; Rubio and Yagüe, 2009; Soberman and Parker, 2006). Because of this, private labels mainly attract to more rational, analytical and price sensitive consumers (Ailawadi et al., 2001; Baltas et al., 2003; Baltas et al., 2010; Cunningham et al., 1982; Fan et al., 2012; Hansen et al., 2006; Manzur et al., 2011; Mendéz et al., 2008; Sethuraman, 2006; Sinha and Batra, 1999). These consumers often analyze the tangible attributes of the shopping options by searching functional benefits such as the economic saving. Thus, private label consumers, unlike other consumers, do not assume that a private label is cheaper because it has a lower quality (Richardson et al., 1994). These consumers are not sensitive to the higher brand equity of the recognized national brand (Baltas and Argouslidis, 2007; Park et al., 2010) and therefore, they analyze other tangible attributes and objective characteristics of the product before making their purchase choice. Thus, these consumers may perceive, after this comparison, that the objective or intrinsic quality of private labels is very similar to that of national brands (Apelbaum et al., 2003; Mendéz et al., 2008; Davies and Brito, 2004; De Wulf et al., 2005; Fornerino and d’Hauteville, 2010). They may also observe that private labels have lower prices (Nanycz-Thiel and Romanink, 2009; Richardson et al., 1994; Sinha and Batra, 1999) and, therefore, they can consider that private labels have a better price-quality ratio and they become purchase options more attractive (Dunne and Narasimhan, 1999; Geyskens et al., 2010; Martos-Partal et al., 2014; Rubio and Yagüe, 2009; Soberman and Parker, 2006). Figure 5.1 shows a distinction between the consumer profile of the private labels and the consumer profile of national brands based on three variables: the degree in which they value tangible and intangible attributes of purchase alternatives, the degree in which they perform an impulsive or reasoned election and the degree in which they search emotional or functional benefits through their purchase. These characteristics which consumers pro-private label usually have, may cause that certain commercial stimuli or promotions work better than others on private labels. In this line, although several studies have analyzed the effectiveness of promotions on private labels (Macé and Neslin, 2004; Raju et al., 1990; Shankar and Krishnamurthi, 2007), they have focused mainly on price promotions; so other authors like Sethuraman and Raju (2012)
highlights the lack of new studies on the effectiveness of different types of commercial stimuli or promotions.

![Figure 5.1. Consumers’ profile according to their brand choice](source: Prepared by the authors)

5.2.2. Merchandising

Merchandising techniques can considerably increase sales of a particular product (Bezawada et al., 2009; East et al., 2003; Wilkinson et al., 1982; Woodside and Waddle, 1975). The purpose of these techniques is to highlight a product within the store (Buttle, 1984; Samson and Little, 1988), i.e., improve the product perception in order to increase the likelihood of it being acquired by the buyer (Inman et al., 2009; Chandon et al., 2009; Yeung and Wyer, 2004). This objective may be achieved through different techniques or tools such as the exhibition in a different place isolated from the rest of the competitors (Inman et al., 2009; Smith and Burns, 1996; Tellis, 1998) or occupying more space or a specific position on the shelves (Chandon et al., 2009; Drèze et al., 1994; Valenzuela and Raghunbir, 2009; Valenzuela et al., 2013). Each one of these techniques operates in a different way and, therefore, their effectiveness can differ (Buttle, 1984; Varley, 2006; Tellis, 1998). For this reason, it is important to distinguish between these techniques to analyze their sales impact (in a similar way as Breugelmans and Campo (2011) for an online grocery retailer).
However, most previous studies do not consider this differentiation and they gather any special product presentation within the store in a single variable called display (Ailawadi et al. 2006; Bolton, 1989; Fader and Lodish, 1990; Lemon and Nowlis, 2002; Little 1998; Narasimhan et al., 1996; Van Heerde et al., 2000; Van Heerde et al., 2004). In fact, they assume with this aggregation that each merchandising technique works with the same effectiveness for a particular situation and therefore they equalize the effects and results of each technique that take place within the store. However, due to their characteristics, it is necessary to make a distinction between them and analyze them separately to clearly determine the effectiveness of each one in order to optimize their use. In this regard, we only find some current studies that do not gather all merchandising techniques in only one variable, but they focus on the study of only one of them (Bemmaor and Mouchoux, 1991; Chandon et al., 2009; Inman et al., 2009; Lemon and Nowlis, 2002; Valenzuela et al., 2013). Some of these studies analyze what important issues related to the product may moderate the effectiveness of the analyzed merchandising technique, such as the papers of Bemmaor and Mouchoux (1991) and Lemon and Nowlis (2002). These studies analyze one merchandising tool, end of aisle, and verify its effectiveness depending on the product’s brand. They study the end of aisle as a way to isolate the product from other competitors, since it consists in placing the product at the beginning of the aisle where all the rest of products in the category are usually placed. Both studies conclude that the end of aisle triggers increases in sales for any brands tested, but these increases have different intensity depending on the brand’s characteristics. At this point their results are contradictory; Bemmaor and Mouchoux (1991) find that the end of aisle improves the results of the lesser known brands in a greater proportion than the results of more known brands. They explain that if the lesser known brands do not appear in an end of aisle, consumers do not consider the option to purchase it since they do not know it. Instead, Lemon and Nowlis (2002), which distinguish between national brands and private labels, find that the more recognized national brands improve their sales in a greater proportion. They argue that, if the product is isolated, consumers make their choice based on intangible aspects such as feelings or emotions caused by the product’s brand, and it is much easier than a more known, expensive, appealing and familiar brand can cause these feelings (Keller, 1991). That is to say, when the product is isolated from the rest of the competitors, consumers can only assess a set of affective attributes of the product, such as trust and reputation in
the brand. They explain that consumers do not have objective information about competitors’ products in this situation, such as price which is easier to compare. Thus, consumers select the product with a higher subjective assessment, i.e., a brand with more reputation, therefore national brand. Instead, Lemon and Nowlis (2002) argue that if the product is presented along with other competitors, consumers tend to compare objective attributes which are easier to compare such as the price. Therefore, if the two brands are presented together, it is more likely that consumers choose, after a price comparison, the private label.

In fact, Lemon and Nowlis (2002) conduct this study for only one product category (crackers) and with a single technique of merchandising (end of aisle). Therefore, results about the effectiveness of merchandising techniques on private labels have to be taken with some caution. Their analysis, like most of the empirical studies on merchandising techniques, does not take into account there are different merchandising techniques which work differently and, therefore, their study has limitations because they are not able to advise what type of technique merchandising is more appropriate for the private label. Among the more used merchandising techniques by retailers we can highlight the island, the end of aisle or the signage (Tellis, 1998; Varley, 2006). These techniques, due to their characteristics, may have different effectiveness in causing the sale of stimulated product. More specifically, we expect that these merchandising techniques will differ in the type of product attributes that influence their success - intangible or tangible -, the type of selection process for which they are most effective - impulsive or rational election - and the type of benefits searched by consumers - emotional or functional - that has the strongest impact on their effect (see Figure 5.2). These cues that moderate the merchandising techniques are usually different for national brands or private labels; therefore we expect these different merchandising techniques do not have the same effectiveness on private labels than on national brands.

Private labels are mainly acquired by more rational, analytical and price sensitive consumers (Baltas et al., 2010; Cunningham et al., 1982; Manzur et al., 2011; Sethuraman, 2006). These consumers usually analyze tangible attributes such as price in private labels and national brands (Nanycz-Thiel and Romanink, 2009; Richardson et al., 1994; Sinha and Batra, 1999). Therefore, they perform a rational process by searching functional benefits. Then, they choose private label because it has a better price-quality ratio (Dunne and Narasimhan, 1999; Geyskens et al., 2010; Martos-Partal
et al., 2014; Rubio and Yagüe, 2009; Soberman and Parker, 2006). Therefore, we expect merchandising techniques that work better for private labels will be those that favor further this comparison and rational process. In this sense, information about tangible attributes that consumers have about other purchase alternatives is key. In fact, a consumer with this information usually compares the price (Viswanathan and Narayoman, 1994); thus, it is more likely that private labels will be chosen (Lemon and Nowlis, 2002).

Figure 5.2. Characteristics linked to merchandising techniques

The island is a stacked presentation of product in a main aisle or in the entrance of the store, where the traffic of buyers is much higher (Larson et al., 2005). Normally this tool is an additional temporary product placement further away from its usual location (Buttle, 1984; East et al., 2003; Varley, 2006). Thus, it complicates the comparison of alternatives and does not allow a rational process (Shiv and Fedorikhin, 1999; Suh, 2009). Therefore, consumers are uncertain about the stimulated private label is the alternative that causes more functional or practical benefits to them, so it is difficult they choose this alternative.

The end of aisle is a special presentation of the product at the beginning of the aisle in which the most of competitors’ products are (Buttle, 1984; Tellis, 1998; Varley, 2006). This tool allows greater access to information about alternatives than island.

Source: Prepared by the authors
Study of the strategies of merchandising, promotion and private label in retail

(Tellis, 1998; Varley, 2006). Even, it is still possible that consumers enter inside the aisle in order to compare other tangible attributes. Thus, it is easier consumer perform a rational process which favor the private labels’ election, since pro-private label consumers are more rational, analytical and price sensitive consumers (Ailawadi et al., 2001; Baltas et al., 2010; Cunningham et al., 1982; Fan et al., 2012; Hansen et al., 2006; Manzur et al., 2011; Sethuraman, 2006). We expect end of aisle has a greater impact on private labels’ sales than island.

The stimulation of a product through a signage can trigger a different effect from the two previous techniques since both of them entail a change of the usual location of the product (Samson and Little, 1988). On the contrary, a signage takes place in the same aisle and shelf where competitors are located (Buttle, 1984; Varley, 2006). So, consumers who perceive this signage, have full access to information on all the alternatives, including information on tangible attributes that are easier to compare, such as the product price (Viswanathan and Narayoman, 1994). In this situation, it is more likely that consumers make a reasoned comparison and eventually, choose the product based on functional criteria (Shiv and Fedorikhin, 1999; Viswanathan and Narayoman, 1994). Therefore, it is more likely that consumers choose a brand more linked to functional benefits (Okada, 2005), such as private labels (Lemon and Nowlis, 2002). Therefore, we expect signage is the merchandising technique that increases more the private labels’ sales. Thus, the following hypotheses are proposed:

\[ H1a: For \text{ private labels}, \text{ signage improves product’s sales more than end of aisle.} \]

\[ H1b: For \text{ private labels}, \text{ end of aisle improves product’s sales more than island.} \]

By contrast, if the product is isolated consumers cannot compare objective attributes such as price. In this situation, they attend to their emotions (Inman et al., 2009), and assess other intangible attributes according to their experiences or emotions which cause more impulsive and intuitive election (Shiv and Fedorikhin, 1999; Suh, 2009) that favors national brands in comparison with private labels (Lemon and Nowlis, 2002). These more emotional aspects are created more easily by the more recognized national brands through, for example, their larger investment in communication or their more attractive packaging (Richardson et al., 1994; González-Benito et al., 2014). They even can reduce the risk of an unplanned purchase (Aaker, 1991; Jacoby et al., 78;
Keller, 1991; González-Benito et al., 2014; Lemon and Nowlis, 2002; Nowlis and Simonson, 1997; Suh, 2009). Therefore, we expect merchandising techniques that separate further the product from the competitors, improve more national brands’ sales than private labels’ sales. Thus, the following hypotheses are proposed:

\[ H2a: \text{For national brands, island improves product’s sales more than end of aisle.} \]

\[ H2b: \text{For national brands, end of aisle improves product’s sales more than signage.} \]

5.2.3. Promotions

Price promotions are traditionally the most used tools by retailers to temporary encourage the purchase of a product. They are easy to apply, and one of the most effective short-term marketing mix instruments. Previous studies rate the promoted product’s sales growth at the short-term at about 33% (Ataman et al., 2010; Van Heerde et al., 2003). However, several researchers have perceived the risk of abusing the promotions and they have also analyzed the impact in the long term, paying attention in how they affect the formation of an attitude and the future choice about the product brand or even on the image of the retailer that offer this promotion (Ataman et al., 2010; Buchanan et al., 1999; Kumar and Leone, 1988; Pauwels et al., 2002). Although there is no a clear consensus, several of these studies indicate that promotions may damage the brand equity in the long term if they cause a change in the reference price that consumers have about the brand (Alvarez and Casielles, 2005; Blattberg et al., 1995; Kopalle et al., 1999; Winer, 1986; Zeelenberg and Van Putten, 2005). From these studies, other studies have analyzed different types of promotions, in order to try to optimize their use and advise manufacturers or retailers about how they can encourage the purchase of their products without damaging their image in the future (Ailawadi et al., 2007; Ailawadi et al., 2009; Hardey and Bearden, 2003; Leeflang and Parreño-Selva, 2012; Palazón and Delgado-Ballester, 2009; Yi and Yoo, 2011).

Previous studies have indicated that various aspects may moderate the effectiveness of promotions, including certain characteristics of the product category, such as purchase frequency, ease of storage, and the hedonic or utilitarian nature of the category (Bell et al., 1999; Blattberg et al., 1995; Fok et al., 2006; Macé and Neslin, 2004; Narashiman et al., 1996; Nijs et al., 2001; Wakefield and Inman, 2003). Other
analyzed issues that may moderate the promotions’ effectiveness are certain characteristics of the product itself, such as its brand (Ailawadi et al., 2006; Bemmaor and Mouchoux, 1991; Blattberg et al., 1995; Pauwels et al., 2002; Van Heerde et al., 2004). Regarding the brand, most studies find that promotions do not equally affect all brands of a product category; they are usually more effective for the most recognized brands (Ailawadi et al., 2006; Blattberg and Wisniewski, 1989; Mace and Neslin, 2004). Currently, this type of study about the moderating role of the product brand on promotions’ effectiveness is also analyzed by taking into account the growing importance of the private label. Therefore, we can find many studies that analyze differences in promotions’ effectiveness between national brands and private labels (Macé and Neslin, 2004; Raju et al., 1990; Shankar and Krishnamurthi, 2007; Sivakumar, 2007). The results of these studies are consistent with those that indicate that promotions are more effective on the top brands, i.e., most studies find that promotions affect more to national brands than private labels (Macé and Neslin, 2004; Raju et al., 1990; Shankar and Krishnamurthi, 2007).

However, it seems logical that price promotions have more influence on a consumer profile more concerned about saving, i.e., more price sensitive; which is mainly the type of consumer that acquire private labels (Ailawadi et al., 2001; Baltas and Argouslidis, 2007; Baltas et al., 2010; Cunningham et al., 1982; Hansen et al., 2006; Manzur et al., 2011; Mendéz et al., 2008; Sethuraman, 2006; Sinha and Batra, 1999). Thus, it seems more consistent that price promotions are more successful on private labels since consumers more sensitive to these promotions are those that have usually a better attitude toward private label brands (Burton et al., 1998). Given this apparent contradiction, some studies explain the higher effect of price promotions on national brands to the fact that these brands are promoted more often in order to prevent consumers more price sensitive decide to switch brand and acquire private label (Garretson et al., 2002). In addition, other studies indicate this higher influence due to various reasons such as the national brands discounts are deeper (Macé and Neslin, 2004; Sethuraman and Raju, 2012; Shankar and Krishnamurthi, 2007) and therefore more attractive for price sensitive consumers which, according Burton et al. (1998), are actually intended to achieve favorable transactions.

This discussion on price promotions’ asymmetric effects on private labels vs national brand is opened. However, it would be more interesting for retailers to know
what type of promotion (price or product promotion) is the most successful or consistent for private labels and what type is the most appropriate for national brands in order to improve theirs sales. Despite this issue may be more practical and useful for retailers, we have not found studies that analyze the impact of product promotions on private labels. In fact, authors like Sethuraman and Raju (2012) indicate so and they call for other types of promotions are analyzed. They, like most previous studies, distinguish between two types of promotions: price promotions or discounts and nonprice promotions or product promotions (Chandon et al., 2000; Darke and Chung, 2005; Palazón and Delgado-Ballester, 2009; Yi and Yoo, 2011).

Private labels are acquired by more price sensitive consumers (Baltas et al., 2010; Cunningham et al., 1982; Manzur et al., 2011; Sethuraman, 2006), which search functional benefits (Burton et al., 1998; Baltas et al., 1997; Kumar and Steenkamp, 2007). Price promotions are those that entail a direct monetary benefit in the regular product price, i.e., price discounts or repayments (Chandon et al., 2000; Hardesty and Bearden, 2003; Palazón and Delgado-Ballester, 2009). These price promotions have a more tangible and functional nature and, therefore they offer the same types of advantages that are associated with private labels (Burton et al., 1998; Baltas et al., 1997; Kumar and Steenkamp, 2007). On contrary, product promotions entail non-monetary benefits (such as an extra amount of product, a gift, a bonus pack, a raffle or a promotion like "pay 2 and get 3"), and are, therefore, more related to emotional benefits (Chandon et al., 2000; Darke and Chung, 2005; Hardesty and Bearden, 2003; Mela et al., 1997; Palazón and Delgado-Ballester, 2009; Yi and Yoo, 2011). Therefore, we expect price promotions will be better perceived by and have a stronger impact on more price sensitive consumers which are usually prone private labels (Ailawadi et al., 2001; Baltas et al., 2010; Cunningham et al., 1982; Fan et al., 2012; Hansen et al., 2006; Manzur et al., 2011; Sethuraman, 2006). Thus, the following hypotheses are proposed:

**H3: For private labels, price promotion improves product’s sales more than product promotion.**

By contrast, many national brands are acquired by less price sensitive consumers that attending more to feelings and emotions (Keller, 1991). In this situation, price promotions that entail economic benefits will have a lower impact on these consumers.
Instead, product promotions may increase these emotional benefits of these national brands through, for instance an extra amount of product or a gift (Chandon et al., 2000; Darke and Chung, 2005; Hardesty and Bearden, 2003; Palazón and Delgado-Ballester, 2009; Yi and Yoo, 2011). Therefore, we expect products promotion may increase further national brands sales. Thus, the following hypotheses are proposed:

\[ H4: \text{For national brands, product promotion improves product's sales more than price promotion.} \]

5.3. Methodology

5.3.1. Data and measure

In order to have a large set of data that allows us to generalize the results, we selected 22 product categories among those that are more stimulated with merchandising techniques based on management feedback (i.e., information obtained from one of the largest hypermarket retailers in Europe, Retail-Index, 2014). We combine information from two different sources: scanner data (to collect information on the number of units sold and their price) and observational data (to capture the days in which a product is stimulated with a merchandising technique or is promoted with a price or product promotion).

Scanner data

We received daily sales data from one of the largest European retailers in the food sector (Retail-Index, 2014), for one representative store, one year (2012) and 983 products from 22 selected product categories (i.e. categories in which merchandising techniques are most often used to stimulate sales), which represents 282,242 observations. This retailer has only standard private label, which is most often used by retailers. Table 5.1 shows the 22 product categories that make up the database and some descriptive information about the number of SKUs, brands and average prices.

In Table 5.1, we can observe that we count with narrow and wide categories. We also see that the number of private labels SKU is quite smaller than national brands.
SKU. Other important cue is that average price of private labels is always under average price of national brands.

Table 5.1. Descriptive of product categories

<table>
<thead>
<tr>
<th>CATEGORIES DESCRIPTION</th>
<th>Total SKUs</th>
<th>Private label SKUs</th>
<th>Number of brands</th>
<th>Average Price of Private Label</th>
<th>Average Price of National Brands</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCOHOL BEER</td>
<td>65</td>
<td>3</td>
<td>15</td>
<td>0.25</td>
<td>0.44</td>
</tr>
<tr>
<td>BEER ALCOHOL FREE</td>
<td>36</td>
<td>1</td>
<td>12</td>
<td>0.28</td>
<td>0.53</td>
</tr>
<tr>
<td>BREAKFAST BISCUITS</td>
<td>13</td>
<td>2</td>
<td>8</td>
<td>0.90</td>
<td>1.87</td>
</tr>
<tr>
<td>CANNED RED PEPPER</td>
<td>45</td>
<td>6</td>
<td>19</td>
<td>0.99</td>
<td>1.33</td>
</tr>
<tr>
<td>CANNED WHITE ASPARAGUS</td>
<td>91</td>
<td>21</td>
<td>17</td>
<td>1.09</td>
<td>2.79</td>
</tr>
<tr>
<td>CHIPS</td>
<td>31</td>
<td>5</td>
<td>11</td>
<td>0.67</td>
<td>1.31</td>
</tr>
<tr>
<td>CHOCOLATE CEREALS</td>
<td>32</td>
<td>8</td>
<td>5</td>
<td>1.20</td>
<td>1.60</td>
</tr>
<tr>
<td>CHOCOLATE WITH MILK BAR</td>
<td>29</td>
<td>4</td>
<td>11</td>
<td>0.66</td>
<td>1.17</td>
</tr>
<tr>
<td>CORN CEREALS</td>
<td>10</td>
<td>2</td>
<td>4</td>
<td>1.20</td>
<td>1.89</td>
</tr>
<tr>
<td>EXTRA VIRGIN OLIVE OIL</td>
<td>89</td>
<td>3</td>
<td>23</td>
<td>2.73</td>
<td>3.76</td>
</tr>
<tr>
<td>FRESH PIZZAS</td>
<td>62</td>
<td>7</td>
<td>8</td>
<td>1.58</td>
<td>2.16</td>
</tr>
<tr>
<td>NORMAL RICE</td>
<td>14</td>
<td>1</td>
<td>11</td>
<td>0.72</td>
<td>1.27</td>
</tr>
<tr>
<td>OLIVE OIL</td>
<td>45</td>
<td>6</td>
<td>11</td>
<td>2.35</td>
<td>3.76</td>
</tr>
<tr>
<td>PASTA MACARONI</td>
<td>19</td>
<td>3</td>
<td>8</td>
<td>0.43</td>
<td>0.75</td>
</tr>
<tr>
<td>PREMIUM ALCOHOL BEER</td>
<td>142</td>
<td>1</td>
<td>58</td>
<td>0.48</td>
<td>1.21</td>
</tr>
<tr>
<td>SALT</td>
<td>35</td>
<td>13</td>
<td>6</td>
<td>0.22</td>
<td>0.53</td>
</tr>
<tr>
<td>SLICED WHITE BREAD</td>
<td>20</td>
<td>3</td>
<td>7</td>
<td>0.94</td>
<td>1.27</td>
</tr>
<tr>
<td>SLICED WHOLEMEAL BREAD</td>
<td>39</td>
<td>4</td>
<td>8</td>
<td>0.69</td>
<td>0.99</td>
</tr>
<tr>
<td>SPARKLING WATER</td>
<td>12</td>
<td>0</td>
<td>8</td>
<td>-</td>
<td>0.77</td>
</tr>
<tr>
<td>STILL WATER</td>
<td>84</td>
<td>16</td>
<td>18</td>
<td>0.20</td>
<td>0.46</td>
</tr>
<tr>
<td>SUNFLOWER OIL</td>
<td>22</td>
<td>7</td>
<td>8</td>
<td>1.26</td>
<td>1.61</td>
</tr>
<tr>
<td>TOMATO SAUCE</td>
<td>48</td>
<td>8</td>
<td>17</td>
<td>0.40</td>
<td>0.91</td>
</tr>
</tbody>
</table>

TOTAL SKUs= 983. TOTAL OBSERVATIONS=282,242

Source: Prepared by the authors

Observational data

We complete the scanner data from the retailer’s computer system with observational data. For this, the selected store was visited daily in order to check if any of the SKUs from the 22 selected categories was located at an island in the middle of a main aisle or the entrance, at an end of aisle at the beginning of the aisle where other products of the same category can be found, or if the product was highlighted through a signage in its habitual place, near competitors. Furthermore, the observational data
include promotional information, i.e. whether the product was promoted with a price
discount or with a product promotion (such as an extra product amount, a gift of another
product, a “pay 2 and get 1 free” promotion, etc.). We collect these data in several
dummies variables that are equal to one if the product is stimulated by any of the above
forms, and equal to zero otherwise. Table 5.2 and Table 5.3 show descriptive
information about used merchandising techniques and promotions for national brands
and private labels.

Table 5.2. Descriptive of merchandising techniques

<table>
<thead>
<tr>
<th>BRANDS</th>
<th>Observations</th>
<th>With any Merchandising</th>
<th>With Island</th>
<th>With End of aisle</th>
<th>With Signage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>288,242</td>
<td>100%</td>
<td>29,298</td>
<td>10.16%</td>
<td>4,788</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11,662</td>
<td>4.05%</td>
<td>21,938</td>
</tr>
<tr>
<td>Private Label</td>
<td>35,898</td>
<td>12.45%</td>
<td>5,883</td>
<td>16.39%</td>
<td>342</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,383</td>
<td>3.85%</td>
<td>5,189</td>
</tr>
<tr>
<td>National Brands</td>
<td>252,344</td>
<td>87.55%</td>
<td>23,415</td>
<td>9.28%</td>
<td>4,446</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10,279</td>
<td>4.07%</td>
<td>16,749</td>
</tr>
</tbody>
</table>

Table 5.3. Descriptive of promotions

<table>
<thead>
<tr>
<th>BRANDS</th>
<th>Observations</th>
<th>Price Promotions</th>
<th>Average discount any case</th>
<th>Product Promotions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>288,242</td>
<td>100%</td>
<td>8.1%</td>
<td>5,376</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33,686</td>
<td></td>
<td>1.87%</td>
</tr>
<tr>
<td>Private Label</td>
<td>35,898</td>
<td>12.45%</td>
<td>6.3%</td>
<td>714</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,150</td>
<td></td>
<td>1.99%</td>
</tr>
<tr>
<td>National Brands</td>
<td>252,344</td>
<td>87.55%</td>
<td>8.3%</td>
<td>4,662</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31,536</td>
<td></td>
<td>1.85%</td>
</tr>
</tbody>
</table>

Table 5.2 shows that merchandising techniques are used less frequently on private
labels. This is understandable since retailers are more interested in highlighting national
brands, for which they receive a contribution of the manufacturer (Ailawadi et al., 2009;
Valenzuela et al., 2013). However, private labels are more stimulated through any of
these techniques in relative terms (16.39%). This fact makes even more evident the need
to analyze the effect of these techniques on private labels. In particular, we can see that
the technique more used to encourage private labels is the signage. This happens for
national brands too, but the differences between the use of this technique and the end of
aisle or island is much less than for private labels. Table 5.3 shows that private labels
are promoted less than national brands, this time also in relative terms. This is in line
with previous studies that indicate a wider use of price promotions with deeper discounts by national brands (Garretson et al., 2002; Sethuraman and Raju, 2012). However, if we consider discount in relative terms, the differences are attenuated due to the higher NBs’ average price. Regarding product promotions, we observe that there are no large differences in relative terms, which again highlights the need to analyze product promotions as Raju Sethuraman (2012) indicate, since private labels are increasingly promoted similarly to national brands (Kumar and Steenkamp, 2007; Martos-Partal et al., 2014).

5.3.2. Variables and Model

We create several dummy variables for each merchandising technique and each type of promotion. These take the value 1 if the product is stimulated by any of the above forms or otherwise zero, at the same way that several previous papers such as Van Heerde et al. (2000) and Inman et al. (2009) do. These dummies variables will be used as independent variables in our model. The main variables of the model are described in Table 5.4.

Our study compiles data on a large number of SKUs, so due to the need of comparing sales from very different product references, the dependent variable will be studied from a relative perspective. For this very same reason, we use the logarithm of the daily variation of the sold units of each SKU with respect to a daily average level of sold units of the same SKU. To calculate this average level, we only consider the SKU’s sold units on days in which this product reference is not stimulated through merchandising techniques or promotions. Moreover, we only consider the days in which there are sales of this SKU in order to avoid stock-outs. Thus, we calculate our dependent variable \( \text{LnSV}_{it} \) in the following way:

\[
\text{LnSV}_{it} = \frac{S_t}{\bar{S}_i}, \text{ Where:}
\]

\( S_t = \) number of units of product i sold on day t,

\( \bar{S}_i = \) average number of units sold per day of product i during 2012.
Table 5.4. Study variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LnSV&lt;sub&gt;i&lt;/sub&gt; - LOGARITHM OF SALES VARIATION</td>
<td>It marks the logarithm of the rate of sold units of the product &lt;i&gt;i&lt;/i&gt; during day &lt;i&gt;t&lt;/i&gt; compared to the average sold units of the same product &lt;i&gt;i&lt;/i&gt; during the days in which it is sold without any type of stimuli.</td>
</tr>
<tr>
<td>PL&lt;sub&gt;i&lt;/sub&gt; – PRIVATE LABEL</td>
<td>It indicates if the product &lt;i&gt;i&lt;/i&gt; has a private label. It equals 1 if the product has a private label; otherwise (national brand) it equals 0.</td>
</tr>
<tr>
<td>ISL&lt;sub&gt;i&lt;/sub&gt; - ISLAND</td>
<td>It indicates if product &lt;i&gt;i&lt;/i&gt; is displayed on the island in the middle of a main aisle during day &lt;i&gt;t&lt;/i&gt;. It equals 1 if the product &lt;i&gt;i&lt;/i&gt; is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>EOA&lt;sub&gt;i&lt;/sub&gt; - END OF AISLE</td>
<td>It indicates if product &lt;i&gt;i&lt;/i&gt; is displayed on the end of the aisle where the rest of products are during day &lt;i&gt;t&lt;/i&gt;. It equals 1 if the product &lt;i&gt;i&lt;/i&gt; is displayed; otherwise it equals 0.</td>
</tr>
<tr>
<td>SG&lt;sub&gt;i&lt;/sub&gt; - SIGNAGE</td>
<td>It indicates if the product &lt;i&gt;i&lt;/i&gt; is stimulated by a special signage during day &lt;i&gt;t&lt;/i&gt;. It equals 1 if the product &lt;i&gt;i&lt;/i&gt; is stimulated; otherwise it equals 0.</td>
</tr>
<tr>
<td>PRIC&lt;sub&gt;i&lt;/sub&gt; - PRICE PROMOTION</td>
<td>It indicates if the price of the product &lt;i&gt;i&lt;/i&gt; during day &lt;i&gt;t&lt;/i&gt; is at least 15% lower than its regular price. It equals 1 if the product &lt;i&gt;i&lt;/i&gt; is promoted; otherwise it equals 0. We choose 15% according to previous studies as Narashiman et al. (1996) and Wakefield and Inman (2003).</td>
</tr>
<tr>
<td>PROD&lt;sub&gt;i&lt;/sub&gt; - PRODUCT PROMOTION</td>
<td>It indicates if product &lt;i&gt;i&lt;/i&gt; during day &lt;i&gt;t&lt;/i&gt; presents a promotion such as an extra product amount, a “pay 2 and get 1 free” promotion, a gift, etc. It equals 1 if the product &lt;i&gt;i&lt;/i&gt; is promoted; otherwise it equals 0.</td>
</tr>
<tr>
<td>MON&lt;sub&gt;(k)i&lt;/sub&gt; - MONTH</td>
<td>These dummy variables control the seasonal effects on sales. We introduce one dummy variable for each of the 12 months in the year, such that it takes a value of 1 if the daily observation of the product &lt;i&gt;i&lt;/i&gt; in the day &lt;i&gt;t&lt;/i&gt; happens in the month &lt;i&gt;k&lt;/i&gt;.</td>
</tr>
<tr>
<td>DAY&lt;sub&gt;(d)i&lt;/sub&gt; - DAY</td>
<td>These dummy variables control the effect of the weekday on sales. We introduce one dummy variable for each of the 7 days in a week, such that it takes a value of 1 if the daily observation of the product &lt;i&gt;i&lt;/i&gt; in the day &lt;i&gt;t&lt;/i&gt; happens in the weekday &lt;i&gt;d&lt;/i&gt;.</td>
</tr>
</tbody>
</table>

Notes: <i>i</i> is the SKU for which we collect information; <i>t</i> is the day in which the information is collected; <i>k</i> is the month in which the information is collected; <i>d</i> is the weekday in which the information is collected.

If we use as dependent variable the daily variation of the sold units of each SKU with respect to a daily average level of sold units of the same SKU, we must introduce some temporary variables in order to correct for potential seasonal effects in category sales. For this reason, we use dummy variables that indicate in which month the observation was made (MON<sub>(k)i</sub>). In a similar way, we also control for the effect of the
day in the week on sales, by introducing dummy variables that reflect the weekday in which the observation was made (\(\text{DAY}_{(d|it)}\)).

To analyze the effect of merchandising techniques and promotions on private labels and their interaction on product sales, we use a linear multiple regression model. We checked whether the necessary assumptions of normality, linearity and homoscedasticity are met. In addition, we find that there is no multicollinearity between the variables based on an analysis of tolerance and vif (Hair et al., 1998). Thus, the proposed model is expressed as follows:

\[
\begin{align*}
\ln S_{it} &= \alpha + \beta_1 PL_{it} + \beta_2 ISL_{it} + \beta_3 EOA_{it} + \beta_4 SG_{it} + \beta_5 PRIC_{it} + \beta_6 PROD_{it} + \\
&\quad + \sum_{d=1}^{6} \beta_{d1} MON_{kt} + \sum_{d=1}^{6} \beta_{d2} \text{DAY}_{dit} + \epsilon_{i}
\end{align*}
\]

Subsequently, we also estimate some models that incorporate possible interactions between the different merchandising techniques and the promotion types (Model 2) as well as the interactions between the private label and the different merchandising techniques or the promotion types (Model 3):

\[
\begin{align*}
\ln S_{it} &= \alpha + \beta_1 PL_{it} + \beta_2 ISL_{it} + \beta_3 EOA_{it} + \beta_4 SG_{it} + \beta_5 PRIC_{it} + \beta_6 PROD_{it} + \\
&\quad + \beta_7 ISLxPRIC_{it} + \beta_8 ISLxPROD_{it} + \beta_9 EOAxPRIC_{it} + \beta_{10} EOAxPROD_{it} + \beta_{11} SGxPRIC_{it} + \beta_{12} SGxPROD_{it} + \\
&\quad + \sum_{d=1}^{6} \beta_{d1} MON_{kt} + \sum_{d=1}^{6} \beta_{d2} \text{DAY}_{dit} + \epsilon_{i}
\end{align*}
\]

\[
\begin{align*}
\ln S_{it} &= \alpha + \beta_1 PL_{it} + \beta_2 ISL_{it} + \beta_3 EOA_{it} + \beta_4 SG_{it} + \beta_5 PRIC_{it} + \beta_6 PROD_{it} + \\
&\quad + \beta_7 ISLxPL_{it} + \beta_8 EOAxPL_{it} + \beta_9 SGxPL_{it} + \beta_{10} PRICxPL_{it} + \beta_{11} PRODxPL_{it} + \\
&\quad + \sum_{d=1}^{6} \beta_{d1} MON_{kt} + \sum_{d=1}^{6} \beta_{d2} \text{DAY}_{dit} + \epsilon_{i}
\end{align*}
\]

Finally, we estimate Model 4 that incorporates all the previous interactions:

\[
\begin{align*}
\ln S_{it} &= \alpha + \beta_1 PL_{it} + \beta_2 ISL_{it} + \beta_3 EOA_{it} + \beta_4 SG_{it} + \beta_5 PRIC_{it} + \beta_6 PROD_{it} + \\
&\quad + \beta_7 ISLxPRIC_{it} + \beta_8 ISLxPROD_{it} + \beta_9 EOAxPRIC_{it} + \beta_{10} EOAxPROD_{it} + \beta_{11} SGxPRIC_{it} + \beta_{12} SGxPROD_{it} + \\
&\quad + \beta_13 ISLxPL_{it} + \beta_14 EOAxPL_{it} + \beta_15 SGxPL_{it} + \beta_{16} PRICxPL_{it} + \beta_{17} PRODxPL_{it} + \\
&\quad + \sum_{d=1}^{6} \beta_{d1} MON_{kt} + \sum_{d=1}^{6} \beta_{d2} \text{DAY}_{dit} + \epsilon_{i}
\end{align*}
\]
5.4. Analysis and Results

We use pooled estimation over all product categories to estimate the proposed models. Due to our dependent variable (LnSVₜₐ), we use the Heckman’s model in order to select the observations that collect SKU’s sales positive, i.e., we only consider for a SKU, days in which this SKU has been sold. Table 5.5 shows the results of the estimations of the proposed models.

The results of Model 1 show that both merchandising techniques and promotions are effective in increasing product sales. This is consistent with previous studies, which indicate positive short-term effects of different commercial stimuli (Narashiman et al., 1996; Ailawadi et al., 2006; Inman et al., 2009). The first model shows that each of the merchandising techniques has a different effect on product sales variation, thus demonstrating the need to consider the different techniques separately. In this model, we can see that island (0.734) is the merchandising technique with the greatest (positive) impact on product sales, followed by the end of aisle (0.619). Signage (0.487) appears to be the least influential technique in general. However, the three analyzed techniques are significantly positive, so each of three is able to increase product sales. In fact, we can interpret the exact percentage by which each of these techniques increase the variation in sales through the semi-elasticity formula since we use as dependent variable the logarithm (Wooldridge, 2003). If we suppose ceteris paribus, this formula for dummy variables is: %ΔY = 100x[exp(β₁) − 1]. Therefore, we can interpret that island can increase the sales of a stimulated SKU at 108.3%, end of aisle at 85.7% and signage at 62.7%. Regarding promotions, something similar happens; the two analyzed promotions types are significantly positive, so both are able to increase product sales.

In Model 2, we can observe what type of promotion works better with each merchandising technique. In fact, it is more effective to combine islands with product promotions than with price promotions. The joint use of islands and product promotions cause a significant positive synergistic effect (0.302) that increases the effectiveness of these commercial stimuli. In the same way, ends of aisle are more effective if they are combined with product promotions (0.213) than with price promotion (0.095). On contrary, signages only present significant positive synergistic effect if they are used with price promotions (0.301).
### Table 5.5. Estimation results

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>0.758****</td>
<td>0.753****</td>
<td>0.764****</td>
<td>0.700****</td>
</tr>
<tr>
<td><strong>Private Label</strong></td>
<td>0.154***</td>
<td>0.163***</td>
<td>0.160***</td>
<td>0.155***</td>
</tr>
<tr>
<td><strong>Island</strong></td>
<td>0.734***</td>
<td>0.699***</td>
<td>0.690***</td>
<td>0.673***</td>
</tr>
<tr>
<td><strong>End of Aisle</strong></td>
<td>0.619***</td>
<td>0.652***</td>
<td>0.650***</td>
<td>0.595***</td>
</tr>
<tr>
<td><strong>Signage</strong></td>
<td>0.487***</td>
<td>0.443***</td>
<td>0.480***</td>
<td>0.398***</td>
</tr>
<tr>
<td><strong>Price Promotion</strong></td>
<td>0.414***</td>
<td>0.392***</td>
<td>0.459***</td>
<td>0.412**</td>
</tr>
<tr>
<td><strong>Product Promotion</strong></td>
<td>0.487***</td>
<td>0.501***</td>
<td>0.494***</td>
<td>0.483***</td>
</tr>
<tr>
<td><strong>Island X Price Promotion</strong></td>
<td>0.050ns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Island X Product Promotion</strong></td>
<td>0.302***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>End of Aisle X Price Promotion</strong></td>
<td>0.095**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>End of Aisle X Product Promotion</strong></td>
<td>0.213***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signage X Price Promotion</strong></td>
<td>0.301***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signage X Product Promotion</strong></td>
<td>-0.153***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tuesday</strong></td>
<td>0.764****</td>
<td>0.767****</td>
<td>0.762****</td>
<td>0.962****</td>
</tr>
<tr>
<td><strong>Wednesday</strong></td>
<td>0.099***</td>
<td>0.099***</td>
<td>0.099***</td>
<td>0.202***</td>
</tr>
<tr>
<td><strong>Thursday</strong></td>
<td>0.066***</td>
<td>0.065***</td>
<td>0.066***</td>
<td>0.171***</td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td>0.202***</td>
<td>0.204***</td>
<td>0.201***</td>
<td>0.303***</td>
</tr>
<tr>
<td><strong>Saturday</strong></td>
<td>0.558***</td>
<td>0.561***</td>
<td>0.555***</td>
<td>0.649***</td>
</tr>
<tr>
<td><strong>Sunday</strong></td>
<td>0.942***</td>
<td>0.933***</td>
<td>0.954***</td>
<td>1.099***</td>
</tr>
<tr>
<td><strong>February</strong></td>
<td>-0.083***</td>
<td>-0.076***</td>
<td>-0.085***</td>
<td>-0.079***</td>
</tr>
<tr>
<td><strong>March</strong></td>
<td>-0.015ns</td>
<td>-0.012ns</td>
<td>-0.014ns</td>
<td>-0.009ns</td>
</tr>
<tr>
<td><strong>April</strong></td>
<td>0.131***</td>
<td>0.134***</td>
<td>0.135***</td>
<td>0.142***</td>
</tr>
<tr>
<td><strong>May</strong></td>
<td>0.090***</td>
<td>0.093***</td>
<td>0.093***</td>
<td>0.095***</td>
</tr>
<tr>
<td><strong>June</strong></td>
<td>0.131***</td>
<td>0.136***</td>
<td>0.132***</td>
<td>0.140***</td>
</tr>
<tr>
<td><strong>July</strong></td>
<td>0.154***</td>
<td>0.154***</td>
<td>0.147***</td>
<td>0.144***</td>
</tr>
<tr>
<td><strong>August</strong></td>
<td>0.212***</td>
<td>0.213***</td>
<td>0.206***</td>
<td>0.204***</td>
</tr>
<tr>
<td><strong>September</strong></td>
<td>0.121***</td>
<td>0.117***</td>
<td>0.122***</td>
<td>0.117***</td>
</tr>
<tr>
<td><strong>October</strong></td>
<td>0.027ns</td>
<td>0.027ns</td>
<td>0.034ns</td>
<td>0.035ns</td>
</tr>
<tr>
<td><strong>November</strong></td>
<td>0.035ns</td>
<td>0.034ns</td>
<td>0.035ns</td>
<td>0.035ns</td>
</tr>
<tr>
<td><strong>December</strong></td>
<td>0.136***</td>
<td>0.134***</td>
<td>0.134***</td>
<td>0.131***</td>
</tr>
<tr>
<td><strong>Adjusted R²</strong></td>
<td>0.216</td>
<td>0.217</td>
<td>0.219</td>
<td>0.221</td>
</tr>
<tr>
<td><strong>F Test</strong></td>
<td>1196.51***</td>
<td>964.15***</td>
<td>1009.06***</td>
<td>849.39***</td>
</tr>
</tbody>
</table>

*a.* Monday serves as the reference weekday  
*b.* January serves as the reference month.

*p<0.10, **p<0.05, ***p<0.001; ns: no significative $p>0.10$
In Model 3, we analyze how much merchandising techniques may increase the sales of private labels vs national brands. We must only focus on the coefficient of variables “Island”, “End of Aisle” and “Signage” to know how these merchandising techniques improve the sales variation of the national brands since they are taken as reference. We must add the values of variables that represent the interactions between each commercial stimuli and private label variable in order to know the net effect of merchandising techniques on private labels products. It is observed that island (-0.310) and end of aisle (-0.238) have negative and significant synergistic effects on private label. Thus, the effect of these merchandising techniques on private labels is smaller than on national brands (taken as reference). On contrast, signage has a positive and significant effect on these products (0.166). Moreover, we can observe that the synergistic effect of product promotions (-0.215) is significant and negative on private labels, while the synergistic effect of price promotions are not significant.

We use Model 4 to analyze all the proposed interactions in previous models and contrast the hypotheses. We must focus on the coefficient of variable that collect the effect of merchandising techniques or promotions and add the coefficient of the interaction between them and private labels in order to know what commercial stimuli improve more private labels’ sales, i.e., to contrast hypothesis H1a and H1b. We must consider the coefficients of Island (0.673) and their synergistic effect with private label (-0.317), to calculate the coefficient that represents the sales’ increasing when private labels are stimulated by islands. In this case, the coefficient is 0.356. Thus, we can apply the semi-elasticity formula to it and obtain that use of islands on private labels may approximately increase their sales variation at 42.7%. In the same way, the coefficient that indicates the effect of end of aisle is 0.39 (+0.595 -0.205), therefore, this merchandising technique may increase the sales variation of hedonic products at 47.7%. Thus, coefficient for signage’s effect is 0.507 (+0.398 +0.109), and it may increase the sales variation of hedonic products at 66.0%. We tested these results and the differences are significant (p>0.01). Therefore, results indicate signage improves more private labels’ sales than end of aisle and island. These results are in line with H1a and H1b.

Instead, the national brands products are taken as reference, therefore it is not necessary to do any transformation, i.e., we must only focus on the coefficients of Island, End of Aisle and Signage. Thus, the effect of island (0.673) on national brands
may increase their sales variation at 96.0%, the effect of end of aisle (0.595) at 81.3% and the effect of signage (0.398) at 48.8%. We test these results and the differences are significant (p>0.01). Therefore, results indicate island improves more national brands’ sales than end of aisle and signage. These results are in line with H2a and H2b.

Regarding promotions, the coefficient for price promotions’ effect on private labels is 0.412 because the interaction is not significant. It represents price promotions may increase the sales variation of hedonic products at 50.9%. Instead, the coefficient for product promotions’ effect is 0.268 (0.483 - 0.215) which represents these promotions may increase the sales variation of private labels at 30.7%. We tested these results and the differences are significant (p>0.01). Therefore, results indicate price promotion improves more private labels’ sales than product promotion. This result is in line with H3. For national brands, the price promotions’ net effect is (0.412), therefore they may increase the sales at 50.9%. Instead, product promotions’ net effect for national brand products is (0.483) which indicates these promotions may increase the sales at 62.1%. We tested these results and the differences are significant (p>0.01). Therefore, results indicate product promotion improves are more national brands’ sales than price promotion. This result is in line with H4. Table 5.6 summarizes the results.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Expected effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>For private labels, signage improves product’s sales more than end of aisle.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H1b</td>
<td>For private labels, end of aisle improves product’s sales more than island.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H2a</td>
<td>For national brands, island improves product’s sales more than end of aisle.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H2b</td>
<td>For national brands, end of aisle improves product’s sales more than signage.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H3</td>
<td>For private labels, price promotion improves product’s sales more than product promotion.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>H4</td>
<td>For national brands, product promotion improves product’s sales more than price promotion.</td>
<td>Confirmed</td>
</tr>
</tbody>
</table>

Robustness check

We conducted several robustness checks to verify the validity of our model and the consistency of our findings. We tested the price promotion variable in its continuous
form, i.e., we introduced the percentage of discount with respect to its average price instead of a dummy variable that takes positive value if the percentage of discount is higher than 15%. In this case, the model did not improve and conclusions are the same.

Finally, we did a new analysis in which we included a new dummy variable in order to control the storage effect after the promotion. This dummy variable takes value one during the next week in which the product was promoted. In this case, the accuracy of the model did not substantially vary and conclusions about the effectiveness of merchandising techniques and promotions on the hedonic or utilitarian product categories are the same.

5.5. Conclusions

This research starts with the purpose of analyzing the effectiveness of different techniques of merchandising and or product promotion on private labels. The importance of private labels as well as merchandising techniques is increasing in the current retail trade which causes a special interest from retailers in these matters. This interest is being served by the researchers, although there are few studies that analyze the effectiveness of different types of promotions on private label, most of them mainly focus on price promotions (Sethuraman and Raju, 2012). Given this situation, our goal is to provide both theoretical and empirical knowledge about the effectiveness of different merchandising techniques and product promotion available for retailers to encourage their private labels sales. To do this, we analyze a great number of product categories in order that the results have a great power of generalization.

Our findings confirm that not all merchandising techniques are equally effective for private label products. Due to their different characteristics, some techniques are more appropriate than others for private labels. Specifically, signage is the merchandising technique that improves more private labels’ sales. In fact, signage is more effective for private labels than for national brands. This is because this technique does not involve a change to the usual position of the product and facilitates the comparison of objective attributes of different brands, such as price. In this situation, it is more likely that consumers make a reasoned comparison and eventually, choose the product based on functional criteria (Shiv and Fedorikhin, 1999; Viswanathan and
Narayoman, 1994), such as private labels (Lemon and Nowlis, 2002). However, the separation of the product from other competitor brands through placement on an island in a far aisle, or to a lesser extent on an end of aisle display, complicates the comparison on objective attributes of the alternatives. In this situation, consumers only consider emotional attributes, which are more developed by national brands (Keller, 1991). Therefore, islands and end of aisle displays are less effective on private labels than signage. In fact, these merchandising techniques work better for national brands.

Regarding promotions, the results show that price promotion improves private labels’ sales more than product promotion. This is due to price promotions are those that entail a functional nature through direct monetary benefit (Chandon et al., 2000; Hardesty and Bearden, 2003), therefore they offer the same types of advantages that are associated with private labels (Burton et al., 1998; Baltas et al., 1997; Kumar and Steenkamp, 2007). On the contrary, product promotions work better for national brands than private labels.

Therefore, retailers may maximize their profits by using signage for private labels products and island and end of aisle for national brands products. In this way, they optimize the use of the techniques of merchandising and increase the optimum space within the store, and therefore, it also supposes economic benefits. In addition, retailers would further improve their results if they use price promotions in the case of private labels and product promotions for national brands.

This study is conducted in one representative store of one of the largest food retailers in Europe, however, this study could be supplemented with data on other retailers and even other countries to prevent that the specific positioning of the retailer and of its private label can influence the results. The study is performed in a time period of one year to avoid changing trends in the use and positioning of the brand name, so it would be interesting to conduct a similar analysis in the future over a longer time period where the consumption trend of private labels can change. Furthermore, the study is conducted on 22 categories of food products, thus this study could be expanded to include other non-food product categories. Finally, future studies could consider whether different characteristics of the product categories can moderate the results of the merchandising effectiveness on private labels.
5.6. References


The merchandising is one of the tools which retailers are paying more attention in recent years (Inman et al., 2009; Valenzuela et al., 2013.). In this current era with an important competition, the reasons can be many:

a) They take place within the store where consumers decide about 70% of purchases (Bezawada et al., 2009), therefore, they are very effective since can increase sales of the stimulated product until 400% in the short term (Woodside and Waddle, 1975; Wilkinson et al., 1982)

b) They entail a lower cost than other forms of advertising; in fact, they have a higher benefit-cost ratio (Buttle, 1984).

c) They do not involve reductions in commercial margins of retailers and manufacturers as price promotions cause (Ailawadi et al., 2006; Ailawadi et al., 2007). This is due to they may only involve a change in the product’s location without a discount in its price (Inman et al., 1990; Varley, 2006).

d) They have an additional benefit for the retailer because manufacturers pay contributions in order for their products are stimulated (Ailawadi et al., 2009 Valenzuela et al., 2013).

e) They do not damage to the image of the stimulated brand as discounts cause by changing the reference prices of the stimulated product (Blattberg et al., 1995; Kopalle et al., 1999; Zeelenberg and Van Putten, 2005).

Despite these issues which cause merchandising techniques are a very attractive tool for the retailers, previous studies that focus on these techniques are not as prolific as studies about promotions.

For this reason, this thesis has the aim of expanding the theoretical and empirical knowledge about merchandising techniques, by attending to the call for in-depth analysis of these techniques by some authors as Ailawadi et al. (2009).

The main findings of each empirical chapter are summarized in the next section. Subsequently, the practical implications for retailers and manufacturers are provided. Finally, the main limitations of this thesis are discussed and future researches are proposed.
6.1 Summary and Conclusions

This thesis contains four empirical chapters. In chapter 2, the effectiveness of merchandising techniques on computer products which have a high level of involvement and perceived risk, is analyzed depending on their ratings in the two dimensions of quality: the objective quality and subjective quality. In Chapter 3, it is analyzed the effectiveness and temporary effects of two merchandising techniques that involve a change in the product placement (island and end of aisle). In Chapter 4, the effectiveness of the three merchandising techniques most used by retailers (island, end of aisle and signage) is analyzed on twenty two product categories by distinguishing between their hedonic or utilitarian nature. In Chapter 5, the analysis of these three merchandising techniques is focused on whether the stimulated product has private label or national brand. In the following subsections the conclusions of each chapter are summarized.

Chapter 2: Product quality and brand influences on the effectiveness of merchandising techniques

Merchandising techniques and discounts are the main tools available by retailers to encourage the purchase of a product within the store. In addition, retailers can use other tools that act outside the store such as flyers, which can also lead to product purchase. As it happens with discounts, merchandising techniques and flyers are not equally effective on all categories and SKUs. This chapter empirically analyzes how the effectiveness of merchandising techniques and flyers varies depending on the quality of computer products. Thus, we distinguish between two dimensions of quality (objective quality related to technical specifications and the subjective quality attributed to the brand) and compare what commercial stimuli is the most appropriate based on these dimensions of product quality.

Our results show that merchandising techniques, which take place within the store, are more effective to improve the sales of a product with a high subjective quality associated with your brand. This is due to a higher brand assessment may decrease the risk associated with this type of product. By contrast, flyers which are sent to potential consumers’ homes, have greater effectiveness to improve the sales of a product with
higher objective quality since they encourage consulting other information sources and a comparison of other alternatives through a more analytical process.

Chapter 3: Merchandising at the point of sale: differential effect of end of aisle and islands

There exist different techniques of merchandising, which are often analyzed jointly by most previous empirical studies. However, some theoretical studies suggest each merchandising technique may differently influence on the consumer depending on their characteristics (Tellis, 1998; Varley, 2006). In this chapter, we analyze separately the effectiveness of two techniques of merchandising (island and end of aisle) on two product categories.

Results show that the effectiveness of each technique is different in both product categories. Island is more effective than end of aisle for a food product (milk), while end of aisle is more effective for a personal care product (liquid soap). In addition, we also analyze the temporary effects of these techniques, i.e., what happens when the product is stimulated by the techniques for several weeks and what happens when it stops being stimulated. In this regard, we note that product sales do not suffer a significant fall after using merchandising techniques to stimulate it, unlike after using promotions according to previous studies. Even merchandising can serve to cause a SKU’s test and increase its sales in subsequent weeks. However, results again show that these effects vary depending on the analyzed category.

Chapter 4: Effectiveness of merchandising techniques in hedonic & utilitarian categories

We note in the previous chapter that the different techniques of merchandising, as it happens with promotions, differently work depending on the stimulated product categories. Thus, we analyze in this chapter the impact the effectiveness of the three merchandising techniques most used by retailers (the island, head straight and poster) and the effectiveness of the two main types of promotions (price promotions and product promotions) on twenty two food product categories depending on their hedonic or utilitarian nature.
Our results show that island is the most effective merchandising tool for product with hedonic nature since it isolates the product and entail a more emotional or intuitive decision, which is more related to hedonic purchases. By contrary, signage is the most effective tool for utilitarian products because it keeps the stimulated product near other competitors and trigger a more cognitive and analytical decision, which is more related to products purchased by functional or practical motives. Furthermore, results show that price promotions are more effective for utilitarian products since there is congruence between the benefits of this type of promotion and practical motive that cause the purchase of these products. In contrast, product promotions are more effective for hedonic products because there exists a higher congruence between the involved benefits in these promotions and motivations that trigger the purchases of these products.

Chapter 5: Effectiveness of merchandising techniques in private labels & national brands

Another issue that can moderate the effect of any commercial stimulus within a category is the brand. In addition, retailers are paying special attention to the strategies that they can perform on their private labels. This chapter analyzes the effectiveness of the three techniques of merchandising and the two types of promotions and compares their effects on private labels and national brands in the same twenty two product categories analyzed in the previous chapter.

The results show island is the merchandising tool that works better for national brands, followed by the end of aisle. Instead, the signage is the most effective technique to encourage sales of private labels. Regarding promotions, price promotions are more effective for private brands, while product promotions work better for national brands.

6.2. Implications for Practice

For retailers

Merchandising techniques must be treated as one of the main tools available to the retailer to increase the sales of a product. These tools can become more effective than
others that also take place inside the store (promotions or discounts) or others that take place outside the store (flyers) depending on stimulated product characteristics.

Retailers must analyze and know what type of commercial stimulus is more effective and works better for each product that they sell. Thus, retailers can increase their sales and revenues and maximize profits through the appropriate use of merchandising techniques. In this line, the results of this thesis show that retailers must take into account the following issues when they plan their merchandising policy:

1. Product quality is crucial for predicting the effectiveness of merchandising techniques (Chapter 2). The consumers’ assessments on the two dimensions of quality (objective quality and subjective quality) are key when retailers plan what type of commercial stimulus is more appropriate to improve the sales of a product. Thus, it is more interesting using merchandising techniques for them than using flyers if the product stands out for its subjective quality attributed to its brand. On the contrary, if the product stands out for its objective quality related to technical specifications, flyers will be more effective since they allow comparisons of objective attributes.

2. There exist several merchandising techniques with different characteristics, therefore, they may differently affect on stimulated products by them (East et al., 2003; Tellis, 1998; Varley, 2006) (Chapter 3, 4 and 5). Then, retailers must separately analyze different merchandising techniques in order to maximize their effectiveness. Thus, the main merchandising techniques (island, end of aisle or signage) will be more or less appropriate for a type of product or another depending on their characteristics.

3. Merchandising’s temporary effects are different from the price promotions’ temporary effects (Chapter 3). Retailers can use merchandising techniques without thinking that when they stop using it, the stimulated product sales will be below the previous level. In this sense, different merchandising techniques need not lead to lower prices (Inman et al., 1990). This entails advantages with respect to promotions because they do not cause a storage effect too high. Furthermore, they do not modify the consumer’s reference price as it can happen with price promotions (Blattberg et al., 1995; Kopalle et al., 1999; Zeelenberg and Van Putten, 2005). In fact, merchandising may cause a product test and if the consumer is satisfied and comes back to the store in order to purchase again, he will find the product with the same or very similar price.
4. Merchandising techniques, as well as promotions, do not equally affect to all product categories (Chapter 3 and 4). It is interesting to retailers to know what merchandising technique is the more appropriate for the product, which they want to promote. Thus, if we focus on the hedonic or the utilitarian nature of the product category, island is the most effective tool to stimulate hedonic products since this technique complicates comparison of alternatives and causes a more intuitive and emotional purchase related products purchased by emotional motivations, i.e., hedonic products. Instead, signage is the most appropriate tool to encourage utilitarian products, since these products are usually purchased after a more cognitive and analytical process which signages cause.

5. Merchandising techniques can be combined with promotions and this brings synergistic effects that increase the effectiveness of both techniques separately (Chapter 4 and 5). Retailers must combine price promotions with signages since this type of promotion provides an economical and functional benefit which will be noticeable to the consumer when the used merchandising tool allows a comparison of alternatives through a cognitive and analytical process. Thus, completing the previous point, retailers must use utilitarian products stimulated by a signage with price promotions in order to increase effectiveness. Furthermore, product promotions have a more affective nature related to motives that induce the purchase of hedonic products. Thus, retailers can improve their performance if they combine product promotions with island in order to stimulate hedonic products because this type of promotion and merchandising technique cause a more intuitive and experiential process related to hedonic products.

6. Merchandising techniques do not equally affect to all brands within a product category (Chapter 5). Consumers tend to relate the different brands with different sought benefits. Thus, consumers who buy a private label are more price-sensitive and seek more functional benefits that usually involve more cognitive and reasoned decision processes. These processes are facilitated by signages which allow easily comparing alternatives within the product category because they do not entail a change of location of the product. However, national brands (which usually have a higher assessment) may be more associated with emotional or affective benefits. The search of these benefits often entails more intuitive or spontaneous processes, which are favored by the ends of aisle and especially by islands. These merchandising techniques separate the stimulated product from the rest of competitors; therefore, they complicate the comparison of
alternatives. Furthermore, results show that the combination of signages and price promotions is the most effective for private brands. By contrast, the combination of islands and product promotions has better synergistic effects on national brands.

**For manufacturers**

Merchandising techniques are very effective in the short term because many purchases are currently unplanned purchases which are decided within the store. For this reason, manufacturers must invest efforts to their products are stimulated by these techniques within the stores. Moreover, merchandising techniques have also different advantages with respect to other types of promotion and advertising, such as lower cost and lower risk of damage the brand image because they do not reduce the product’s reference price (Buttle, 1984; Kopalle et al., 1999; Zeelenberg and Van Putten, 2005). However, manufacturers must analyze what merchandising techniques are most appropriate for their products in order to maximize the benefits that these techniques. In this sense, they must apply the same advices that were previously detailed for retailers. They must be aware and take into account issues such as what type of quality is higher in their products (objective quality and subjective quality) or what type of product category they make (hedonic or utilitarian products) in order to know what is the best alternative among different merchandising techniques to boost their products.

Therefore, manufacturers should review the above matters to rent space in retailers’ stores with greater guarantees of success. In this line, our results indicate that if a product stands out for its subjective quality, manufacturers should prioritize the use of merchandising techniques over flyers or vice versa, if the product stands out for the quality of its objective attributes. Moreover, if the category has a hedonic nature, they must try to stimulate their products by islands instead of signages. Even, they can combine these islands with product promotions in order to get greater synergistic effects. Otherwise, if the product category that they make has a utilitarian nature, they should try to encourage retailers mainly use signages and price promotion with their products.
6.3. Limitations and Future Research

This thesis presents the results from different empirical studies which are ordered by chapters. In each of these chapters, we call attention to its particular limitations which cause its results must be understood with prudence. In this section, we discuss the common limitations and propose future research to extend the results of the thesis.

Although data from several retailers are used throughout this thesis, we use data from a single representative store from one top retailer in its sector for each empirical study. In Chapter 2, we use data from one of the largest specialist retailers in electronic and computer products in the world (Retail-Index, 2013) in order to analyze the effectiveness of merchandising on more complex products and less frequently purchased, with greater perceived risk and less knowledge. In the remaining chapters, we use data from one of the largest hypermarket retailer in Europe (Retail-Index, 2014) to discuss how the effectiveness of different merchandising techniques varies in a food category with respect to a household category (Chapter 3). Subsequently, new data on 22 categories of food products are collected in the same hypermarket to analyze the effectiveness of islands, ends of aisle and signages depending on the hedonic or utilitarian nature of the stimulated SKU (Chapter 4), and depending on whether the stimulated SKU has national brand or private label (Chapter 5). Thus, we analyze data from a single retailer in each chapter; therefore the power of generalizability of the results is low. For this reason, future researches could use data from different retailers because the effectiveness of different in-store commercial stimuli may vary depending on the characteristics and positioning of the retailer (Ailawadi et al., 2006, Grewal et al., 1999).

The number of observations in our panel data is wide and allows to obtain significant statistical results since the analyzed temporal periods vary between two months and one year, depending on the chapter. However, it would be interesting to conduct a similar study when the economic situation changes because results may also be biased by the current economic situation in the country where data are collected. This economic situation may change consumption habits and the tendency to utilitarian products or private labels (Lamey et al., 2012).
Some studies indicate that the effectiveness of different commercial incentives may have asymmetric effects depending on the characteristics of the product brands (Ailawadi et al., 2006; Bemmaor and Mouchoux, 1991; Lemon and Nowlis, 2002; Macé and Neslin, 2004). We have focused on analyzing the characteristics of the product category that can influence on the merchandising effectiveness in some of our studies (Chapter 3 and 4). However, we have also distinguished between national brand and private label in Chapter 5. Despite this, future researches may try to extend the analysis by distinguishing not only between national brand and private label, i.e., they could distinguish between different types of brands. Even, they could differentiate between various private brands with a distinct positioning (Geyskens et al., 2010; Kumar and Steenkamp, 2007). In our study this was not possible to make this distinction because the retailer does not have a set of private brands with a clearly distinct positioning.

This thesis combines various data sources such as scanner data from retailers, observational data that are collected about the use of different commercial stimuli and even, survey data about assessments of subjective quality of the products (Chapter 2) or ratings about the hedonic or utilitarian nature of the product categories (Chapter 4). However, we have no data about the profile of the consumer who makes the purchase or about the type of visit in which the product is acquired. Previous studies indicate that these issues may influence on the effectiveness of commercial incentives and the purchases decided within the store (Henderson, 1994; Walters and Jamil, 2003). Future researches could incorporate these issues and control their effect on the analysis of merchandising techniques.

Additionally, it may develop new lines of research from this thesis:

This thesis focuses on commercial stimuli that take place within the store, specifically on various merchandising techniques. However, another parallel research line may analyze what type of tool is more effective, in-store commercial stimuli or external commercial stimuli such as advertising on TV, magazines or the internet, depending on the nature of the product.

This thesis analyzes the performance of different merchandising techniques on different product categories depending on their hedonic or utilitarian nature. However, future researches could analyze the effectiveness of merchandising techniques on product categories by classifying the categories according to other characteristics such
as the virtue or vice nature, the impulsive nature, the purchase frequency or the ease of storage.

Finally, future researches could empirically analyze the exact profitability of merchandising techniques for retailers and manufacturers, by quantifying the net margin that these techniques provided them after taking into account the contributions made by manufacturers.

6.4. References


Appendix 1. Questionnaire on quality assessment of computer products.

Dear client:

We are conducting a survey for a study by University of Salamanca in the field of computers products.

If you want to contribute, you should only answer some brief questions according your opinion. You will only spend a few minutes. In order to ensure maximum confidentiality, your answers will be treated anonymously and aggregate form.

Thank you very much for your willingness to complete this questionnaire.

QUESTIONS

1. Distribute 100 points into these characteristics according their importance when you buy a computer

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor speed (GHz)</td>
<td></td>
</tr>
<tr>
<td>RAM capacity (Mb)</td>
<td></td>
</tr>
<tr>
<td>Hard drive capacity (Mb)</td>
<td></td>
</tr>
<tr>
<td>Graphics card capability (Mb)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
</tr>
</tbody>
</table>
2. Assess the quality of these brands according your opinion.

<table>
<thead>
<tr>
<th>BRAND</th>
<th>Very low</th>
<th>Low</th>
<th>Regular</th>
<th>High</th>
<th>Very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACER</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>APPLE</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>ASUS</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>COMPAQ</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>DELL</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>HP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>LG</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>MEDION</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>PB</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>SONY</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>TOSHIBA</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix 2. Questionnaire on hedonic nature.

Dear client:

We are conducting a survey for a study by University of Salamanca in the field of food distribution.

If you want to contribute, you should only answer some brief questions in the most objective way possible. You will only spend a few minutes. In order to ensure maximum confidentiality, your answers will be treated anonymously and aggregate form.

Thank you very much for your willingness to complete this questionnaire.

QUESTIONS

You have to answer to these questions marking one value for each of the product categories. This value must be between 1 and 7 points.

1. You acquire the following product category as a matter…

<table>
<thead>
<tr>
<th>PRODUCT CATEGORY</th>
<th>Just for practice</th>
<th>Just for fun</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
<tr>
<td></td>
<td>1    2    3    4</td>
<td>5    6    7</td>
</tr>
</tbody>
</table>

Appendixes
2. You consume the following product category as something…

<table>
<thead>
<tr>
<th>PRODUCT CATEGORY</th>
<th>Purely functional</th>
<th>Purely by enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

3. You get the following category of product for…

<table>
<thead>
<tr>
<th>PRODUCT CATEGORY</th>
<th>Routine need</th>
<th>Pleasure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>