



Towards a Deeper Understanding of Store Branded Lookalikes: Similarity Judgment and Price Influence

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Abstract

The development of store branded lookalikes (SBLs) imitating established manufacturer national brands has long been a source of friction and dispute between brand manufacturers and retailers. It is evident that retailers often use a close positioning strategy on store brands (SBs) to imitate the look and appearance of leading national brands (NBs) on a wide range of fast moving consumer goods. It is, though, less clear why and how a *me-too* store brand is perceived to be a lookalike to an imitated national brand. At issue is a fundamental question: What makes a store brand *lookalike* and imitated national brand *look alike*? Precisely to what extent do the different packaging features, both in isolation and in tandem, trigger in the consumer's mind similarity between the two goods? Furthermore, the overall market outcome from the introduction and use of lookalike packaging on store brands is also not clear or evidenced, especially its effect on pricing and more generally how this impacts national brand/store brand competition as well as well as competition between competing retailers each purveying their own store brand. Does offering a closer lookalike allow a retailer to price the store brand higher and close the price gap with the imitated national brand? Does offering a closer lookalike allow a retailer to price higher than rival retailers offering less close lookalike store brands?

This thesis seeks to provide some answers to these important questions that have so far received relatively little attention in marketing research. The analysis is based on undertaking different studies of consumers' perceptions gathered through structured surveys regarding actual national brand and store brand equivalents as well as through experiments in manipulating features of store brands (to control for individual effects) to understand how consumers form judgments over product similarity. Along with additional information provided by respondents on their own backgrounds and their shopping behaviour, this primary data is supplemented with secondary data on market features and outcomes, including market share and sales performance data as well as prices, to allow for consideration of contextual aspects that might influence similarity perceptions and also for analysing how the degree of perceived similarity relates to the price gap between competing products. Collectively, the studies undertaken and

reported in the thesis provide several new and perhaps counterintuitive insights to improve our understanding of this prevalent marketing phenomenon and its effects on market outcomes as well as the nature of competitive rivalry in positioning and selling FMCG products.

On the issue of what makes a brand and a lookalike look alike, the analysis shows that whether consumers perceive a store brand to be a lookalike is initially derived from the physical similarity of its packaging, which is primarily determined by colour, size & shape, and imagery. However, the analysis shows that the context matters. Specifically, the findings show that consumers' degree of brand loyalty and brand familiarity, as well as their perception of the retailers' store work together to influence the perception of similarity for a particular pairing of a national brand and the intended equivalent me-too store brand. Accordingly, different consumers will perceive the same product pairings differently based on their experience, tastes and broader perceptions.

Regarding the nature of NB and SBL prices, it might be expected that high packaging similarity of SBLs will bring more intense price competition between the SBLs and the targeted NBs they imitate and among competing SBs. There is indeed evidence for this here. However, again, the context is shown to be important. Several marketing context indicators were considered in analysing the price competition between the products. A key finding is that the price gap tends to be wider for NBs that have growing sales (measured by a higher sales turnover compared to the previous year) or have higher market shares in a given category. In contrast, the price gap between an SBL and targeted NB tends to be lower the greater market power of the SBs in a category (measured by store brands share of category sales) and the strength of rival manufacturer brands in the same category (captured by relative brand shares). In terms of cross-retailer rivalry, an SBL tends to be priced more closely to a competing SBL the higher is SB familiarity and the greater the relative strength of the retailer (measured by its retailer market share). In contrast, higher category share held by store brands is found to allow for a wider price gap between competing SBLs. All these effects were tested in numerous FMCG product categories from across the

different leading grocery retailers in the UK, which adds a degree of reassurance about the generality to the studies conducted in this thesis.

The findings reported in the thesis add to the existing literature in five significant ways. First, it confirms that colour, when treated in isolation or in tandem with other packaging features, is the most important packaging cue that determines the physical similarity of SBLs. Second, it reveals how various contextual indicators, such as brand loyalty, brand familiarity, and store image, can moderate the similarity perception process. Third, it demonstrates that the close packaging position of an SBL to a targeted NB will intensify the price competition between the NB manufacturer and the retailer. Fourth, it highlights the strategic importance of SBs in assisting retailers with cross-store competition where retailers compete amongst themselves through their SBLs. Fifth, it reveals the necessity of considering the influence of several frequently mentioned marketing performance indicators in this price competing process and these moderate or accentuate the packaging similarity effect, such as the targeted NB manufacturer's market strength, the general market strength of the SBs, and the competition intensity in the NBs' market.

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Chapter 1 Introduction

1.1 Research motivation and background

Imagine you are going to throw a party. You have written down a shopping list for the preparation: cola, beer, cider, soft drinks, crisps, nuts, cookies, chocolate bars, cakes, cheese, crackers, paper towels, cups, plates, *etc.* What is the shopping process?

At the time when you wrote down the list, you may or may not have decided which particular brands to buy – whether specific national brands (NBs) or store brands (SBs) – for the items in the shopping list. But what is for sure is you need first to decide how and where to shop. You could choose to shop online, make orders accordingly, and then wait at home for the delivery. Alternatively, you could prefer to wander actually the aisles in a supermarket, pick up items from the shelves, and take them home by yourself. No matter which shopping method you choose, you will have to consider the specific retailer stores for making these purchases. Would you buy them from just one supermarket or different supermarkets? At this stage, you are facing the decision of the venue for patronage. This decision rests on the competition between retailers, referred to in this thesis as “cross-store competition”.

After you choose the shopping venue, for instance deciding to go to a *Tesco Metro*, you search through shelves for the things on the list, item by item. Though you might not have written it down, for some items you would already bear in mind the intended brands. But when you arrive at the corresponding shelves, you might face the kind of items available for each product type illustrated in Figure 1.1.



Figure 1. 1 Examples of store branded lookalikes

These are familiar scenarios that might happen in our daily life, facing a choice between well-known national brands (NBs) and various store brands (SBs). Similar shelf scenes can be found in most leading supermarkets in the UK. As a foreign student who has been in the UK for four years now, I experienced a change from having no idea about the wide range of brands of fast-moving-consumer-goods (FMCGs) in the UK to becoming familiar with various leading retailers and their SBs. In the process, my shopping habits have adjusted from always picking internationally available NBs or choosing the “store branded lookalikes” (SBLs) when the original NBs are absent, to deliberately switching to SBLs as smart alternatives offering good value to the NBs in selective categories. As a consumer, I am not alone in experiencing such change in shopping attitudes and habits in buying for FMCGs.

Store brands (SBs) have become an effective means for retailers to challenge powerful national brands (NBs) and international brands, to negotiate with suppliers, and strengthen consumer store loyalty (Deng and Kahn 2009; Dhar, Hoch, and Kumar 2001; Dobson and Waterson 1999; Gielen 2012; González-Benito and Martos-Partal

2012). To maintain these advantages and to encourage shoppers to switch from choosing NBs to buying SB substitutes, retailers might use various marketing strategies, such as comparative advertising, delisting brand trials, lookalike packaging, and biased shelf allocation (Dobson and Seaton 2011). Among these switching marketing strategies, lookalike packaging is the most controversial one.

The term “lookalikes”, alternatively called “imitation”, “me too” or “copycat”, refers to products that are packaged similarly to leading NBs in respect of the colour, size, shape, wrapping material, product name, graphics and other features of the packaging (Dobson 1998; Rafiq and Collins 1996). The development of store branded lookalikes (SBLs) imitating established manufacturer national brands has long been a source of friction and dispute between brand manufacturers and retailers (Balabanis and Craven 1997; Rafiq and Collins 1996). It is evident that retailers often use a close positioning strategy on SBs to imitate the look and appearance of leading NBs on a wide range of fast moving consumer goods. For instance, it has been estimated by the brand consultancy Interbrand that lookalikes account for some 2% of the UK grocery market or £1.5 billion per year. A survey of national US supermarkets found that half of the SBs imitated a leader brand package at least in colour, size & shape (Scott-Morton and Zettelmeyer 2004) and trade loss due to trademark infringement was estimated to be \$512 billion in 2004 alone (Zaichkowsky 2006). A latest UK example in hand is the lawsuit between “Saucy Fish”, the original NB owned by Icelandic Seachill, and the lookalike substitute from Aldi “Saucy Salmon”.

1.2 Research questions and objects

Existing research has mainly addressed the marketing influence of the lookalike phenomenon from three aspects: generalisation effects (Loken *et al.* 1986; Burt and Davis 1999; Foxman *et al.* 1990; Zaichkowsky and Simpson 1996); consumer confusion (Foxman *et al.* 1990; 1992; Howard *et al.* 2000; Kapferer 1995; Rafiq and Collins 1996); and consumer evaluation of the lookalikes (d’ Astous 2001; van Horen and Pieters 2012a; 2012b; 2013; Miceli and Pieters 2010). Marketing and trademark infringement research have focused on the threats that high similarity lookalikes pose to NBs (Morrin and Jacoby 2000; Zaichkowsky 2006; Aribarg *et al.* 2014). The basic

belief is that the more similar the lookalikes are to NBs, the stronger the likelihood of brand confusion, which in turn leads consumers to make a more positive evaluation of the lookalikes (Loken *et al.* 1986; Warlop and Alba 2004). Thus, imitation research has emphasised the examination of potential brand confusion caused by high similarity lookalikes (Foxman *et al.* 1990; Howard *et al.* 2000; Kapferer 1995; Miaoulis and d'Amato 1978; Simonson 1994), and these are typically the cases brought to court (Collins-Dodd and Zaichkowsky 1999; Mitchell and Kearney 2002).

Other researchers have explored how consumers evaluate lookalikes. For example, d'Astous and Gargouri (2001) found that consumer evaluation of brand imitations does not depend on how good the imitation is but on the image of the store, the presence or absence of the imitated brand, product category involvement, product familiarity, brand sensitivity, generalised brand loyalty and the category to which the lookalike product belongs. Miceli and Pieters (2010) test the effects of the copycat strategy (attribute-based *vs.* theme-based) and consumers' mindset (featural focus *vs.* relational focus) on the perceived similarity between a leading brand and a copycat brand, revealing that the copycat strategy and the mindset of the consumer interact to determine perceived similarity. More recent studies show that moderately similar copycats are actually evaluated more positively than highly similar copycats when evaluation takes place comparatively, such as when the leader brand is present rather than absent (van Horen and Pieters 2012a). Also, when consumers are under circumstances of uncertainty, the familiar feel presented by the lookalike decreases the consumers' perceived risk, thus, even blatant lookalikes would be appreciated (van Horen and Pieters 2013).

The SBL, despite being loved or loathed, has nonetheless penetrated various categories, especially in the FMCG sector over the past couple of decades or longer (e.g. Rafiq and Collins 1996). To the NB manufacturers, one of worst outcomes caused by SBLs is that consumers switch to SBs and stick with follow-on purchases. Existing research on this phenomenon shows that if properly managed according to the shopping context, retailers can benefit from the lookalike packaging of their SBs based on leading NBs, whether with high, medium or low packaging similarity (van Horen and

Pieters 2012a; 2012b; 2013). Nevertheless, considering the NB manufacturers' perspective, the SBLs not only directly hurt the manufacturers of the NBs they target, but also harm those non-targeted secondary NB manufacturers by displacing them, even when possible "consumer confusion" is constrained (Aribarg *et al.* 2014).

It is, though, less clear why and how a *me-too* store brand is perceived to be a lookalike to an imitated national brand. At issue is a fundamental question: What makes a store brand *lookalike* and imitated national brand *look alike*? Precisely to what extent do the different packaging features, both in isolation and in tandem, trigger in the consumer's mind similarity between the two goods? Furthermore, the overall market outcome from the introduction and use of lookalike packaging on store brands is also not clear or evidenced, especially its effect on pricing and more generally how this impacts national brand/store brand competition as well as competition between competing retailers each purveying their own store brand. Does offering a closer lookalike allow a retailer to price the store brand higher and close the price gap with the imitated national brand? Does offering a closer lookalike allow a retailer to price higher than rival retailers offering less close lookalike store brands?

The intention of the thesis is to add to the body of knowledge and research on the phenomenon of SBLs. Collectively, the studies undertaken and reported in the thesis provide several new and perhaps counterintuitive insights to improve our understanding of this prevalent marketing phenomenon and its effects on market outcomes as well as the nature of competitive rivalry in positioning and selling FMCG products. Through the combination of conceptual models and empirical analysis utilising both primary and secondary data, the overriding objective is to make at least five substantive, distinct, and original contributions in the thesis. First, it confirms that colour when treated in isolation or in tandem with other packaging features is the most important packaging cue that determines the physical similarity of SBLs. Second, it reveals how various contextual indicators, such as brand loyalty, brand familiarity, and store image, can moderate the similarity perception process. Third, it demonstrates that the close packaging position of an SBL to a targeted NB will intensify the price competition between the NB manufacturer and the retailer.

Fourth, it highlights the strategic importance of SBs in assisting retailers with cross-store competition where retailers compete amongst themselves through their SBLs. Fifth, it reveals the necessity of considering the influence of several frequently mentioned marketing performance indicators in this price competing process and these moderate or accentuate the packaging similarity effect, such as the targeted NB manufacturer's market strength, the general market strength of the SBs, and the competition intensity in the NBs' market.

1.3 Research methodology

This thesis seeks to provide some answers to these important questions that have so far received relatively little attention in marketing research. A positivist philosophy was adopted as packaging similarity and price competition can be measured using relative, objective, and quantitative scales. This research follows a deductive approach and implements an explanatory research design. The analysis is based on undertaking different studies of consumers' perceptions gathered through structured surveys regarding actual national brand and store brand equivalents as well as through experiments in manipulating features of store brands (to control for individual effects) to understand how consumers form judgments over product similarity. Along with additional information provided by respondents on their own backgrounds and their shopping behaviour, this primary data is supplemented with secondary data on market features and outcomes, including market share and sales performance data as well as prices, to allow for consideration of contextual aspects that might influence similarity perceptions and also for analysing how the degree of perceived similarity relates to the price gap between competing products.

1.4 Structure of the rest of the thesis

The rest of the thesis is divided into five chapters. Chapter 2 concentrates upon a comprehensive review of the pertinent literature linked to the research objectives. It first specifies the definition, scope, lifecycle and impact of the key terminology in this research. It then critically reviews existing literature on three topics: the effects of lookalike packaging, the influences of lookalikes on consumer behaviour, and the

competition between SBs and NBs. Finally, research questions are identified and the conceptual framework is presented. Chapter 3 explains the key constructs included in the conceptual framework and on the basis develops the research hypotheses. Chapter 4 describes the epistemology on which this research is based and the characters of various methodological choices. It outlines an overview of the positivist approach and the quantitative methods adopted in this research. The data collection, including both primary and secondary data, the analysis techniques, and the statistical models are also discussed in this chapter. Chapter 5 presents the statistical analysis of this research, details the outcomes of the structural equal modelling and regression analysis, tests the hypotheses. The chapter ends at a discussion of the findings. Chapter 6 concludes the thesis with a discussion of theoretical contributions and managerial insights derived from the studies. It then points out the research limitations and closes the thesis with some suggestions for future research.

Chapter 2 Literature Review and Conceptual Framework

2.1 Introduction

This chapter aims to achieve two goals for this research. The first goal is to specify the research context of this thesis by interpreting what a lookalike product is and why it is prevalent in the retail market. The second purpose, which is the essential goal, is to establish the theoretical background of this research through a comprehensive literature review. The literature review addresses mainly two aspects: the impact of lookalike packaging on consumer behaviour, and on the NB-SB competition. The former shows the various influences of lookalike products on consumers, including consumer confusion, mis-purchase behaviour, and possible biased evaluation of both the imitated NB and the SBL. A basic research question that has been missed in existing literature is pointed out and developed as the first central research question. Then, a literature review relating the effect of lookalike packaging (i.e. close positioning strategy of an SB to an NB) on the NB-SB competition presents reasons why retailers favour close positioning strategies with the SBs, and how the presence of SBs affects the price competition between the NBs and the SBs. The two gaps exist in extant research are interpreted and developed as the second and third central research questions.

The literature review consists of four parts (the following four sections in this chapter). To clarify the research context, section 2.2 reviews the phenomenon of lookalikes from four aspects. It starts by reviewing the definition of the key terminologies, namely the lookalikes and the SBLs, and follows with stating the specific research scope. Following on from this, the lifecycle of SBs is depicted to explain the reasons for the presence of the SBLs. Last in this section is the analysis of the impact of the close positioning strategy of SBs on the retailers that introduce it, explaining why it is such a prevalent and long-lasting marketing strategy adopted by retailers worldwide. Section 2.3 explores the effects of lookalike packaging in order to uncover why do SBLs make sense, regardless of the risk of disputes with brand manufacturers. Then section 2.4 discusses the marketing outcome of lookalikes from the demand side (the consumers). An overview shows that relevant studies are mainly gathered under three topics: the generalisation effects of lookalikes, consumer confusion caused by lookalikes, and consumer evaluation of lookalikes. Following this, section 2.5 analyses the marketing

outcome of lookalikes from the supply side, which involves both the retailers and the NB manufacturers. Specifically, it first reviews the research on the positioning of SBs, revealing the possible choices that retailers have when introducing an SB and why they choose the close positioning strategy for standard SBs. It then reviews literature addressing the pricing effects of SBs, showing the inconclusive arguments around the overall pricing influence of the presence of SBs. Section 2.6 summarises the key insights obtained from the literature, and on this basis identifies the research gaps that are of interest to this research, finally closes the chapter by presenting the framework developed.

2.2 The phenomenon of lookalikes: definition, scope, lifecycle, and impact

2.2.1 Definition

Though various other terms can be found to describe how SBs (or private labels) are positioned to look very similar to certain leading manufacturer brands, including “imitation” or “copycat”, this research uses the term “lookalike” to highlight that the essence of the lookalike phenomenon is the similar outlook of products. The term “lookalike” was initially publicised in the UK with respect to the litigation case between Coca-Cola and Sainsbury’s Classic Cola, concerning about the lookalike packaging of the latter compared to the former (Balabanis and Craven 1997; Rafiq and Collins 1996). This research stresses that the issues around this phenomenon are primarily due to the “lookalike packaging” *per se*, and it draws on research interests in the UK market (In other words, it is not just the ingredients, formula and taste that are similar, but the way the product is presented).

In this research, adopting the definition applied in the report commissioned by the Intellectual Property Office (Johnson *et al.* 2013), the term “lookalike” is defined as:

A lookalike product is a product sold by a third party which looks similar to a manufacturer brand owner’s product and by reason of that similarity consumers perceive the lookalike to share a greater number of features with the manufacturer brand owner than would be expected by reason of the products being in the same product category alone.

Therefore, SBLs are defined as lookalike products that are produced on a retailer's account, either bearing the retailer's name (e.g. Sainsbury's or Asda) or a made-up brand sponsored by the retailer (e.g. Aldi and Lidl usually label their SBLs with a cover-up brand name), and sometimes both (e.g. Tesco with its own name SBs, discounter and value brands).

2.2.2 Scope

To clarify the research scope, it is necessary to distinguish this specific term from two related but different aspects. First of all, lookalikes are different from direct copies, i.e. counterfeits. Counterfeits are fake products. They seek to exactly replicate the original branded products (usually of high value), and are then intentionally mis-sold as the originals to customers, either to deceive consumers or with them fully aware (Bian and Moutinho 2009; Lai and Zaichkowsky 1999; Wilcox *et al.* 2009). Producing and selling counterfeits is illegal, at least in Europe and US, and they are usually of low quality and much cheaper than the originals (e.g. a supposed "LV" handbag purchased for less than 100 dollars on the black market in China). In contrast, lookalikes are products produced "to be" some well-known brands in the same category (Zaichkowsky 1995; Dobson and Zhou 2014). They are packaged like the originals but use their brand names and differ in appearance, so they are not exact copies but have elements of imitation.

Another distinction worth attention is that between the SBLs and the manufacturer's branded lookalikes (MBLs). The former are lookalike products produced by a retailer and sold exclusively in stores owned or controlled by this retailer. The latter refers to lookalike products produced by a manufacturer, but the manufacturer has to find resellers (usually the retailers) to reach final consumers, and can be commonly presented in various retail stores. Obviously, the retailer holds full control of the presentation and supply prices of its own SBLs, and it has different ways (e.g. in-store marketing techniques) to communicate with final consumers. In contrast, the manufacturer of the MBLs can only decide the wholesale price, and leave the resale price (within a price range) to the retailers (in the absence of resale price maintenance being legally enforceable).

The relationship among the various players involved in these two terms is also different. By selling SBLs, retailers act as both co-operators (as customers) and competitors to the manufacturers of the targeted NB, while MBL manufacturers only act as competitors to the manufacturers they target. It is common to see manufacturers take legal action against any spotted trademark infringement by other NBs, but a similar action is less observed between NB manufacturers being imitated and the retailers of SBLs (Collins-Dodd and Zaichkowsky 1999; Rafiq and Collins 1996). Due to the double-agent status of retailers, manufacturers are reluctant to face the risk of being delisted or losing shelf space if they confront the retailers of SBLs (Finch 1996). This “double agent” concern arises because of the retailer’s conflicting position as both a customer and competitor for NBs.

The focus of this research is on SBLs. SBLs are prevalent in multiple product sectors, for instance, in clothing, electronics, medical care, toys, *etc.* However, in this thesis, the research scope focuses on the FMCGs sector.

2.2.3 Lifecycle

SBs, or private labels, are brands that are owned, controlled, and more importantly sold exclusively by a retailer. Over 100 years ago, SBs were first introduced in only a few commodity product categories such as tea (Fitzell 1982). Today, most modern retailers, especially leading retailers in the UK market, produce and sell their own SB products. Such SBs are often marketed as being of equal or sometimes even better quality than their NB counterparts (Kumar and Steenkamp 2007). McKinsey (1993) describes the evolution process of such an SB or lookalike as a lifecycle with four generations:

In the ‘First Generation (Generic)’, only a low volume of SBs or lookalikes was found in categories of functional commodity products. The technology of these SBs lagged behind their market leader, which makes the consumers perceive them as being of lower quality, with an inferior image. As a result, the price advantage of the SBs was indispensable in order to attract consumers. Later, they developed into the ‘Second Generation (Quasi-brands)’. At this stage, a large volume of SBs or lookalikes was

spotted in categories featured one-off products. Though the technology of the SBs still lagged behind their market leader, the perceived quality of such SBs, which was still inferior to their NB counterparts, improved significantly to being of average quality. Price remained a key instrument to encourage purchase. However, many NB manufacturers became partly specialised in producing SBs. Following this, the 'Third Generation ("Umbrella brand of trade") arose. The features of this generation were more apparent in big category products. It evolved up to the point that retailers became mostly specialised in SBs, the number of SKUs expanded, the technology grew closer to that of the market leaders, and the quality/image improved so that it was in line with the leading counterparts. Quality works together with prices to attract purchasers, as well as national manufacturers. Most recently, the 'Fourth Generation (Segmented private labels: shaped brand) has begun. SBs produced in this generation are treated as image-forming groups. Such SBs, although they have many SKUs, are stocked in small volumes. They are developed through innovative technology, and advertised with equal or superior quality/image to leading brands. Moreover, providing better SB products is the criterion for driving purchases and attracting international manufacturers.

Among these four generations, the lookalikes are most likely to be adopted in the Third and Fourth Generations of products. The lifecycle of an SB or a lookalike is initially started as a cheaper alternative to the leading NB, with its strength residing in the much lower price, rather than competing on quality. Gradually, as more money is invested in improving its quality, the SB or lookalike grows as a brand, standing for the retailer in its own right (Sahay 2006).

Distinctively, from the perspective of strategic roles, SBs can be divided into three quality tiers: economy SB, standard SB and premium SB (Burt and Davis 1999; Choi and Coughlan 2006; Kumar and Steenkamp 2007). SBs were initially plain packaged and marketed as cheap alternatives to the NBs, and mainly targeted at consumers who wanted to cut down their daily spend and were thus willing to accept lower quality or poor packaging (Davies *et al.* 1986; de Chernatony 1988). Such plain products are now referred to as "economy" SBs. Later, "standard" SBs were developed to mimic

leading brands, which are generally referred as SBLs, or me-too SBs. They are often packaged like mainstream NBs in respect of colour, size, shape, and image, or even with similar product names or brand names (Dobson and Zhou 2014; Johnson *et al.* 2013; Rafiq and Collins 1996). The lookalike packaging of SBLs initially serves to attract consumers' attention at the point of sale, and then further delivers a signal of comparable intrinsic quality to that of the targeted NBs (Burt 2000; Choi and Coughlan 2006; Corstjens and Lal 2000). In recent years, the retailers expanded their range to introduce "premium SBs", which are distinctively packaged, and priced the same or even higher than their NB counterparts. They are marketed as a reflection of the "personality of stores", in an attempt to compete head-to-head with NB manufacturers (Kumar and Steenkamp 2007). All of the three tiers of SBs are expected to grow, but most of the SB sales still come from the mid-tier standard SBs that the SBLs belong to, which represents the largest proportion of sales (ter Braak, Dekimpe and Geyskens 2013; Spary 2014; Tristram 2014).

2.2.4 Impact

The introduction of lookalike packaging can assist the retailer with dealing with two types of competition: cross-store competition and in-store competition. The former refers to competition between retailers. It happens at the stage when a consumer has formed a shopping list but not yet decided which store to visit. The outcome of cross-store competition determines whether a retailer gains or loses customers. In turn, the retailer can gain "some" profits when a consumer decides to shop in a store owned by the retailer or "nil" profit if the consumer shops elsewhere. In contrast, the within-store competition represents the competition between NB manufacturers and the retailers in respect of which products are selected on the shopping trip. It happens after a consumer enters into a specific retail store. Within-store competition relates to how much profit a retailer can obtain according to the products purchased. By introducing SBLs, retailers are able to segment consumers into "loyals" who consider only NBs, and "switchers" who would consider SBs for best value. In this segmentation, retailers sell NB to the loyals and cater for the switchers with SBLs, and through price discrimination they obtain the opportunity to achieve profit

maximisation (Dobson and Chakraborty 2015). Only when a retailer ‘wins’ the cross-store competition, so that a consumer, either a brand-loyal or a switcher, chooses to shop in their specific retail store, does it proceed to the within-store competition. To all of these regards, the prerequisite for a retailer to obtain profit from any give shopping list is to win the cross-store competition, but the level is then determined by the product mix sold and the margins made on each other.

For retailers, selling NBs and SBs play different roles. They stock NBs to attract and retain consumers, because this is expected by consumers in their retailer choice, whereas they sell SBs to establish consumers’ store loyalty (Ailawadi *et al.* 2008; Corstjens and Lal 2000). Always keeping NBs in stock and pricing them fairly does not necessarily satisfy all consumers’ needs, but out of stock of NBs or unfairly pricing NBs (compared to those in the rival retailers’ stores) would cause consumer dissatisfaction. In contrast, a positive impression established through SB purchase experiences would add credit to consumers’ satisfaction, and hence help to develop store loyalty by associations unique to that retailer.

Cross-store competition critically affects profit distribution among retailers. Extant studies on consumers’ selection between an NB and an SB within a store manifest three possible outcomes. First, brand-loyal consumers will choose only the NB when the price is at or under their reservation price; second, switchers will buy the SB when it meets the subjective expectation of ‘value for money’; otherwise, third, where the price of the NB exceeds the reservation price and the value of the SB fails to reach expectations, consumers (either loyals or switchers) would rather buy nothing and will switch stores (Dobson and Chakraborty 2015). With the exception of the third situation, retailers can gain considerable profits irrespective of whether the consumers decide to buy the NB or the SB. Therefore, retailers only need to avoid the third situation. They can do so by either maintaining the price of the NB within an acceptable range (although constantly monitoring the price of NBs at rival retail stores) or by educating switchers about the good value attached to their own SBs. As SBs are unique to a particular retailer, they can serve a differentiating role and act as a key tool in dealing with cross-store competition.

2.3 The effects of lookalike packaging

Lookalike packaging for SBs is a common strategy worldwide, indicating that this strategy must be effective. This expectation is especially valid in the case of the UK when considering the appearance of SBLs on the shelves of those leading grocery retail stores (e.g. British Brand Group (BBG) report 2011; BBG report 2012; Johnson *et al.* 2013), who have already established a strong store image and have developed strong consumer loyalty. However, this carries the risk of disputes with brand manufacturers. Why do lookalikes make sense despite this risk? To answer this question, this section draws attention to the marketing importance of packaging, and then explains the rationale for the increasing application of lookalike packaging used by SBs.

2.3.1 Why packaging is important

The essence of SBLs is that the lookalike packaging is closely related to, or mimics, certain well-established NBs. The importance of packaging in consumers' purchase decisions makes lookalike packaging a convenient and profitable strategy in developing SBs where NBs have already invested heavily in building up familiarity in consumers' mind. Previous studies have empirically tested and supported the importance of packaging from various aspects. This research closely investigates two streams of research to uncover the significance of packaging in the lookalike phenomenon. In detail, it first discusses the importance of packaging as a communication tool. Following this, the effect of packaging at the point of sale is analysed. Then, the key packaging elements that might affect consumers' purchase behaviour are also discussed.

Packaging as a communication tool

The importance of packaging as a communication tool with consumers is evident in the marketing literature (Nancarrow *et al.* 1998; Underwood and Ozanne 1998). Packaging offers a vivid path to deliver messages about product attributes to consumers and to communicate with them directly. It acts as a medium of

communication beyond its fundamental functions of convenience and protection. Basically, packaging offers consumers information reflecting the product contents (e.g. getting to know what product is contained within the pack through an ingredients list or an image). Consumers have become increasingly reliant on packaging to obtain different aspects of product information, including the nutritional values and calories for foods, volumes for drink, expiration dates, dosages for drugs, and so on (Raghubir and Krishna 1999; Rettie and Brewer, 2000). The information contained on the packaging, although it may be presented for promotional purposes or is required by mandated regulation, serves as a critical cue, assisting consumers with deciding which product to choose from the shelves.

The increasing time pressure and busy lifestyles that consumers face nowadays allow them a limited amount of time to evaluate a product. The evaluation typically lasts for only a few seconds and final purchase decisions are then made on the basis of the quick evaluation. Such a rushed process means that consumers ignore many elements or messages on the package. For instance, Jugger (1999) in Louw and Kimber (2006) claims that “brands purchases are being made or broken in the final five seconds.” On average, consumers spend maximally six seconds on the purchase decision for an item (The Economist “Warfare in the Aisles”, 31 March 2005). Hoyer (1984), by observing consumers’ purchase behaviour in-store on detergents in the US market, reported that it takes only 13.2 seconds for a consumer to make a purchase decision, counting from entering the specific aisle to placing a product in their trolley or basket. The same investigation was repeated in Singapore by Leong (1993), which revealed the time to be even shorter, i.e. 12.2 seconds.

Nowadays, as many shopping trips are made under time pressure and are impulsive, consumers tend to make purchase decisions on instinct. They do not give careful consideration to the various elements presented on packages, not to mention necessary comparisons between different products within the same categories. Moreover, as revealed by Rettie and Brewer (2000), more than two-thirds of purchase decisions are made at the point of sale. To this regard, in such an information-overload era, distinctively designed packaging that can present key

information simply and accurately is invaluable in order to win at the point of sale.

Referring to the literature, Silayoi and Speece (2004) in a focus group study have explored the significance of packaging design for packaged foods in increasingly competitive markets, highlighting the impact of time pressure and involvement level. The findings show that the visual attributes of the packaging exert major influences on consumers' product choice, and image and colour are frequently the principle effect. For products of lower levels of involvement, picture vividness generates the most positive influence on product choice. Moreover, appropriately presented information on packaging has a critical effect on consumers' purchase decision, given that consumers are increasingly dependent on reading the label to judge product performance if they are examining the product more carefully. Visual attributes, such as images, size and shape, positively affect purchase choice in situations that feature low involvement, whereas informational attributes perform a more effective role in decision-making processes with high involvement. However, time pressure alters the way consumers evaluate products at the point of sale, and distracts their attention away from informational attributes. Similar studies, such as Silayoi and Speece (2007), Rettie and Brewer (2000), and Underwood *et al.* (2001), all emphasise the role of visual elements in packaging design and influencing purchase decision.

However, displaying too much additional information on the package will increase the possibility that consumers miss the key message they need to make a purchase decision. Therefore, it is recommended by marketers that only two or three points of information should be included on a front label. Any redundant information is likely to distract consumers from the product's appeal and perceived quality, prohibiting the packaging's effective communication with the target consumers (Yong 2003). More importantly, amongst the various marketing communication tools (such as advertising, in-store slogan, and packaging *etc.*), packaging is the only part that a consumer can take home after purchase.

Point of sale

It is evident in literature that packaging has a powerful effect on consumers at the

point of sale (Prendergast and Pitt 1996; Wells *et al.* 2007) and can therefore boost product sales (Garber *et al.* 2000; Silayoi and Speece 2004; Rundh 2009; Simms and Trott 2010).

The dual role of packaging at the point of sale and post-purchase makes it a unique marketing tool. Rather than just transmitting information to consumers at the point of sale, it maintains its influence on the consumers after the actual purchase of the product. Nevertheless, gaining consumers' attention and communicating with them the benefits of the product attributes at the point of sale is the prerequisite of winning the fierce competition at the key stage of consumer decision making – the crowded shelves. FMCG purchases are repeated, low-involvement decisions. Shopping in a self-service retail environment, which is a universal feature nowadays, consumers tend to make routine purchases. In most circumstances, consumers do not bother to search extensively and evaluate carefully information about the brands in the FMCG sector. Such a tendency makes packaging a silent but critical tool of communication at the point of sale. As emphasised by Underwood *et al.* (2001), the primary role of product packaging is to attract consumer attention by standing out from the competitive clutter and attaining the consumers' consideration. To fill a shopping basket with around 40 products, consumers need to sift through as many as 25,000 items stocked in a supermarket (Louw and Kimber 2006). This information overload results in consumers ignoring most items placed on shelves, which highlights the key role of packaging as the “salesman on the shelf”, helping the product to be noticed. This attention-attracting role is primarily fulfilled through extrinsic cues such as colour, size and shape, as well as images on packages, which is especially critical for brands with low market familiarity (Garber *et al.* 2000; Underwood *et al.* 2001).

Critically, at the point of sale, packaging communicates effectively with consumers when they are deciding what they are going to buy. Lofgrun (2005) examines the importance of product comparisons at the first moment in front of supermarket shelves. In such critical moments, products are unable to speak for themselves; it is the attracting features and elements presented on the product packaging that help to win consumers' attention and further persuade them to make a purchase decision.

Packaging is intrinsically linked with the product's brand identity, as it serves to communicate with consumers at the critical point when the product is being sought and evaluated. Moreover, it stimulates brand impressions and creates brand cues such as value, quality and safety, which work together to give consumers sound reasons to buy. Unlike advertising, which is typically not at the point of sale and generally faces the difficulty of reaching all consumer segments, packaging is exposed to all buyers, conveying information to assist their purchase decisions and reminding consumers of the product before consumption takes place.

As established in the literature reviewed in the previous sub-section, packaging attributes can exert either a strong or weak effect on the purchase decisions determined by various contextual variables, such as consumers' involvement level with specific products, time pressure or the individual characteristics of consumers (Underwood 2003; Silayoi and Speece 2004). Further, consumers neither have the desire nor do they actually bother to investigate and evaluate all of the available choices to them within a store; a great deal therefore depends on the various extrinsic attributes of packaging as well as in-store factors (Butkeviciene *et al.* 2008; Simms and Trott 2010). In a crowded selling environment like a supermarket, the varied choice of brands and the wide range that is offered to consumers at the point of sale force manufacturers to work harder on the design of their packaging in order to achieve a distinctive appearance (Underwood *et al.* 2003; Silayoi and Speece 2007). This provides an explanation of the redirecting of traditional mass media communication to point of sale promotions and communication (Ampuero and Vila 2006).

Normally, shoppers might need to filter around 300 brands per minute in a standard supermarket (Ampuero and Vila 2006). This calculates as less than one-tenth of a second being available for a product to attract the consumers' attention and compete for the chance of being purchased. Therefore, the product's packaging must conduct many of the sales tasks for creating an outstanding and persuading impression. As discussed in the previous sub-section, the visual attributes of packaging perform as extremely vivid signals compared to verbal ones, and are easier and more convenient

to assist with consumers' purchase decisions in a supermarket or similar self-service outlet. In this regard, the visual attribute colour is often manipulated as a key differentiator (Grossman and Wisenblit 1999). Specifically, adopting a distinctive visual cue against the conventional norm can bring benefits. For example, red is the general colour widely used in the product sector of soft drinks, and is used by the leading brand Coca-Cola. Pepsi, rather than follow this norm, selects the colour blue as its theme colour, so that its brand will stand out.

It is obvious that packaging deals with an extremely complicated task. So many products are competing for attention, and different information is required for the needs of different consumer individuals. Regardless of the complexity of information, packaging has to achieve its role as a successful information media within seconds. Attractive and memorable packaging is the target that all leading brand manufacturers struggle to achieve and maintain. The prevalence of lookalike packaging makes the goal of keeping one step ahead of these lookalikes the ultimate design challenge for leading brand manufacturers.

Packaging elements

What are the key elements that affect consumers' purchase behaviour? Many studies have addressed this issue through the classification of packaging elements (Ampuero and Vila 2006; Butkeviciene, Stravinskiene and Rutelione 2008; Kotler 2003; Underwood *et al.* 2001; 2003; Vila and Ampuero 2007; Smith and Taylor 2004; Silayoi and Spee 2004; 2007).

Kotler (2003) summarises six variables that need to be considered when designing packaging: size, form, material, colour, text and brand. In a similar vein, Smith and Taylor (2004) distinguish six elements that producers and designers should evaluate when creating effective packaging: form, size, colour, graphics, material and flavour. Silayoi and Spee (2004; 2007) posit that four main packaging elements potentially affect consumers' purchase decisions, and these can be further divided into two categories: (1) visual elements, consisting of the graphics, size and shape of the packaging, which link to the affective side of decision making; and (2) information

elements, referring to the information provided and the technologies used in the packaging, related more to the cognitive side of decision making. Vila and Ampuero (2007), and similarly Underwood (2003), classify the elements into two categories: (i) graphic elements, including colour, typography, shapes used, and images; and (ii) structural elements, composed of form, size of the containers, and materials. Though similar to the division of Smith and Taylor (2004), this classification does not include the verbal elements of packaging.

In order to explore the importance of proper package positioning, Rettie and Brewer (2000) distinguished two blocks of package elements: verbal (such as brand slogans) and visual elements (for example, colour, and pictures). Similarly, Butkeviciene *et al.* (2008), analysing the decision-making process of consumers, divided packaging into non-verbal elements and verbal elements. Elements like colour, form, size, images, graphics, materials and smell are considered as non-verbal, whereas product name, brand, producer/country, information, special offers, and instructions for use, are verbal elements. From a different angle, Ampuero and Vila (2006) divided packaging elements into two categories: (1) graphic components, including typography, colour, the images introduced and the graphic shapes used; and (2) the structural components, which include the package size, shape and the materials used to manufacture them.

The current thesis, in order to uncover the way that consumers judge a lookalike, divides packaging cues into visual and verbal parts. Specifically, visual elements include: colour, picture, size, shape, typeface, material, package technology and overall organisation, while price, product name, brand name, product information, and producer/country-of-origin are classified as the verbal elements. Visual packaging information may serve to attract consumers' attention and set expectations for the contents of the verbal elements, while the verbal elements serve as an "advance judger" for the visual elements of packaging (Alesandrini 1983; Houston *et al.* 1987).

2.3.2 How packaging similarity is processed

According to the cue utilisation theory, packaging cues consist of extrinsic and intrinsic cues (Jacoby *et al.* 1971). When evaluating SBs, for example the perceived

similarity between an SBL and the NB, consumers primarily lean on extrinsic cues (Richardson, Dick, and Jain 1994).

Packaging attributes have been introduced as key cues in studies in order to explore the determinants of similarity judgement. For instance, in an experiment conducted by Kapferer (1997, cited in Johnson *et al.* 2013), 45 participants were shown a sequence of pictures of leading brands and lookalike brands. The exposure sequence of 15 photographs began with a very blurred photograph and then with photographs that were progressively more in focus; consumers tend to identify products first by the cue of colour, then by shape, then by key images and finally by name. Similar kinds of experiments have shown similar results. In addition, the BBG report (2009), using a representative sample of 1,199 British grocery shoppers, found that the four most common packaging attributes in similarity judgement are colour, shape, size and overall design.

In interviews with brand owners reported in Johnson *et al.* (2013), when answering the question: “What characteristics do you think make one product a ‘lookalike’ of another?”, almost all the interviewees (i.e. the brand managers) commonly mentioned these four packaging attributes: colour, shape, size and graphics. More recently, Aribarg *et al.* (2014) tested the relative importance of three packaging attributes, namely label, shape and brand name, on perceived similarity in their pilot study. The outcome shows that label design is the most important driver, followed by package shape and brand name. Satomura *et al.* (2014) quantified consumer confusion caused by blatant similarity of packaging design by composing a method and metric to show that among the various visual elements of the packaging features, the theme colour that has been widely used in a product category seems to be less important when distinguishing lookalikes from target brands. Nevertheless, theme colour becomes important when detecting similarity for those leading brands that have a single unique colour (e.g. the red colour of Coca-Cola).

Why does lookalike packaging matter? According to Connolly and Davidson (1996), 73 per cent of purchase decisions are made at the point of sale. The reality is that too often consumers are overwhelmed with so many goods that they become used to

shopping habitually and ignore most of the goods placed on the shelves. The outward look of a product is the first cue that consumers focus on before they make any further purchase decision. Thus, packaging becomes a key cue for marketers trying to attract consumers' attention. In a sense, for consumers the package is the product, particularly for low involvement products (e.g. most FMCGs) where initial impressions formed during the initial contact can have long-lasting impact (Silayoi and Speece 2007, p1498). This is one of the benefits that owners of lookalikes try to obtain, and the way that lookalikes develop is to imitate the package design of those leading brands, which is inherently multi-dimensional, incorporating multiple package elements such as text, shape, graphic design, logo, size, colours, illustrations, material, construction, and texture (Underwood *et al.* 2001, p405).

Similarity is initially triggered by the common external attributes that two products share relative to their distinctive attributes (Johnson 1989; Medin *et al.* 1993; Tversky 1997). Consumers' perceptions of brands are encoded in their memory as a pattern of linkages between concept nodes, consisting of various physical attributes (Anderson 1993; Collins and Loftus 1975). For example, a consumer may memorise the brand "Coca-Cola" by connecting it with a red label, white lettering logo, and red lid, while they recognise the brand "Pepsi Cola" by linking it to a blue label, white lettering, a red-white-blue circled logo, and blue lid. Physical overlaps between the packaging of two products can cause a similarity connection and thus lead to a transfer of the knowledge consumers have stored in their minds (Fazio 1986). The SBLs, through presenting lookalike attributes to that of a well-developed NB, mean to be associated with the positive brand knowledge consumers have memorised, which then spills over as a positive image for the SBL.

Due to variance caused by contextual indicators in how the similar physical overlaps are mentally processed, perceived similarity varies among different consumers. Social cognition research highlights the role of the accessibility process of stored information, which can be assimilative and contrastive in nature (Stapel and Suls 2007). When assimilation occurs, a consumer tends to focus on the common features that an SBL carries to the targeted NB, whereas a contrastive path may lead the consumer to pay

more attention to those distinctive features that an SBL has compared to the NB. As a result, consumers following an assimilating evaluation pattern will perceive an SBL to be more similar than those consumers that activate a contrastive approach when viewing the same SBL.

Therefore, it is reasonable to conclude that the similarity perception is largely derived from the physical similarity of the packaging an SBL carries, but is influenced by various contextual aspects (e.g. shopping environment, consumer mood, *etc.*) that trigger a consumer to either follow an assimilative or a contrastive evaluation pattern.

2.4 Researches on lookalikes: consumer perspectives

Marketing and trademark infringement research have focused on the threats that high similarity lookalikes pose to NBs (Morrin and Jacoby 2000; Zaichkowsky 2006; Aribarg *et al.* 2014). The basic belief is that the more similar the lookalikes are to NBs, the stronger the likelihood of brand confusion, which in turn leads consumers to make a more positive evaluation of the lookalikes (Loken *et al.* 1986; Warlop and Alba 2004). Thus, imitation research has emphasised the examination of potential generalisation effects and consumer confusion caused by high similarity lookalikes (Foxman *et al.* 1990; Howard *et al.* 2000; Kapferer 1995; Miaoulis and d'Amato 1978; Simonson 1994), and these are typically the cases brought to court (Collins-Dodd and Zaichkowsky 1999; Mitchell and Kearney 2002). Later, researchers turned their interest to examining consumers' evaluations of lookalikes (d'Astous and Gargouri 2001; Miceli and Pieters 2010; van Horen and Pieters 2012a, 2012b; 2013). The studies covering these three aspects of lookalikes will be discussed in further detail in the following content of this section.

2.4.1 Generalisation effects

The concept 'stimulus generalisation' has been applied to certain kinds of discrimination processes in the research area of learning psychology (Miaoulis and D'Amato 1978). Generalisation refers to the process of activating previously learned behaviours when triggered by new situations that are similar to those first learned behaviours (Lefrancois 1972, p115). Imaging, for instance, that a person has learned

from exposure to Stimulus A will result in generating Response A. If this person still exhibits Response A when confronted with a similar Stimulus A', then it can be concluded that the power of Stimulus A to trigger Response A has been generalised to Stimulus A'.

In the marketplace where there is fierce competition, some degree of imitation becomes necessary to encourage consumer learning and to adapt to the categorical characteristics of brands and products within the same product categories. For example, consumers would more easily and quickly recognise a new brand of chips flavoured cool tortilla if it were packaged in a blue pack, learning from their previous consumption experiences. In a field study, Miaoulis and D'Amatos (1978) interviewed consumers immediately after they purchased a tested lookalike brand (i.e. Dynamints or Mighty Mints), which was packaged to resemble to a widely penetrated NB (i.e. Tic Tac) that had not been presented simultaneously in the experimental outlets. As consumers in their study had not experienced the product, nor had they heard of the product, the consumers could only generate product expectations from the physical attributes of the product. The findings revealed that it is the product expectations "stimulated by the visual impact of the product" that make the subjects purchase the lookalike brand in the absence of the original brand. The visual similarity of the lookalike brand served as the primary cue for generalisation between the two brands.

To an extent, the lookalike per se is not necessarily bad for consumers. However, it may do harm to consumers when such package similarity causes them to misconnect the manufacturer source of the lookalike with its origins. Loken *et al.* (1986) found a positive correlation between physical similarities and perceived commonness of origin. Specifically, when the degree of similarity increased to some extent, consumers started to believe that the paired lookalikes (i.e. the origin NB and the SBL) shared the same source of origin. They therefore transferred the memorised positive experience regarding the origins to the lookalikes, generating the expectation that they also share comparable quality. The higher the degree of the physical similarity, the more consumers judge the paired lookalikes to share a common source of origin.

Without a doubt, such a generalisation effect would harm consumers' welfare if it were not actually the case. Moreover, besides the common origin perceptions caused by physical similarities such as colour and shape between products, the authors speculated that such physical similarities would exert marketing consequences by affecting consumers' evaluation of corresponding attributes, resulting in purchase behaviours.

In a follow-up study, Ward *et al.* (1986) provided empirical evidence for their speculation. After viewing and handling various brands of shampoo, student subjects were asked to score corresponding brand attributes and their specific attitudes towards the various brands involved. Findings showed that the subjects easily evaluated the products with similar packaging as being of similar quality and performance. Obviously, subjects were more likely to generalise from the similar extrinsic appearance of the brands to the intrinsic attributes.

Foxman *et al.* (1990) showed that consumers generalise attributes from one brand to another and that this may cause confusion in circumstances where packaging similarity presents. They specifically drew attention on the effects of three individual factors: product class and brand experience, product involvement, and cognitive style. To avoid sensitising student subjects, a two-stage experiment was conducted. In the first stage, only information reflecting field dependence/independence, student attitudes towards advertising, and demographic information, were collected. Four weeks later, information indicating their brand confusion, brand familiarity and usage, product class experience, and product involvement in two product categories, i.e. decongestants and ramen oriental noodle soup, were collected from the same subjects.

The results of Foxman *et al.* (1990) revealed that the extent to which subjects generalise from the original brand's attribute to the lookalike brands, and the extent of consumer confusion, vary as the addressed variables change. In accordance with predictions, better memory of the original brand was observed among consumers in the 'not confused' group, compared to their counterparts in the 'confused' group. The latter group showed less certainty of their judgement. Compared with the not confused group, the confused consumers were generally less experienced on the

product tested and had less involvement with the product class. Moreover, a lower familiarity degree was also found among consumers in the confused group than those in the not confused group.

Zaichkowsky and Simpson (1996) found a reversed generalisation effect from a lookalike brand to the original brand. Subjects were asked to evaluate the original brand after they had been provided with an experience of a lookalike brand. A negative experience caused a negative generalisation effect led to a decreased evaluation of the original brand. In contrast, a positive experience generated a positive generalisation that increased consumers' evaluation of the original brand. van Horen and Pieters (2013) revealed that under uncertain purchase situations, the strategy of applying similar packaging, given the generalisation effects, would work as uncertainty-reducing devices, thus helping consumers to form a positive evaluation of the lookalikes and encouraging the final purchase decision.

These findings reveal that the physical similarity of a brand can induce consumers to generalise attributes from one brand to another, and may result in consumer confusion. Thus, plenty of related studies have paid research attention to consumer confusion caused by the lookalike phenomenon, which will be discussed in the following sub-sections in detail.

2.4.2 Consumer confusion

Consumer confusion is a key issue that has been widely discussed in related research of the lookalike phenomenon. A few formal definitions of consumer confusion can be found in the extant consumer behaviour literature. Table 2.1 presents the definitions as well as quasi-definitions of consumer confusion found in existing marketing and consumer research literatures. Comparing these definitions, most of them commonly mention one aspect of confusion, i.e. the stimulus similarity; other aspects include information overload, ambiguity, and the conscious/unconscious nature of confusion.

Table 2. 1 Definitions of consumer confusion

Author(s)	Definition	Quasi-Definition	Stimulus similarity	Stimulus overload	Conscious	Non-conscious
Miaoulis and D'Amato (1978)	"...confusion is in effect stimulus generalisation."		+			+
Diamond (1981)	"...so resembles the mark in appearance, sound, or meaning that a prospective purchaser is likely to be confused or misled."		+			
Sproles and Kendall (1986)		"(consumers) perceive many brands and stores from which to choose and have difficulty making choices. Furthermore, they experience information of source of origin or identity by the consumer."	+			
Loken <i>et al.</i> (1986)		"...physical similarities between products may result in the misattribution of source of origin or identify by the consumer."	+			
Poiesz and Verhallen (1989)	"Brand confusion is a phenomenon that occurs at the individual level (...) and is predominantly non-conscious in nature."		+	+	+	

Foxman, Muehling, and Berger (1990)	“...consumers who are misled clearly are confused”	+		+
Foxman, Berger, and Cote (1992)	“(…) consists of one or more errors in inferential processing that lead a consumer to unknowingly form inaccurate beliefs about the attributes or performance of a less-known brand based on a more familiar brand’s attributes or performance.”	+		+
Kapferer (1995)	“(…) arises from an incorrect attribution of distinctive markings.”			+
Kohli and Thakor (1997)	“(…) confusion, when respondents may pick confusingly similar names, instead of the target names.”	+		+
Huffman and Kahn (1998)	“the huge number of potential options (...) may be confusing” and ‘The confusion a consumer experiences with a wide assortment of options, however, is due to the perceived complexity, not necessarily to the actual complexity or variety.’”			+

<p>Jacoby and Morrin (1998)</p>	<p>“If someone other than the owner were to use a trademark, there would be the possibility that such use (by the second or junior user) could cause consumers to be confused regarding who actually makes the product.”</p>	<p>+</p>	<p>+</p>
<p>Mitchell and Papavassiliou (1999)</p>	<p>“Confusion (...) is a state of mind which affects information processing and decision making. The consumer may therefore be aware or unaware of confusion.”</p>	<p>+</p>	<p>+</p>
<p>Turnbull, Leek, and Ying (2000)</p>	<p>“(...) consumer confusion is defined as consumer failure to develop a correct interpretation of various facets of a product/service, during the information processing procedure.”</p>		<p>+</p>
<p>Mitchell <i>et al.</i> (2005)</p>	<p>“a lack of understanding and potential alteration of a consumer’s choice or an incorrect brand evaluation caused by the perceived physical similarity of products or services’</p>	<p>+</p>	<p>+</p>

Walsh <i>et al.</i> (2007)	“consumers’ experienced difficulty when confronted with more product information and alternatives than they can process in order to familiarize themselves with, compare and comprehend alternatives.”	+	+
Casini <i>et al.</i> (2008)	“...an uncomfortable state of mind that primarily arises in the pre-purchase phase and which negatively affects consumers’ information processing and decision-making abilities and can lead to consumers making suboptimal choices.”		+
Kasper <i>et al.</i> (2010)	“... as the consumer’s cognitions, feelings and experiences of being overloaded by the market supply.”	+	+

Source: Adapted from Walsh *et al.* (2007)

The types of consumer confusion can therefore be categorised as similarity confusion, or overloading confusion in general. According to Diamond (1981), similarity confusion appears when a lookalike is so similar to an existing brand in respect of appearance, sound, or meaning, that it makes a prospective buyer feel confused or misled. Similarity conveyed through advertisement or other commercial channels may also trigger this type of confusion (Kent and Allen 1994; Poiesz and Verhallen 1989). The overloading confusion appears along with the brand proliferation. It happens when consumers have to deal with an increasing amount of “decision-relevant” information generated by a large number of brands in choice, on which they base their purchase decision (Simon 1962; Miller 1956). The more characteristics that need to be considered, the higher the “thinking cost”, and then the harder such choice will be (Shugan 1980). In this research, the similarity confusion is the focus.

A large number of related studies support the fact that, although many variables can significantly affect confusion, packaging similarity is perhaps the most important cause of consumer confusion (Foxman *et al.* 1992; Loken *et al.* 1986; Miaoulis and D’Amato 1978; Warlop and Alba 2004). Regarding the antecedents of similarity confusion, it is generally caused by the similarity of certain stimuli, such as advertisements, the store environment or product packaging per se. Consumers tend to rely on visual cues to identify and distinguish brands when presented with similar brands in the case of FMCGs purchases.

The influence of packaging similarity on consumer confusion, although results remain inconclusive, has been widely addressed in the area of consumer research. In general, it is believed that the higher the similarity degree of two products, the higher the possibility of consumer confusion. To test this relationship, efforts were made to identify all of the possible factors that affect consumer confusion, involving all the elements of the marketing mix. As product packaging and promotional messages are most often used by consumers to identify brands, these factors are more likely to cause consumer confusion (Foxman *et al.* 1992). From a broad perspective, the various aspects of a product involve its source, function, composition, packaging, physical properties, operational properties, even the economic factors, and

consumption effects (Werkman 1974). Technically, when the manufacturer of a lookalike brand adapts its product strategy to follow that of the NB manufacturer, usually the market leader within a category, from any of these aspects, it will result in increased consumer confusion (Foxman *et al.* 1992). In the FMCG sector, factors such as the product name, the physical properties and packaging are the most referred to tools in the consumer decision-making process. These factors become the most common strategic sources of consumer confusion.

Loken *et al.* (1986) tested whether there is a positive link between the physical similarities of products and consumer confusion of commonness of products' origin. They conducted a laboratory study testing 112 students' perception of the appearance and the common source of products with similar packaging, within a sufficiently large product sampling in 4 categories: 16 shampoos, 13 cold remedies, 13 deodorants, and 8 mouthwashes. Results revealed that physical similarities between SB and NB may confuse consumers in as much as they misattribute the two as being manufactured by the same company. Such a tendency was more likely to be observed on those SB-NB pairs with high similarity than on other less similar pairs in the same category. A possible explanation for this link is that when consumers lack proper knowledge on the source of the SB product, they would educate themselves on the basis of prior experience and guess that the SB shares a common origin with that of its similar NB counterparts.

Rafiq and Collins (1996) conducted an exploratory survey addressing consumer confusion on SBLs in the UK market. The results showed that a considerable number of consumers were moderately confused by the packaging of SBLs. Influences of various factors were considered to determine how confused consumers were between SBLs and NBs. Consumers from different stores showed significant differences in the extent to which they were confused by corresponding SBs. Among the various stores tested, Sainsbury's shoppers, specifically, were found to exhibit generally low levels of confusion, which suggests that the store may have been accused of confusing consumer with SBLs more than it actually would be. Besides, as the product category, consumers' shopping frequency, and some demographic characteristics vary, the

possibility of consumer confusion alters accordingly.

As a consequence, consumers are likely to delay or abandon making such a decision when they are aware of the possibility of making a wrong purchase. They would take more time to compare the alternatives, to ensure that the two or more alternatives are actually identical (Jacoby and Morrin 1998; Mitchell and Papavassiliou 1999; Walsh *et al.* 2009), otherwise they may abandon a purchase altogether. This is referred to as a ‘no-choice option’ to avoid difficult trade-offs (Dhar 1997, Luce 1998; Walsh *et al.* 2015). Consumers’ inability to distinguish between stimuli because of packaging similarity would result in dissatisfaction directly, considering that more time and effort are required to assess the authenticity of the alternatives, but that these are not necessarily very useful (Foxman *et al.* 1990). Also, consumers’ brand loyalty would be affected as they find it difficult to trust a manufacturer (Mitchell and Papavassiliou 1999, Lau and Lee 1999).

Specifically, Walsh *et al.* (2007) developed a conceptual model measuring consumers’ confusion proneness and consequences. In the study, the confusion proneness was measured as the general tolerance a consumer has for processing similarity, overload or ambiguity information. The confusion proneness was further distinguished into three types. The first type was the *similarity confusion proneness*. It was defined as “consumers’ propensity to think that different products in a product category are visually and functionally similar”. The second type was the *overload confusion proneness*, which measured “consumers’ difficulty when confronted with more product information and alternatives than they can process in order to get to know, to compare and to comprehend alternatives”. The third type was the “ambiguity confusion proneness. It represented “consumers’ tolerance for processing unclear, misleading, or ambiguous products, product-related information or advertisements”. The results showed that consumers’ decision postponement and brand loyalty are negatively affected by their similarity confusion proneness, and positively influenced by overload confusion proneness and ambiguity proneness.

In contrast with relevant studies conducted in the early stage of the appearance of SBLs, a growing tendency that has appeared recently in the market is that consumers

are actually purchasing SBLs consciously rather than being confused by them (d'Astous and Gargouri 2001; Dobson and Zhou 2014; Miceli and Pieters 2010; van Horen and Pieters 2012a; 2012b; Satomura *et al.* 2014). This is because as consumers are exposed more to the prevalent 'lookalike' products (in person or through other channels), they become more educated and less misled by such similarity; consumer confusion, therefore, is less likely to happen. More importantly, lookalike products, especially those produced by retailers (i.e. the SBLs), are being chosen by consumers deliberately. For instance, Johnson *et al.*, (2013), a study commissioned by the British Intellectual Property Office, showed that a substantial number of consumers thought that SBLs were good choices and that such purchases provided positive rewards.

To conclude, the literature reveals that packaging similarity, at its early stage, once served as a key source of consumer confusion, but became a less important cause of consumer confusion as consumers became more educated by the widespread nature of the lookalike phenomenon. Regardless of this inconsistency between the two main opinions that either support or oppose the link between packaging similarity and consumer confusion, they unanimously point to the result that such similarity has an effect on consumer purchase behaviour, more or less. In order to reveal how the introduction of lookalike packaging affects the SB *per se*, many researchers have focused on the question of how consumers evaluate the lookalikes, which will be reviewed in the coming sub-section.

2.4.3 Consumer evaluation of lookalikes

Instinctively, it is believed that the more similar the lookalikes are to the original brands, the more positive consumers would evaluate the former. However, recent research on consumer evaluation of lookalikes challenged this belief. The results show that high similarity does not necessarily link with a better evaluation of the lookalikes, but depends on various contextual factors, including the shopping scenario (e.g. familiar vs. uncertain) (van Horen and Pieters 2013); how the lookalikes are presented and exposed to the consumers (van Horen and Pieters 2012a, 2012b); the characteristics of the product category to which the lookalikes belong (d'Astous and Gargouri 2001); the imitation strategy that the SB manufacturers have applied to the

lookalikes; and the mindset that the consumers follow when evaluating the lookalikes (Miceli and Pieters 2010). All these results will be interpreted in detail in the following sub-section.

Zaichkowsky and Simpon (1996) is the first study that has focused specifically on consumer evaluation of brand imitation. They addressed this issue from the angle of how an experience with a brand imitator might affect consumers' evaluation of the original brand. In a two-day period, subjects' evaluation of Coca-Cola was recorded before and after an intervention with an imitator brand "Lora Cola". The evaluation information included involvement extent with the colas, purchase frequency of the specific product, brand awareness, and the price range that the subjects would like to pay for a large bottle of cola. The intervention experiences were controlled distinctively to be either positive or negative. In general, the research results indicated that the quality of an imitator brand has a critical effect on the evaluations of, and perhaps the consumption tendencies towards, the original brand. When the quality of the imitator is equal or close to the original, it would harm the original as the evaluations of the original is lower. On the contrary, when the quality is inferior, then a negative experience with the imitator may work as a comparison base, leading consumers to evaluate the original as more positive. However, the findings of this study may only be applicable to experience goods. In many cases, consumers cannot experience products before they actually purchase them and many of the products are not easily evaluated through consumption.

d'Astous and Gargouri (2001) examined how consumers' evaluation of brand imitation is affected by the goodness of the lookalike brand, the presence or absence of the original brand, the image of the store, and various personal characteristics, including involvement with the product category, product familiarity, price and brand sensitivity, and brand loyalty. Subjects were asked to answer a questionnaire after they had been exposed to high-quality photographic copies of both lookalike brands, either with or without the presence of the original brand. The stimuli used in this research considered both convenient product categories, including bread, shampoo, and luxury product categories, including Polo T-shirts and sunglasses.

d'Astous and Gargouri (2001) revealed that consumer evaluation of brand imitations does not depend on how good the imitation is, but on the image of the store, the presence or absence of the imitated brand, product category involvement, product familiarity, brand sensitivity, generalised brand loyalty and the category to which the lookalike product belongs. For a common, frequently purchased product, a lookalike brand would be better evaluated when the original brand is absent rather than when it is present. A better evaluation was also observed when the lookalike brand was available in a store with a good image than when it was displayed in a store with a poor image. Interestingly, it was found that the level of imitation did not affect consumer evaluations of lookalike brands. The authors explained that such results might be due to the fact that the differences between high and low similarity imitations were not large enough and that only limited product categories had been applied in the study. Therefore, they called for the replication of the findings using other products as well as products in physical forms rather than just photographs.

It is suggested by the cognitive psychology literature (e.g., Estes 2003) that how consumers perceive the similarity between lookalike brands and the original leading brands depends on not only the imitation strategies applied, but also critically on the mindset that consumers apply during the judgement process. Set on this theoretical basis, Miceli and Pieters (2010) proposed and examined a conceptual model testing the effects of the imitating strategy (attribute-based *vs.* theme-based) and consumers' mindset (featural focus *vs.* relational focus) on the perceived similarity between a leading brand and a copycat brand, revealing that the imitation strategy and the mindset of the consumer interact to determine perceived similarity.

In the experiments, followed Warlop and Alba (2004), the imitation strategy of the selected product packaging was manipulated to be attribute-based (i.e. product packaging with same physical features but named differently), or theme-based (i.e. different physical features and names but same theme). Participants were randomly assigned to one of the two mindset conditions that were manipulated following Estes (2003), and Wisniewski and Bassok (1999). The group of featural mindset condition were exposed to twelve taxonomically related picture sets (e.g. a red fender grouped

with two cars) while the group of relational mindset were exposed to twelve thematically related picture sets (e.g. a business man and a tie). Under such a setting, the student participants were then asked to evaluate the similarity of grouped lookalikes of chocolate cream and laundry softeners in two experiments.

The research of Miceli and Pieters (2010) showed that it is the combined effect of imitation strategy and consumer mindset that determines perceived similarity between a lookalike and an original brand. The findings of the two experiments reveal that, regardless of the consumer mindset, higher similarity perceptions were observed on attribute-based lookalikes than on the featural-based lookalikes. Nevertheless, and significantly, it also found that consumers under a relational mindset judge the theme-based lookalikes to more similar to an original brand than consumers under a featural mindset do. This study confirmed the fundamental importance of featural similarity on generating similarity perception, which is further moderated by consumers' mindset.

van Horen and Pieters (2012a) showed that the evaluation of lookalikes, in addition to the degree of brand similarity, is critically determined by consumers' evaluation mode. This conclusion was drawn from the results of three controlled studies, which systematically varied the degree of similarity between the lookalike and the imitated leader brand, as well as the evaluation mode of consumers. In the first two studies, student subjects were asked to evaluate created lookalike brands under comparative vs. non-comparative scenarios, triggered by the similarity in brand name and product packaging correspondingly in the two studies. Then, the third study generalised the findings of the first two studies to regular (non-student) consumers, and altered products and brands.

van Horen and Pieters (2012a) revealed that high-similarity lookalikes are not always liked more than lookalikes of low similarity. Instead, only when the evaluation takes place non-comparatively would the high similar lookalikes be liked as a result of positive associations with the original leader brand, which are transferred to the lookalikes. In contrast, moderately similar copycats are actually evaluated more positively than highly similar copycats when evaluation takes place comparatively,

such as when the leader brand is present rather than absent. Simply stated, it implies that consumer evaluation towards lookalikes critically depends on the combined effects of degree of similarity between lookalike and imitated leader brand (moderate vs. high) and the evaluation mode that the consumers activate in the evaluation process (comparative vs. non-comparative). The results of this research challenge the general belief as they show that even subtle imitation could take advantage of the equity invested in the imitated brand, without causing consumer confusion, and thus become more effective than blatant lookalikes with regard to leveraging the positive associations developed by the leading brand.

Van Horen and Pieters (2012b) drew research attention to the effect of imitation type on consumers' evaluation of lookalikes. The research demonstrated that there are two types of lookalikes that consumers can find in the market, namely theme-based lookalikes and feature-based lookalikes. The former type refers to lookalikes dependent on copying the underlying meaning or theme of leading brands to semantically take advantage of the inferred attributes of the leading brand. The latter type represents lookalikes directly imitating the distinctive packaging attributes of leader brands, thus presenting a literal similarity to the leader brand. In a series of three studies, results demonstrated that theme-based lookalikes using semantics have a more effective imitating strategy than feature-based lookalikes borrowing blatant attributes. The results challenged the prevailing thinking in trademark legislation that the lookalikes that blatantly copy the distinctive packaging features of the leading brand are most harmful, as they attract the most attention from the leader brands being imitated.

In addition, when consumers are under circumstances of uncertainty, the familiar feeling presented by the lookalike decreases the consumers' perceived risk, thus even blatant lookalikes would be appreciated. van Horen and Pieters (2013) showed that uncertainty that is prevalent when evaluating the quality of a product under unfamiliar scenarios acts as a critical modulator on imitation judgement and decision making. Three correlated experiments were conducted. The results show that a lookalike is liked less and selected less often than a differentiated product when consumers are

conscious of the imitation strategy being adopted and are certain about its quality. Nonetheless, on the contrary, when consumers are under uncertain circumstances, they are not sure of the product's quality, and then the same lookalike is more often favoured and selected than the differentiated one, regardless of the same levels of imitation-consciousness. Consequently, consumers seem to knowingly buy blatant lookalikes under uncertain purchasing conditions.

2.5 Competition between Store Brands and National Brands

Because of the great success of SBs in a variety of product categories over the last three decades, competition between SBs and NBs has attracted plenty of research interest. This section will review two streams of literature relating to the competition between retailers and manufacturers. The first stream of literature addresses the positioning strategy in introducing SBs, with the purpose of uncovering the reason why retailers choose to implement the sub-category of SBLs in their own product portfolio. Following this, the studies reviewed in the second stream of literature analyse the pricing effects of SBs, aiming to demonstrate possible marketing outcomes caused by the introduction of SBs, relating to the various competing relationships within the retailing supply channel.

2.5.1 Positioning of store brands

Many researchers have evaluated the advantages and disadvantages of different positioning strategies that an SB can choose between. Researchers seem to hold different opinions on whether to position an SB close to or far from the existing NBs within a given category. Divergences also exist on selecting which of the incumbent NBs (i.e. a stronger NB or a relatively weak, secondary NB) to target when adopting a close positioning strategy for the SBs. In general, the findings can be accumulated into two schools: one that support retailers positioning their SBs as close as possible to the NBs, and the other one that advises retailers to implement a distinguishing strategy for the introduced SBs.

Most of the literature on SB and NB competition sets product positioning as exogenous, and thus focuses primarily on price competition; only a number of studies

formally modelled the optimum positioning strategy for the SBs on retailers' goods. Four key reasons emerged from the findings for retailers to closely position their SBs to the NBs in respect of features and quality.

First, retailers can obtain higher margins by offering equivalent-quality SBs that are closely positioned to the competitive NB. As a result, retailers are induced to shift sales away from the NBs and towards their SB with comparable quality and features (Barsky *et al.* 2001; Sayman *et al.* 2002; Steiner 2004; 2009).

Raju *et al.* (1995) examined what makes a product category more profitable with an SB introduction. Their theoretical model first considered introducing an SB into a category with only two NBs, which was then generalised to a category with several NBs. It then presented an empirical study using combined data that covered 426 product categories in the aggregate US grocery stores. The two studies presented in this research yielded several findings. First of all, it is of great importance to distinguish between two types of price competition – price competition between NBs and SBs and price competition among NBs. When there is higher price competition among incumbent NBs then it would be less attractive to introduce an SB, or alternatively, the SB share would drop off. Nonetheless, where there is higher price competition between SBs and NBs, the retailer will be better off introducing a substitutable SB as it will help to increase the SB share. Their findings challenged the argument that it is not wise to introduce an SB into a category already crowded with a large number of NBs. On the contrary, they found that it is beneficial to introduce an SB into such a category as it will increase the category's profits, which is in accordance with the findings in Mills (1995).

Hoch and Banerji (1993) developed and examined a framework explaining the variation in SB market share across categories, identifying the determinants of SB success in the retailing industry in the US. They accounted for nine potential variables in the framework, namely the category gross margin, the category retail sales, the SB's quality, the quality variability of the SBs, the price advantages of SB relative to NB, the number of NB manufacturers in the category, the national advertising expenditure per manufacturer, the product proliferation, and the promotion intensity.

Primary and secondary data were sourced to generate a combined data reflecting all these nine variables for the empirical test. The results showed that a better performance of SBs was observed in large categories where retailers can achieve high margins. SBs also performed better when the competitive NB manufacturers invested less in national advertising. More importantly, a close positioning strategy in terms of quality was found to be much more important than the lower price strategy in leading the success of SBs. Consumers are more likely to choose an SB when it is of comparable perceived quality to that of the NB's rather than because it is a cheaper price. The price advantages of SBs seem to exert no significant effect on improving the SBs' share. It is hard for retailers to compete with SBs against NBs in categories that are crowded with many players and where manufacturers advertise heavily to enhance brand equity.

Indeed, it is evident in empirical studies that the introduction or increased presence of SBs enables the retailer to achieve higher profits by negotiating lower wholesale prices on NBs or better trade deals from brand suppliers. Sethuraman (1992) and Hoch and Banerji (1993) refuted the general belief that the primary attraction an SB has is its lower retail price compared to an NB. Sethuraman (1992) empirically demonstrated that the price discount of the SB, relative to the NB, does in fact adversely affect the category share of the SB, which is in accordance with the findings in Mills (1995). Putsis and Dhar (1996) show that the introduction of SBs can benefit the retailer by way of expanding consumers' expenditure in a product category rather than simply shifting sales and market share from the national brand. Narasimhan and Wilcox (1998) took the important first step in examining the significant role that SBs play in negotiations between retailers and brand manufacturers. They demonstrate that SBs not only directly bring retailers profits from the sale of the SB products, but also act as a tool to decrease the wholesale prices of NBs, thus indirectly abstracting more profits from channel distribution.

Second, implementing a close positioning strategy on SBs lessens the importance of NBs in contributing to channel profits, and therefore constrains the negotiation power of NB manufacturers vis-à-vis retailers.

Sayman *et al.* (2002) examined retailers' store brand positioning issue in a market composed of two NB manufacturers, each providing one NB commonly sold by a retailer. In general, the analysis revealed that, by targeting the leading NB, retailers can reduce the manufacturer's monopoly power thus gaining more bargaining power (see also Betancourt and Gautschi 1998; Morton and Zettelmeyer 2000). Such a tactic may also help to deal with the double marginalisation problem. Following this, the research presented three empirical studies. The first study, estimating observational data collected from supermarket chains in the US, uncovered that stronger NBs are more likely to be targeted by SBs. The second study, using store-level data from Nielsen to examine cross-price effects in 19 product categories, showed that intense competition is more likely to be observed between an SB and a leading NB rather than between an SB and a secondary NB in categories with high-quality SBs. Interestingly, the third study, a product perception study, revealed that although consumers can explicitly perceive the physical similarity when an SB targets an NB, such perception has little effects on their judgement of the similarity of the overall product quality.

Mills (1995) explored SB marketing as an effective instrument for a retailer to deal with the double-marginalisation problem along with the distribution of leading NBs. The study proposed a model consisting of one retailer owning an SB and one manufacturer producing an NB. The model examined how the retailer controls the position of the SB to compete with the NB. The outcome demonstrated that the presence of an SB dramatically improves the position of the retailer as a channel player vis-à-vis the NB manufacturer, which in turn increases the retailer's profit in product categories with strong NBs. Two reasons were identified as being responsible for the improved performance of the retailer: (i) shifting sales from the NB to the SB that is produced at a lower cost (by inducing consumer switching behaviour); and (ii) increasing the gross margins generated from sales of NBs (by negotiating lower wholesale prices on NBs). Although the retailer's gains from the SB is accompanied by a sacrifice from the NB manufacturer, the channel profit actually grows as the gains exceed the losses. Given the increased proportion of gains from SBs that contribute to the overall profit a retailer can achieve, it constrains the channel power that a NB manufacturer holds, thus

entitling the retailer to better bargaining power for better trade deals. The availability of SBs in a category also helps with generating greater consumer surplus, including both NB and SB consumers.

Morton and Zettelmeyer (2004) extended the work of Mills (1995) by further accounting for retailers' control over SB positioning; they claimed that it was a key reason why retailers valued SBs more (compared with other brands) in the manufacturer-retailer negotiation. Their model considered the scarcity of shelf space. The monopolistic retailer in their model can stock exactly two brands to serve the consumers. However, as the retailer initially carries two NBs – a leading NB with higher market share and a secondary NB with a lower market share, she needs to decide whether to introduce an SB and if so, which NB she would like to replace and how to position the SB introduced. The outcomes showed that: (i) if the retailer chose to introduce the SB, she would take off the NB with a lower market share and position the SB to imitate the leading NB; (ii) the retailer would introduce the SB if such a strategy would lower the added value of the leading NB to overall channel profits; and (iii) it is not a profitable strategy to have the secondary NB imitate the leading NB. Empirical results, deriving from estimations on cross-section data covering 82 product categories and five chains, confirm that retailers tend to sell an SB in categories where the NB would otherwise have a stronger negotiation power.

Raju *et al.* (1995) developed an analytical framework, exploring the determinants of increased category profits for the retailer along with the introduction of SBs. Their model indicated that SBs will bring higher overall category profit when there is less intensive price competition among the incumbent NBs in the category, but a higher price elasticity between the NBs and SBs. Their model also indicated that retailers seem to make less money on the NBs when introducing an SB in the category. Lal (1990) depicted a model that engaged two brand manufacturers that design strategies for price promotions in order to constrain the competitive force from an SB introduced by a retailer. The findings revealed that a strong SB is more likely to help the retailer to pass through the cost of a product promotion. Moreover, the SB can be used as a critical weapon by the retailer to induce NB manufacturers to concede better

trade deals and offer frequent promotions.

Narasimhan and Wilcox (1998) proposed a framework modelling the strategic significance of introducing an SB to obtain better trade deals from an NB manufacturer. They found that when consumer preferences towards NBs are not strong, so that brand buyers show a willingness to switch to an SB, introducing an SB could act as a competing force for a retailer and induce manufacturers to offer NBs at better wholesale prices. The empirical evidence did show that manufacturers adjust the wholesale prices for the retailer in the face of a potentially strong SB. Though they did not consider the competition at the retailer and manufacturer level, they argued that the effect would persist even when there is such competition among manufacturers. In addition, this research manifested that consumers' willingness to switch from an NB to an SBL greatly depends on the consumers' perceived risks associated with making a wrong purchase decision in a given category, and the ability of the retailer to develop an SB with comparable quality to that of the NB in the given category.

Third, it is an effective way to help develop customer loyalty by offering highly substitutable SBs, thus avoiding fierce retail competition.

Corstjens and Lal (2000) developed a game-theoretic model examining the role of an SB in developing store loyalty. The model depicted a market consisting of two segments of consumers, one of which is sensitive to product quality. It introduced the index "inertia" to characterise consumers' brand choice within low-involvement FMCGs. The theoretical analysis was followed by empirical supports using data from Europe and household-level canner panel data from the US and Canada. The results showed that an SB could be a useful strategic tool for retailers to establish store differentiation, to build consumer store loyalty, and to strengthen store profitability. Such effects are sustained, even when the SB does not have a cost advantage over its competing NB, and even if it is unable to be used to achieve lower wholesale prices for the NBs. However, this argument stands only for those good quality SBs, it does not apply for what the authors called the "cheap and nasty" SBs. This is because the

latter strategy would intensify rather than alleviate the price competition among stores. Consequently, it must make sure that the quality of the SB is above a threshold so that an increased fraction of consumers would perceive the SB as being of acceptable quality. Furthermore, a surprising result is that retailers would only benefit from the good quality SB if a significant fraction of consumers, with higher brand-switching inertia, purchase the NB. Such a finding demonstrates the complementary significances of SBs and NBs to the retailers. The former works by creating store differentiation and building customer loyalty, the latter raises prices and achieves higher store profitability.

Ailawadi *et al.* (2008) tested the relationship between a household's SB share at a store and its store loyalty. The proposed model considered major determinants of these two behaviours and included both the simultaneity and the non-linearity of the relationship between them. Estimation of the model was conducted on the basis of a combined panel dataset of Dutch households' consumption records in two retail chains in the Netherlands, covering both demographic and psychographic information. The two retail chains were distinct to each other in that the leading service chain had a well-differentiated SB with a high market share while the leading value chain offered a low-share SB. The authors found that the SB share has a significant effect on all of the three measures that indicate the household's store loyalty: share of wallet, share of items purchased, and share of shopping trips. Conversely, household's store loyalty also significantly affected the SB share. Furthermore, an inverted U-shaped effect of household's store loyalty on SB share was found in the service chain studied. When consumers spend more money in a specific store, their exposure, familiarity and willingness to buy the SB in the store increase. Then, as consumers become more loyal to a chain, they buy not only those SBs with acceptable quality in some categories, but also NBs in other categories where the quality of the SBs is not acceptable to them. Consequently, although consumers' store loyalty is high, because there are certain categories where they prefer purchasing only NBs, their contribution to the SB has a ceiling at some level. After this level, the SB share decreases as the consumer's store loyalty increases.

Fourth, the positive impression developed through the highly substitutable SBs in one product category can be generalised to other categories, thus encouraging more trial and improved acceptance of the whole range of SBs.

Sayman and Raju (2004) show evidence for such an “umbrella” effect between the number and sales of SB products in other product categories and the SB share in the target category. They empirically estimated demand models of the SB, leading NB, and also the weaker NB in a given category, using combined scanner data collected by Nielsen, covering 13 product categories and 122 retailers. The results showed that the number of SBs in other categories positively affects the SB share in the targeted category. However, such cross-category effects of SBs are achieved at the expense of the sales of the leading NB in the given category. Nonetheless, similar effects do not exist when considering the case of sales promotion activity. Thus, the findings generally showed that the higher sales of SBs in other categories increase the SB sales in the targeted category, but decrease the sales of the leading NB in the same category.

Similarly, Sudhir and Talukdar (2004) investigated whether households’ patronage of SBs results in increased patronage of the store. They showed that the level of benefits related to loyalty and differentiation that an SB can create for a retailer is decided by the breadth of the SB range in the store. The empirical estimation of this relationship was conducted on the basis of a unique and comprehensive dataset reflecting household expenditures in 44 product categories over one quarter, collected at a large retailer in the North-eastern US during the year 2003. A random sample of 2000 households was extracted from the database for the analysis. Three indexes were estimated to demonstrate SB patronage of a household, one reflecting the depth of SB share that a household consumed in a category (i.e. the aggregated category share of SBs that a household consumes), and two Herfindahl indexes reflecting the width of SB shares with one across sub-categories and the other within edible product categories. The results showed that revenues drop when the SB share increases. This may be due to the fact that SBs are generally lower priced than NBs, thus a household with higher SB shares will contribute fewer revenues to the retailer compared to households that purchase NBs. Then, the results also show that profits grow under all

sets of measures. A household that buys SBs across more categories is likely to spend more on any particular category, thus increasing the retailer's revenues and profits. In this regard, the presence of SBs contributes to better store differentiation, rather than resulting in increased price sensitivity.

Nevertheless, evidence can also be found preferring a more differentiated positioning strategy for the SB introduced, such as when the NBs in a market are already quite undifferentiated and NB manufacturers are competing head-to-head with each other (Soberman and Parker 2006; Heese 2010).

Choi and Coughlan (2006) investigated how retailers should position the quality and features of its SBs to deal with the competition in a market with two incumbent NBs. Using a demand function derived from consumer utility, the results showed that the optimum choice is determined by the combined effect of the nature of the competition between the NBs, and the quality of the SB per se. In a category with differentiated NBs, an SB with high quality will be better off positioned close to a stronger NB, while it is beneficial to position an SB with low quality close to a weaker NB. On the contrary, if the NBs in the category are quite homogeneous, it is wiser to differentiate the SB from both NBs.

From a monopolist retailer's point of view, Du *et al.* (2005) developed a game-theoretic model dealing with the horizontal positioning strategy of an SB and the pricing strategies for both the SB and NBs. The model was constrained to a product category within a market consisting of two competing NBs and one SB. There were two consumer segments featured with different tastes and varied willingness to pay for the products provided. Contrary to prior research, this research found that positioning an SB against the leading NB within a category is not always optimal. Instead, it is optimal to position the SB close to the weaker NB or in a "middle" place that can appeal to both consumer segments. To properly position the SB and the prices of each of the brands, retailers have to try their best to identify the most favourable demand region so as to re-pattern the intra-category brand competition accordingly. Increased retailer margins on the NB's would be yielded when the SB introduced is properly positioned. Retailers also benefit from the increased NB unit sales because of lower retail price, as well as

from the directly obtained SB sales.

2.5.2 Pricing effects of store brands

Although many of these researches have, empirically or theoretically, examined price competition between SBs and NBs, there have been few or no concrete conclusions as yet. Research results manifest three possible outcomes regarding the pricing strategies of NBs along with the thriving of SBs.

Firstly, a number of studies show support for the idea that the development of SBs will lower the price of the NBs. Cotterill and Putsis (2000) analysed the nature of competitive reaction with respect to pricing responses between NBs and SBs. They developed a duopoly model consisting of an NB manufacturer and a retailer that compete with each other in price within a specific geographic area. This model employs a flexible LA/AIDS demand function and a simultaneous equations system to estimate consumer price sensitivities and price strategies of both SB and NB products. Then this is followed by an empirical analysis using data for 143 food product categories and 59 geographic markets for 1991 and 1992. The results show that there is a strong and negative relationship between SB penetration and NB share and price, but that a positive relationship exists between SB penetrations and SB share and price. Simply stated, as more supermarkets in a local market carry SBs, the share and price of NBs decrease, but the share and price of SBs increase. In terms of the impact of market structure on the price reaction, the results show that an increased market share of NBs positively affects the NBs' and SBs' prices, although the former effect was found to be not significant. Similarly, increases in SB market share also elevate the prices of both SBs and NBs. Cross-price elasticities are found to be asymmetric. NB price exerts a major impact on SB sales, but SB price has little effect on NB sales.

Pauwels and Srinivasan (2004) studied how the entry of an SB impacts the performance of and response from various market players, including the retailers, the manufacturers, and the consumers. A multivariate time-series empirical analysis was performed based on the sales data of 4 product categories from 96 retailers in the US

during 1991 and 1996. In general, they found that the prices of NBs in three out of four categories decreased with the introduction of SBs. The results demonstrate that introducing an SB creates benefits for various players in the market, including the retailer, the consumers, and the premium NB manufactures. Nonetheless, the entry of an SB may do harm to those second-tier NB manufacturers. For the retailers, the introduced SB brings them high margins on the SB *per se* and high margins on the NBs sold as well. The increased margins in turn entitle retailers to stronger negotiation power vis-à-vis the NB manufacturers. Nonetheless, the SB introduced has quite a limited impact on category expansion and does not boost store traffic by very much. For consumers, they not only enjoy a wider product assortment but also lower average prices, including both NBs and SBs, for two out of four categories resulting from the intensified promotional activity. For manufacturers, the situation only benefits the premium NB manufacturers, not the secondary NB manufacturers. Specifically, the former experiences decreased long-term price sensitivity and higher revenues, while the latter faces increased long-term price sensitivity and lower revenues.

Putsis (1997) examined the pricing interaction between competing NBs and SBs in the food product categories, giving key attention to the impact of brand proliferation. IRI scanner data including 135 food product categories and 59 geographic markets during 1991 and 1992 were used for the empirical estimation. Three categories of effects were tested: (i) effects of price, promotional and competitive strategies; (ii) effects of brand proliferation and entry deterrence strategies; and (iii) effects of local market conditions. The findings demonstrate that the reaction functions of both NB and SB, although asymmetric, are positively sloped. SB penetration, which is measured by overall SB share, negatively affects the average price of NBs. Higher penetration of SBs leads to lower NB average prices. In addition, the findings also indicate a multi-dimensional impact of brand proliferation on market price reaction. First, the number of brands in a product category positively influences the ability of NB manufacturers to raise prices. Then, the structure of market share distribution critically determines the effectiveness of a brand proliferation strategy. More concentrated brand proliferation would result in lower NB prices. Therefore, the

number of incumbent brands and the actual distribution of brand shares work together to affect the brand proliferation strategies. Finally, only a small impact was found from local market conditions on the competitive interaction between NB and SB players.

Dobson and Charakborty (2015), by allowing the retailers and NB manufacturers to hold different degrees of control over the price setting of NBs, modelled competition between SBs and NBs under three slightly different scenarios. The three scenarios are: (i) the NB producer controls the price and sales of the NB; (ii) the retailer controls the price and sales of the NB; (iii) both parties hold a certain degree of control on the price and sales of the NB. The equilibrium outcomes support the fact that the retailers will be better off if they can develop an SB and position it as close as possible to the NB.

In contrast, there are also studies finding that NB prices go up as SBs sales increase. Putsis and Cotterill (1999) proposed a framework addressing the interaction effect between NBs and SBs. The empirical model developed simultaneously considered brand share, price and overall categorical expenditure across various categories, aiming to understand the complete nature of the interaction between SBs and NBs. It also incorporated the variances in the structure of the local geographic market, enabling the inclusion of the impact of the retailer environment on market behaviour. Estimation was performed using a sample covering 135 food product categories and 59 geographic markets in 1991 and 1992. The findings show a significant effect of concentration, at both the manufacture level and retailer level, on the prices of SBs and NBs. However, while increased concentration at the manufacturer level results in higher NB prices but lower SB prices, higher concentration at the retailer level is associated with higher prices of both NBs and SBs. Besides, increased investment in NB advertisement positively affects the price and share of the NBs, but negatively affects the price and share of the SBs. Such a finding is in accordance with previous related research.

Bontems *et al.* (1999) presented a model that tested the competition between NBs and SBs when products' marginal costs are determined by quality. They set a linear pricing relationship between the NB manufacturer and retailer in the model. The

game-theory model was estimated in three steps: (i) retailer chooses the SB's optimal quality, restrained with an upper bound; (ii) the NB manufacturer sets a linear wholesale price for the NB; (iii) the retailer introduces the SB with the quality chosen in the first step and sets the retail price for it. Equilibrium outcomes showed that the NB's wholesale price initially decreases along with the increase in SB quality, at low levels of low quality, but then climbs as the SB quality increases. Two opposite effects act together to form the final influence on the price of the NB product. First, when the quality of SB increases, it enters into more intensive price competition with the NB product, which leads to a lower wholesale price of the NB. Nonetheless, when the quality of SB increases, the marginal cost increases as well, thus moderating its competitiveness. Synthetically, as the quality of SB increases, it becomes a closer substitute for the NB product, and the wholesale price of the latter may increase. Moreover, introducing a SB also helps the retailer to alleviate the double marginalisation problem in the vertical structure within the channel.

Gabrielsen *et al.* (2001) consider how suppliers react to the competition from SBs and how this influences the pricing of NB products. Based on consumers' sensitivity towards product prices, they divided customers into two categories: 'brand loyals' who are less price sensitive and would only consider buying NBs, and 'switchers' who are ready to switch to SBs if there is a sufficiently large price differential between the SB and the NB. In this case, if the NB suppliers were serving all the customers at the very beginning, then the introduction of an SB may result in increasing the prices of the NB because the NB supplier may have to give up serving 'switchers' and turn to serving just the 'brand loyals' group.

The shrink in NB market size results in higher unit costs, which is passed on to the brand loyals in the form of an increased retail price of the NB (Gabrielsen and Sjørgard 2007). Different from prior similar studies, the model developed in Gabrielsen and Sjørgard (2007) allows NBs to offer exclusivity contracts to retailers, and sets the NBs and SBs as vertically differentiated to reflect the inherent feature of SBs. In addition, the model was estimated under three different situations: (i) no threat of SB introduction; (ii) threat of SB; and (iii) actual introduction of SB. The predicted results

show that the price of the NB is lower in the second case than in the first and third cases. Theoretically, the mere threat of SB introduction, without the need for actual introduction, may be effective enough to decrease the wholesale and retail prices of NBs. Then actual SB introduction may result in increased NB prices as the NB manufacturer no longer offers an exclusivity contract and thus may lose sales from the switching consumers. However, it is actually difficult to empirically compare the three situations given the reality that no data can be obtained for the first two situations.

A third possibility is that the price influence of the thriving of SBs is mixed. Parker and Kim (1997) examined the effect of increased advertising investment by NB manufacturers on retailers' pricing strategies. They divided the customers into SB followers and NB followers and showed that only if the marketing investment of the supplier increases will both types of product prices increase. Ward *et al.* (2002), using monthly price data, market share and advertising expenses covering 32 product categories in the US market, revealed four possible outcomes associated with an increase in the market share of private label (PL): (i) increased (or unchanged) NB prices, (ii) decreased (or unchanged) PL prices, (iii) decreased or unchanged categorical average prices, and (iv) decreased investment in advertising for NBs.

Bonfrer and Chintagunta (2004) show that the positioning can affect the price of SBs, but the influencing directions vary as the market composition differs. This study explored the link between store loyalty and brand loyalty, the relationship between store loyalty and SB choice behaviours, as well as the impact of the introduction of SBs on the prices of the existing brands in the category. A panel data including store level sales data and pricing information of 104 product categories in 5 stores during 104 weeks was used for empirical estimation. The results showed that store loyal customers are more likely to buy an SB than store switchers. But store loyal customers are not necessarily brand loyal. More importantly, the findings demonstrated that retailers do not systematically adjust retail prices when introducing an SB into a category. Retailers tend to increase the prices of existing NBs for half the categories, while dropping the prices of the NBs for the other half. Observing across the categories, retailers tend to change the prices of NBs with a larger market share

less often than the prices of NBs with a smaller share. Such differences may partially be determined by the market structure at the category level, i.e. relative market power and the number of competitors and brands in the category.

Choi and Fredj (2013) considered pricing strategies in a market consisting of one NB manufacturer and two retailers, with each of the two retailers carrying their own SB and the common NB products. This game-theoretic model accounts for two types of competition – one that is observed between the two SBs and the NB product at the vertically intra-store level, and another that exists between the two retailer rivals at the horizontal inter-store level. Besides, it considers both simultaneous (i.e. Bertrand-Nash) and sequential moves (i.e. Stackelberg) among players at each level of interaction. The equilibrium solutions provide several insights into the pricing of the SBs and NB involved. First of all, price leadership at the inter-store competing level results in higher prices for the SB and higher margins for the NB. Therefore, both retailers would gain under such a situation, with the leader between the two enjoying more of an advantage. Then, the highest retail prices of the NB and the SBs will be observed when the NB manufacturer acts as the price leader in the competition, including both vertical and horizontal levels. Synthetically, whether the SBs increase or decrease, the prices of both NBs and SBs are greatly determined by the relative strategic power that the retailers and the NB manufacturers hold. Each player can attain higher profits as it gains more strategic power. This also indicates that retailers should position their SBs close to the NB, which is compatible with Sayman *et al.* (2002). The reason, as they explained, is that offering relatively similar brands in the store may guarantee a high level of consumer demand.

In summary, the marketing theory shows three ways of increasing retailers' profit: compete with manufacturers to improve profit margins; compete with retailers to increase market share; and attract more consumers to expand market size (Richards *et al.* 2010). The introduction of SBLs, through lookalike packaging directly and closely targeted at the NB, provides retailers with more profit prominently from two aspects: higher profit margins and increased market size (Ailawadi and Harlam 2004).

2.6 Identified research questions

The literature shows that there exists a high potential for brand confusion with highly similar lookalikes in general (Foxman *et al.* 1990; Howard *et al.* 2000; Kapferer 1995; Miaoulis and d'Amato 1978; Simonson 1994), and through specific examples, such as the cases brought to court (Collins-Dodd and Zaichkowsky 1999; Mitchell and Kearney 2002). However, generalisation effects can work both ways between lookalikes and the original brands, compounding the overall confusion effects when the positive perception of the original brands can be generalised to the lookalikes (Foxman *et al.* 1990), while a negative perception of lookalikes may reflect back on the original brand (Zaichkowsky and Simpson 1996). Consumers either directly link the source of the lookalikes to their branded counterparts (Foxman 1990; 1992; Howard 2000; Kapferer 1995) or mistakenly consider them as the originals (Loken 1986; Burt 1999; Foxman 1990; Zaichkowsky 1996). In the former situation, the lookalike can “free-ride” on the brand equity that the NB manufacturer has established through long-term marketing endeavours involving large amounts of brand investment. In the latter scenario, mistaken purchases harm the NBs by directly squeezing their market share, or even worse, though indirectly undermining the NBs' brand image where SBLs provide consumers with an inferior consumption experience (Satomura *et al.* 2014).

The early literature showed that a higher degree of similarity for the lookalikes compared to the NBs led to a greater possibility of brand confusion (Howard *et al.* 2000; Kapferer 1995; Miaoulis and d'Amato 1978), which in turn led consumers to make a more positive evaluation of the lookalikes (Loken *et al.* 1986; Warlop and Alba 2004). Nonetheless, more recent studies have shown that there has been a growing tendency for consumers to purchase SBLs consciously and deliberately, rather than being confused by them, because of their perceived value for money (d'Astous and Gargouri 2001; Dobson and Zhou 2014; Miceli and Pieters 2010; van Horen and Pieters 2012a; 2012b). This increasing tendency to make deliberate SBL purchases seems to be because consumers, exposed ever more to the presence of 'lookalike' products (in person or through other channels), become more educated and less misled by such similarity, and so less confused by the real value on offer (Satomura *et al.* 2014).

In situations where consumers are not blind to differences between NBs and SBLs, how consumers would react to lookalike packaging with different degrees of similarity greatly depends on the evaluation context (d' Astous 2001; van Horen and Pieters 2012a; 2012b; 2013; Miceli and Pieters 2010; Satomura *et al.* 2014). For instance, d'Astous and Gargouri (2001) found that consumer evaluation of brand imitations does not simply depend on how good the imitation is, but also on the image of the store, the presence or absence of the imitated brand, the level of product category involvement, consumers' product familiarity, their brand sensitivity and brand loyalty, and also the category to which the lookalike product belongs. If properly managed, according to different shopping contexts, retailers can benefit from the lookalike packaging of their SBs based on leading NBs, whether with high, median or low packaging similarity (van Horen and Pieters 2012a; 2012b; 2013).

In summary, existing research provides three key insights: (i) there is a high risk of consumer confusion caused by the similarity of NBs and SBLs; (ii) there is a high risk of brand image and sales harm for NBs caused by the packaging similarity of the lookalikes, regardless of whether the lookalikes are of high, moderate, or low similarity; (iii) there exist various contextual factors influencing consumers' evaluation of lookalikes. However, it is unclear from the extant literature precisely why and how consumers perceive a *me-too* SB to be a lookalike to an imitated NB, thus a fundamental question arises here: What makes a lookalike a lookalike? What makes a store brand *lookalike* and imitated national brand *look alike*? Precisely to what extent do the different packaging features, both in isolation and in tandem, trigger in the consumer's mind a similarity between the two goods? The existing literature has provided some important insights but the research in this thesis is intended to provide a better overarching understanding of how consumers evaluate the degree of product similarity in the specific context of grocery products.

Specifically, the extant research has already provided a range of key insights that go some way to addressing this fundamental question. First, the similarity perception is initially derived from the physical similarity of an SBL's packaging attributes, such as colour, size, shape, and image, to that of the targeted NB (Kapferer 1997, cited in Johnson *et al.* 2013; Johnson *et al.* 2013; Satomura 2014). Then, according to the

evidence from research on consumer evaluation of lookalikes (d' Astous 2001; van Horen and Pieters 2012a; 2012b; 2013; Miceli and Pieters 2010; Satomura *et al.* 2014), how the physical similarity is processed further to generate the final similarity perception depends on the effects of various contextual characteristics. However, as yet, existing research has not provided an overall understanding that takes into account both the impact of packaging attributes and the effects of contextual factors on the similarity judgement process. This thesis seek to address this gap as its first key research contribution by identifying the relative importance of the factors considered on the similarity evaluation process. Correspondingly, the first central question and the sub-questions addressed are:

Q1: What makes a store brand lookalike and imitated national brand look alike?

Q1-1. Packaging attributes: What are the key packaging attributes that determine the perceived similarity? Which is the most important one among the various packaging attributes?

Q1-2. Customer characteristics: Is this packaging-perceived similarity relationship stronger for certain consumers?

Q1-3. Retailer characteristics: Is this packaging-similarity link enhanced by some retailer features?

Then, why do retailers introduce SBLs and draw themselves into direct competition with NBs? The existing literature presents four reasons supporting a close positioning strategy for an SB to target the NB. First, closely positioned SBs can provide the retailer with higher gross margins because by imitation they are cheaper to produce (in avoiding the initial R&D effort to create the product and its packaging design) and do not require the same level marketing (because they can free-ride on the marketing investments of the NB in generating category demand) (Barsky *et al.* 2001; Hoch and Banerji 1993). Second, closely positioned SBs can reduce the retailer's dependency on NBs for contributing to the retailer's overall profit by offering a credible alternative product in the category and so enhances the retailer's bargaining power, obliging NB suppliers to lower their wholesale prices (Mills 1995; Scott-Morten and

Zettelmeyer 2004). Third, close positioning results in improved performance of SBs in generating positive consumer perception about the retailer, and this becomes an importance lever for developing and enhancing consumers' store loyalty (Corstjens and Lal 2000). Fourth, improved perceptions of SBs from close NB positioning in one category provides a synergy effect in decreasing consumers' uncertainty about SBs in other categories, thus encouraging positive perception across multiple SB ranges (Sayman and Raju 2004). Taken collectively, these advantages can provide a powerful motivation for retailers to adopt close SB positioning with respect to the NB, and can offer the retailer raised profitability and improved sales performance. Not surprisingly then, SBLs have become increasingly prevalent despite the greater competitive tension this brings between retailers and NB producers (British Brand Group 2009; 2011; 2012; Johnson *et al.* 2013).

Most of the literature on NB-SBL competition looks at the consumer-demand-side aspects of SBLs and limited research has addressed the lookalike phenomenon from the supply side. From a theoretical perspective, Dobson and Chakraborty (2015), by allowing the retailers and NB manufacturers to hold different degrees of control over the price setting of NBs, model competition between SBs and NBs under different scenarios¹ The equilibrium outcomes in all of the scenarios considered support the contention that the retailers will be better off if they can develop an SB and position it as close as possible to the NB. However, there is currently a lack of empirical evidence that examines these findings from the existing theoretical literature, especially about ongoing competition between NBs and SBLs Thus, the second central question of this thesis aims to explore empirically how the lookalike packaging of an SBL and a targeted NB impacts their price competition, as well as affecting the specific pricing policies applied to each of them. In specific, following questions are addressed:

Q2: How does the packaging similarity of an SBL to the targeted NB affect the competition between the two?

Q2-1. Does the lookalike packaging enable the retailer to price the SBL higher?

¹ The three scenarios are: i) the NB producer controls the price and sales of the NB; ii) the retailer controls the price and sales of the NB; iii) both parties hold a certain degree of control over the price and sales of the NB.

Q2-2. How does the lookalike packaging of an SBL impact the pricing strategy of its targeted NB?

Q2-3. Is it the case that a higher degree of packaging similarity between the SBL and the targeted NB narrows the price gap between the two?

Q2-4. Do all retailers follow the same strategy for their respective SBLs? Is the relationship between price gap and packaging similarity stronger for some types of products relative to others?

Unlike NB manufacturers, whose business objective is to maximise profits from their own products, retailers selling both NBs and SBs are interested in profit maximisation across the entire category (Hoch and Lodish 1998; Sayman *et al.* 2002). The SBLs, through lookalike packaging, directly compete with the NBs. Close positioning may increase demand for SBs but at the expense of reducing the demand for NBs. Only when the profit obtained from applying such a close positioning strategy can offset possible losses in the targeted NB, would retailers introduce the SBLs in a specific category (Hoch and Banerji 1993). However, regardless of the strategic importance of the SBLs, little empirical evidence is available in the existing literature on specifically how close positioning affects relative NB and SBL prices. Thus, the second central question in this thesis is to contribute insights into how retailers price both the SBL and the NB in relation to each other.

From the consumers' perspective, close NB and SBL positioning might be welcomed if it intensifies competition between the two goods and results in lower relative prices. However, as Dobson and Chakraborty (2015) show in their model, this outcome is not likely when it is the retailer setting both NB and SBL prices to maximise their own profit. So, instead, the price of the NB, for example, could be inflated to give the SBL an appearance of offering good value for money, while in fact meaning that prices rise overall, particularly when this strategy allows for consumer segmentation (say with 'brand loyal' consumers paying a premium price for the NB, and 'brand switcher' consumers buying the cheaper SBL).

The existing empirical evidence has produced a set of mixed results with different

studies pointing to three different outcomes of the effect on NB prices of the presence of SBs: (i) the presence of SBs lowers the prices of the NBs (Cotterill and Putsis 2000; Pauwels and Srinivasan 2004); (ii) the presence of SBs raised the prices of NBs (Gabrielsen and Sjørgard 2007); (iii) the presence of SBs has a mixed price influence on the prices of NBs (Ward *et al.* 2002; Choi and Fredj 2013). What is less well understood is how the price competition between NBs and SBLs is affected by the prominent feature of the SBLs – the close packaging positioning of the SBLs to the NBs, which is tested in the second central question of this thesis to see how the degree of lookalikehood relates to the relative prices of the NB and SBL.

The nature and intensity of cross-store competition critically affects retailers' profitability and how profits are distributed amongst competing retailers. Extant studies on consumers' selection between an NB and an SB within a store setting point to three possible outcomes. First, brand-loyal consumers will choose only the NB when the price is at or under their reservation price; second, brand-switcher consumers will buy the SB when it meets the subjective expectation of 'value for money'; otherwise, third, where the price of the NB exceeds the reservation price and the value of the SB fails to reach expectations, consumers (either loyal or switchers) would rather buy nothing and will switch stores (Dobson and Chakraborty 2015). Except the third situation, retailers can gain considerable profits irrespectively of whether the consumers decide to buy the NB or the SB. Obviously, retailers only need to avoid the third situation. They can do so by either maintaining the price of the NB within an acceptable range (although constantly monitoring the price of NBs at rival retail stores) or by educating switchers about the good value attached to their own SBs. The key point is that the retailer has control over both the SBL and NB retail prices, so can juggle these to encourage its shoppers to self-select based on their individual brand preferences and willingness-to-pay thresholds

Though the typical three-tiered offering of SBs (with budget, standard, and premium SBs hierarchically positioned in a "good, better, best" sequence) each have their own strategic roles in supporting the development of SBs and the market expansion of the retailers, the standard SB is still the most important tier amongst the three (Spary

2014; ter Braak *et al.* 2013). As revealed by confidential data used in ter Braak *et al.* (2013), retailers in their study offered standard SBs in 205 of the 211 product categories studied, while they provided economy SBs in 42 of the categories and supplied premium SBs in only 10 categories. Comparing the profit margins, standard SBs provided the retailers with an average margin of 34.49%, while the margin from economy and premium SBs were 21.55%, and 28.30%, respectively.

The wide proliferation of SBLs and the high profit margins from this “standard SB” category mean that the competition of SBLs is a key issue for NB manufacturers, retailers, and consumers. Previously, the main focus of research has been on the competing tension between NB manufacturers and retailers caused by SBLs, which is in a within-store context, but as yet little attention has been paid to the competing patterns of SBLs across competing stores. The limited available empirical evidence points to retailers actually competing more on the prices of SBLs with their SBL counterparts from rival retailers rather than with NB prices (Chakraborty *et al.* 2009). This provides an interesting insight because it suggests that there is greater retailer rivalry over similar products (competing SBs) than over identical products (given an NB that is the same product across all retailers stocking that product), but highlights the competitive significance of SBs. Nevertheless, what is not revealed in that study is whether the close matching of prices has anything to do with how close each retailer positions the standard SB to look like an imitated NB. Therefore, as the third central question in this thesis, the analysis examines cross-store competition to see whether the degree of packaging similarity of SBLs towards an imitated NB influences the relative prices of competing SBs, where we might expect more closely positioned competing SBs to have more similar prices compared to more differentiated and distinctively positioned SBs. The central question and the extended sub-questions are:

Q3: How do retailers compete against each other on the SBLs, more specifically, on the prices?

Q3-1: Does the packaging similarity of a retailer’s SBL compared to the (commonly targeted) NB affect its pricing strategy?

Q3-2: Do specific marketing indicators affect the pricing strategy for SBLs?

Q3-3: What is the pattern of SBLs' price competition among retailers?

Specifically, we are interested in investigating the third sub-question from three perspectives: (i) how does the packaging similarity of SBLs influence the corresponding price competition among retailers? (ii) in which product categories do retailers compete closely against each other involving SBLs? and (iii) against whom do retailers tend to compete closely?

Correspondingly, the conceptual framework, which is developed on the basis of the theories discussed and the research questions identified, is presented in Figure 2.1. All components in the conceptual framework will be discussed in Chapter 3.

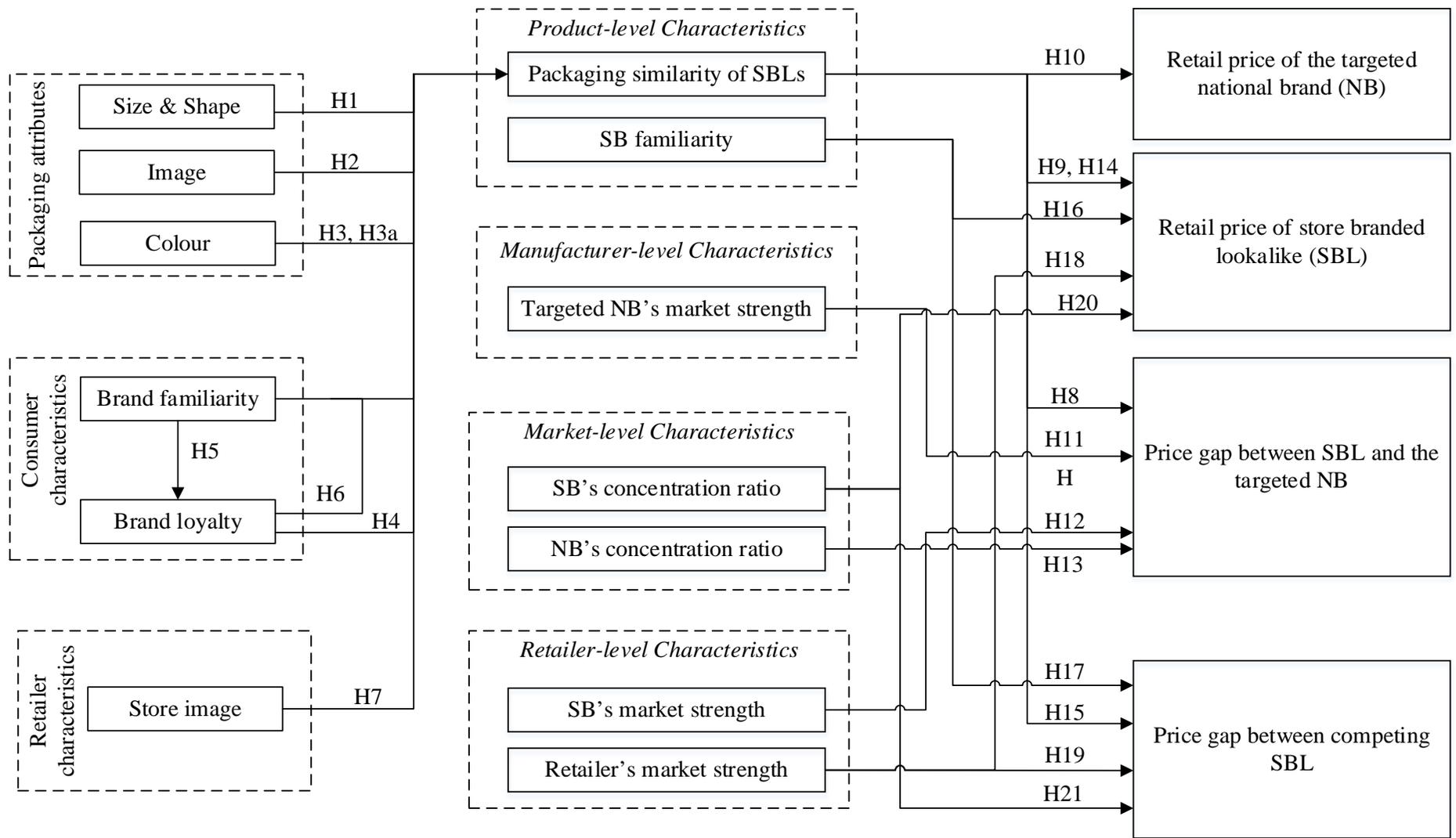


Figure 2. 1 Conceptual framework

Chapter 3 Research Hypotheses

3.1 Introduction

Based on the gaps identified within the existing literature, this chapter develops hypotheses. The rest of the content is divided into four main sections. Section 3.2 presents the hypotheses in terms of the similarity perception process when consumers face SBLs. The hypotheses are developed to answer the first central question of this thesis, i.e. “*What makes a store brand lookalike and imitated national brand look alike?*” In Section 3.3, the hypotheses regarding pricing impact of packaging similarity of SBLs to the targeted NB on the pricing strategies of the two within a store competition scenario are developed. Principally, the hypotheses in this section deal with the second central question “*How does the packaging similarity of an SBL to the targeted NB affect the competition between the two?*” Section 3.4 proposes hypotheses reflecting effects of packaging similarity of rival SBLs to common targeted NBs on the pricing competition between the rival SBLs in a cross-store competition context. Specifically, the central questions linked to this section is: “*How do retailers compete against each other on the SBLs, more specifically, on the prices?*” Finally, Section 3.5 summarises the chapter.

3.2 Hypotheses on consumer's similarity perception towards store branded lookalike

FMCGs are usually considered to be low involvement purchasing in the sense that the consumer undertakes little effort when searching for information about brands and evaluating competing products. As these low-risk level products are usually inexpensive and of small importance for the consumers, they do not search for comprehensive information or evaluate features properly, and easily make decisions about the purchase. The packaging of such product categories becomes more significant than those at a high involvement level where more effort to evaluate products takes place before purchasing. In the low involvement purchase process, the visual package cues become key prompts that enable consumers to evaluate the product quickly and easily (Silayoi and Speece 2007). Then, in the case of SBLs, how consumers sift through the physical packaging information is further affected by various characteristics of the consumers, as well as retailer characteristics.

3.2.1 Packaging elements

Four attributes from the visual part were identified as being most critical in similarity judgement: size, shape, colour, and image. In this research, the size and shape attributes were classed as one dimension, as in a real shopping environment, when the size of package changes, its shape would change correspondingly.

(i) Size and shape

Packages come in all shapes and sizes, complicating the ability of consumers to make accurate judgements about the amount of products in a package. Consumers can easily overcome the challenge of visually assessing volumes contained within a variety of shapes because most product labels provide amount information. When a consumer wishes to compare product volumes, an obvious solution is simply to read the label and compare standard units (e.g. compare fluid ounces). However, previous research has documented that shoppers often do not spend the seemingly minimal effort to read the product label and price information (Cole and Balasubramanian

1993; Dickson and Sawyer 1990).

Research shows that at the point of purchase, package size, shape, and elongation affect consumer assessment and judgement. Silayoi and Speece (2004) find that size and shape are highly related to usability, with consumers appearing to use these elements as simplifying visual heuristics to make volume judgements. Consumers perceive more elongated packages to be larger, even if there is no difference in size with the less elongated packages, and even when they frequently purchase these packages and have experience using them (Silayoi and Speece 2007). This implies that disconfirmation of package size after consumption may not lead consumers to revise their volume judgements in the long term, especially if the discrepancy is not very large (Raghubir and Krishna 1999). In the absence of their familiar brands, bigger packages of very low involvement items such as commodity food products tend to be chosen (Silayoi and Speece 2004). In addition, this could predict that when product quality is hard to determine, the packaging size effect is stronger. Thus, elongating the shape, within acceptable bounds, should result in consumers thinking that the package contains a greater volume of a product than same-sized packages that are less elongated (Folkes and Matta 2004).

Although consumers might have a size preference for packaged products, they commonly and systematically err in their size estimations (Hundleby *et al.* 1992). This suggests that it is the appearance of size and not actual size (Teghtsoonian 1965) that affects purchase intention (Yang and Raghubir 2005) and consumption (Raghubir and Krishna 1999; Wansink 1996; 2004; Wansink and van Ittersum 2003). The existing research provides us with some information regarding how some particular visual features of containers may affect size appearance, though not all. Those visual features studied include colour (Payne 1964) and its components: hue (Sato 1955; Tedford *et al.* 1977; Wallis 1935), value (Gundlach and Macoubrey 1931; Warden and Flynn 1926), and luminance (Yeh *et al.* 1995). Importantly, aspects of container shapes include height (Raghubir and Krishna, 1999; Wansink 1996), elongation (Frayman and Dawson 1981; Drider *et al.* 2001), and complexity (Fisher and Foster 1968; Martinez and Dawson 1973; Bingham 1993; Folkes and Matta 2004).

Of the aforementioned research that examines the effects of shape on size appearance, only Folkes and Matta (2004), Raghubir and Krishna (1999), and Wansink (1996; 2004) examined package containers. Raghubir and Krishna (1999) demonstrated the effects of overall height in cylindrical packages of various proportions (taller cylinders appear larger), and Folkes and Matta (2004) demonstrated the effects of overall shape among bottles exhibiting various degrees of taper (more severely tapering bottles appear larger). Wansink (1996; 2004) and Wansink and van Ittersum (2003) concentrated their studies on the effects of appearance on consumption. In real shopping environments, especially when consumers are used to judging products from a distance, detailed brand correlation information, and limited cues such as colour, size and shape become significant cues in attracting consumers' attention and assisting consumers' evaluation task (see Figure 3.1). Thus, this study posits:

H1: The similarity of size & shape has a positive effect on perceived similarity.



Figure 3. 1 Examples of SBLs that manipulating through size & shape

Notes: Parozone is the leading brand; the others are lookalikes from TESCO, Sainsbury's and Waitrose

(ii) *Image*

The second packaging feature that contributes to the perceived similarity is product image. A vivid product image may serve as a diagnostic piece of visual information in

some product purchase situations (Underwood 1998). For consumers wishing to save money, an image may validate the quality of a less expensive SB when compared to an NB. In categories where product knowledge is low, the product image may again prove to be highly diagnostic. This may be especially true if little variance exists in price and perceived quality among brands. The image becomes an information input that consumers can use to compare and differentiate brands. The relative accessibility and diagnosticity of product image affect the consumers' experience with the product, and their ability to evaluate intrinsic product attributes (Zeithaml 1988). In their study of visual attention during brand choice, Pieters and Warlop (1999) noted that time-pressured consumers tended to filter the textual information (ingredient information on packages) more, preferring the less cognitively-taxing pictorial information.

Similarly, the availability-valence hypothesis (Kisielius and Stemthal 1986) points to vivid information (e.g. product images) increasing cognitive elaboration, which improves the availability of attitudinal judgements. For those products whose benefits can be favourably conveyed by an image, a well-produced product image is likely to evoke memorable and positive associations with the product. An additional advantage of pictorial information may be its ability to elicit imagery processing, which MacInnis and Price (1987) define as the representation of sensory information in working memory. Thus a consumer viewing a product image on a package is more likely to spontaneously imagine aspects of how a product looks, tastes, feels, smells, or sounds, compared to an imageless package. The imagining of the individual brand leads to fewer brands being evaluated, improving the brand's likelihood of purchase (MacInnis and Price 1987).

Images on packages may also be able to enhance incidental learning (MacInnis and Price 1987). Research has demonstrated that people learn more quickly and effectively when information is presented in images rather than words (Alesandrini 1982; Mandler and Johnson 1976). Pictorial content represents concrete information that tends to be more influential in the decision-making process than more abstract verbal information (Alesandrini and Sheikh 1983; Nisbett *et al.* 1976). Regarding the

style of visual information, Alesandrini and Sheikh (1983) suggest that viewers prefer “realistic” images to more abstract images. Homer and Gauntt (1992) find that imagery processing enhanced the positive impact of images. As the modern marketplace often presents the consumer with an overwhelming array of marketing stimuli, one important role of images on packages is to attract attention and make the consumer consider purchasing the brand; such a situation is especially true if the brand is a less familiar NB or SB (Underwood 2001). More importantly, the percentage of the image covering on a product label also suggests the importance of this attribute. In the cases of lookalikes, by introducing similar images to the leading brands (see Figure 3.2), an obvious intention is to catch consumers’ attention, hoping to establish a link with those leading brands. Accordingly, this study posits:

H2: The similarity of the image has a positive effect on perceived similarity.



Figure 3. 2 Examples of SBLs that manipulating through image

Notes: Chicago Town is the leading brand; the other two are lookalikes from ASDA and TESCO

(iii) Colour

Colour influences consumers both physiologically and behaviourally. Different colours may result in different psychological responses (Deng and Kahn 2009; Van Hurley 2007; Klink 2003; Bone and France 2001). For example, the colour red generally appears in warning signs (Griffith and Leonard 1997), black frequently stands for mourning, whereas blue and pink are applied in denoting the sex of infants (Griffith and Leonard 1997). These meanings also change according to different culture backgrounds (Grimes and Doole 1998; Grossman and Wisenblit 1999; Singh 2006).

In a shopping environment, colours not only indicate product categorisation (e.g. a yogurt package can be red [strawberry], yellow [lemon], green [apple], or blue [blueberry]), but they also offer consumers with information with which they judge product quality or price within one category (Garber and Hyatt 2003). A study by Fuhrman (2003) indicates that consumers perceived a metallic gold box of chocolates wrapped with a ribbon to be expensive and of high quality. However, the use of yellow-green colours on food packaging is discouraged, as consumers may associate it with spoiled food (Russell 1990). Package preference can partly be explained by the effective response to the package colour (Ou *et al.* 2004). Taft (1996) suggests that there exists a correspondence between the preference of a colour and a product with the same colour. The mere use of colour can influence consumer evaluation towards products, which further affects purchase intention (Deng and Kahn 2009). Van Hurley (2007) found that compared to yellow, orange, green, and purples packages, blue and red packages were more likely to be purchased.

To influence the consumer at the point of purchase, attracting consumers' attention is critical. Previous research on packaging indicates that shape (Bloch 1995; Schoormans and Robben 1997), images (Underwood *et al.* 2001), and colours attract consumers' attention (Grimes and Doole 1998; Gorn *et al.* 1997; Bellizza and Hite 1992). The attention-grabbing device of colour, in particular, is generally stressed as the most essential visual cue and the first package cue noticed by consumers (Danger 1987). It also can maintain the consumer's attention (Schoormans and Robben 1997). Existing studies support the idea that package colour attracts attention, especially when consumers seek variety in their brand choices (Garber *et al.* 2000; Schoormans and Robben 1997). In particular, bright, novel, and warm colours are emphasised (Garber *et al.* 2000; Schoormans and Robben 1997), and attention appears to increase with the degree of colour deviation from the standard colour used in the category (Schoormans and Robben 1997).

Colour is also a powerful cue in identifying a brand (Tom *et al.* 1987; Grimes and Doole 1998). Consumers use colours in the packaging for identification of brands (Garber *et al.* 2000). Whether it is Heineken's distinct green label, Coca-Cola's red,

Shell's yellow, or Cadbury's purple, all have different colour values to different consumers. The high importance placed on colour is an acknowledgement of manufacturers' understanding that colour has strong emotional loading, able to prompt a swifter response to packaging than either the written word or imagery (Tutssel 2001). Lookalikes can take advantage of the great influence of colour on consumers' brand perception, especially in the scenario when consumers are standing from a distance (which matches real shopping situations) to compare all the products on the shelf. Then, many packaging elements can be blurred and only limited elements attract their attention, one of these elements being colour. Thus, it is not surprising or rare that even though all the other packaging elements are distinctively designed, an SBL can still be perceived to be a lookalike of the leading brand, just by manipulating the colour theme of the package (see Figure 3.3). Accordingly, this study posits:

H3: The similarity of colour has a positive effect on perceived similarity.

H3a: The similarity of colour has the most significant effect on perceived similarity compare to size and shape, and image.



Figure 3. 3 Examples of SBLs that manipulating through theme colours

Notes: Kellogg's is the leading brand; the other two in each row are lookalikes from TESCO, ASDA and Sainsbury's correspondingly

3.2.2 Information accessibility theory

SBLs, through manipulating packaging attributes similar to the leading NBs, generate

similar package looks objectively. But such packaging attributes will be assessed differently to achieve the final perceived similarity. According to the information accessibility theory, the effect of lookalike packaging attributes on perceived similarity can be assimilative or contrastive. When the perceived information leads the interpretation of the targets, establishing a positive connection with the information stored, then consumers tend to follow an assimilation pattern (Stapel *et al.* 1998). On the contrary, when consumers process the perceived information as a comparative standard, this would result in shifting away from the information stored, and this is a contrastive path (Herr 1989; Stapel *et al.* 1998). Then, how the packaging attribute affects the perceived similarity of SBLs also depends on whether assimilation or contrast scenario occurs. In this research, we consider two streams of antecedents that determine this process: two consumer characteristics, and one environmental variable connected with retailers.

3.2.3 Consumer characteristics

(i) *Brand loyalty*

According to consumers' loyal attitude towards brands, they can be separated into two categories, namely "brand loyals" who only prefer and buy branded products, and "SB consumers" who do not consider brands but would choose SBs if they perceive SBs to be better value for money. We posit that consumer loyalty has a moderate effect on the perceived similarity. Generally, the higher the objective similarity that an SBL has to a leading NB, the higher the perceived similarity would be. However, those brand-loyal consumers might have more brand experience compared with SB consumers. More brand experience might enable them to have more brand knowledge in their memory, which further influences their cognitive style, so that when they face lookalikes, they are more prone to follow the contrastive pattern and thus are more likely to spot the difference between the SBLs and the NBs. On the contrary, SB consumers are less loyal to the NBs and are more likely to store positive prior-knowledge towards SBs, which could lead them to follow the assimilation process, and thus they might perceive a relatively high similarity compared with the 'brand-loyals' when faced with the same pairs. In this sense, the perceived similarity

between the SBL and its NB counterpart is negatively moderated by the consumer's brand loyalty. Hence, this study posits:

H4: Consumers' brand loyalty has a negative effect on perceived similarity.

(ii) *Brand familiarity*

In consumer research, familiarity has long been established as an important factor that influences consumers' purchase decisions (Bettman and Park 1980). Different to brand loyalty, which describes consumers' purchase attitude towards brands, brand familiarity is defined as the number of brand-related experiences, and product-related information, that a consumer has accumulated through direct or indirect experience, such as exposure to advertising, interacting with salespersons, communicating through word of mouth, trying samples or product consumption (Alba and Hutchinson 1987). It reflects the amount of information a consumer has stored in his/her memory regarding the product or brand, which assists his/her understanding of the specific target, and supports their judgement of what is important regarding their buying task (Baltas 1997). Evidence shows that familiarity is one of the most important determinants explaining differences in consumers' attitudes towards SBs and NBs (Mieres *et al.* 2006). When purchasing FMCGs, an inexpensive and frequent purchase, familiarity takes on an even more important role in the consumer choice and decision process. More specifically, as the familiarity with a brand increases, and as consumers' product knowledge increases at the same time, they tend to be more experienced with the brand and become more sensitive to distinguishing the different NBs, or comparing an NB with an SBL, reinforcing loyalty. However, on the contrary, when brand loyalty increases, the possibility that the consumer will choose an SB substitute when the NB is absent decreases, although this does not mean that this consumer necessarily is more familiar with the NB. How consumers use product knowledge may depend on their loyalty to the targeted brand. As brand loyalty increases, consumers follow a contrastive path to judge the SBL relative to the targeted NB. Those consumers with high familiarity will be more likely to spot the differences in the packaging attributes, and this results in lower perceived similarity. In contrast, for consumers who have relatively lower brand loyalty, the assimilating

pattern is more likely to be activated, and then the more familiar they are with the brands, the more likely they will find overlaps between the lookalike pair, thus the more similar they would think the SB is to the NB. Hence, this study posits:

H5: Consumers' brand familiarity has a positive effect on consumers' brand loyalty.

H6: Consumers' brand loyalty negatively moderates the effect of brand familiarity on perceived similarity.

3.2.4 Retailer characteristics - store image

Store image is defined as a multi-dimensional concept that involves different cues when consumers evaluate a retail store (cue utilisation theory, see Richardson *et al.* 1994). Research shows that store image has a positive effect on SB product perception, since SBs can be considered as an extension of the retailer as a brand. Brand extension research shows the notion that store associations and evaluations can be generalised to SBs (Collins-Dodd and Lindley 2003). Store image can serve as a highly relevant heuristic cue in evaluating SBs. If a consumer generates a positive store image, it is reasonable that this perception will be transferred to judge the SB, and the assimilation pattern will be activated. Consumers with a higher positive store image of the retailer will judge the SBL to be more similar than those consumers with a lower positive store image of the retailer. Therefore, this study posits:

H7: Store image has a positive effect on perceived similarity.

3.3 Hypotheses on price competition store branded lookalikes within stores

As one of the three-tiered SBs, the introduction and development of SBLs bring tight competition between manufacturers and retailers, which would theoretically lead to lower level prices for both the SBs and the NBs in the same category. However, this is not necessarily the case as the positioning of this stream of SB is rather important. This section discusses price competition between SBLs and the targeted NBs, and on basis establishes hypotheses. In particular, as the most prominent feature of this tier of SBs is their lookalike packaging compared to the NBs, this section aims to examine how the packaging similarity of the SBL impacts the pricing policies of both the SBL

and the targeted NB, as well as the price competition between paired SBLs and NBs. Specifically, the analysis is drawn on factors in three categories – product, brand manufacturer and market level characteristics.

3.3.1 Product characteristics

In the tight competition not only with other retailers but also with upper stream suppliers, various factors could affect the development of an SB. According to Anselmsson and Johansson (2007), the factors that affect the development of SBs can be divided into positive ones and negative ones.

A key positive factor lies in diversified customer needs, which leaves opportunities for the development of SBs. Nowadays, consumers are increasingly transforming from brand seekers into value seekers (Dhar and Hoch 1997; Chakraborty *et al.* 2009). They share the value that if the perceived quality of a product is acceptable, it does not matter if it is from a big brand name and the price does not need to be the highest. Another indispensable factor is the emergence of powerful retailers through consolidation and concentration at the expense of weaker ones (Steiner 2004). Such retailers have the business scope and competency to produce SB products with comparable quality at lower costs, and furthermore, sell them at competitive prices compared to those of the leading NBs. Leaning on the gatekeeper role, retailers successfully distract customers' attention and make them less brand loyal by various in-store switching strategies. Consumers' loyalty towards NBs decreases as they seek for changes in purchasing choices.

On the contrary, there are also negative factors that may inhibit the development of SBs, such as competition from the NB manufacturers who may have a better approach to marketing communications and are well-known to the customers. Another disadvantage regards the weakness of SBs in the innovation of products, which highly depends on the company's Research and Development capacity. Thus, to help the SBs win in the tight competition with NBs, the retailer needs to pay close attention to choosing the proper position for the products delivered under their name. SBLs are outstanding examples of retailers exemplifying the various positive factors and/or

restraining the negative aspects.

Consistent with cue utilisation theory, when facing uncertainties, consumers primarily rely on extrinsic cues, such as product packaging and prices, to evaluate the intrinsic product facilities such as product quality (van Horen and Pieters 2013). This is especially the truth in the fast-moving consumer goods (FMCGs) sector. In most of the circumstances and for most of the products, consumers may not be able to judge the quality inside the packs before purchase. Still, for many of the product categories it is not unusual that, even after consumption, the quality and consumption experience are not easy to quantify (e.g. some products in household cleansing categories). With the assistance of their lookalike packaging vis-à-vis the leading NB, SBLs quickly attract target consumers' attention within the initial key seconds that decide whether these items will be included in the consumers' purchase consideration. Then, the lookalike packaging, which easily induces consumers to imagine similar features to the NB inside, further reduces the consumers' uncertainty when judging the intrinsic quality, and finally it "encourages" these consumers to switch from the NB to the SBL, backed by a wide price differential.

For this pathway, extensive evidence is already available. Consumers perceive that SBs have a common origin with NB products (irrespective of packaging), and when packaging is similar there is an increased perception of common origin (Burt 1999; Foxman 1990; Zaichkowsky 1996). Additionally, consumer perceptions of SBs are generally good with at least a quarter (and possibly three-quarters) of consumers perceiving SBs to be as good as the NBs (Spary 2014).

Dobson and Charkraborty (2015) show that the retail price of SBs positively depends on their quality, as well as on the relative proportion of switchers. The closer the quality of the SBs is to that of the NBs, then the closer the retailer will set the price of the two. In the case of an SBL, it provides consumers with a signal of increased substitutability of the SBL with the corresponding NB as the degree of packaging similarity increases, thus enhancing consumers' quality perceptions of the SBLs accordingly. It is therefore reasonable to posit the following:

H8: The higher packaging similarity an SBL has to the targeted NB, the narrower the price gap between respective SBL and NB will be.

H9: The higher packaging similarity an SBL has to the targeted NB, the higher the retail price of this SBL will be.

On the other hand, the direct threat from high lookalike SBLs for competing NBs can enhance retailers' negotiation power when facing NB manufacturers. It forces the latter to concede to better supply conditions at lower wholesale prices (Mills 1995; Scott-Morton and Zettelmeyer 2004). As a result, the retailers are able to set the NBs at a lower price to attract more consumers to visit the store, thus expanding their market share (Richards *et al.* 2010). Hereby, this study posits:

H10: The higher packaging similarity an SBL has to the targeted NB, the lower the retail price of the targeted NB will be.

Put another way, the packaging similarity of an SBL to the targeted NB exerts a negative effect on the price of the NB and the price gap between this competing pair, but it generates a positive impact on the price of the SBL.

3.3.2 Manufacturer characteristics

Different to manufacturers of NBs, who only wish to maximise the profit from their own products, retailers selling both NBs and SBs are interested in category profit maximisation (Hoch and Lodish 1998; Sayman *e al* 2002). The application of a lookalike strategy in SBLs, through lookalike packaging to directly compete with the NBs, may increase demand for SBs but at the expense of downsizing demand for the targeted NBs. Only when the profit obtained from introducing such strategy in a given category can offset the possible loss of the NB targeted, would retailers introduce the SBL in a specific category (Hoch and Banerji 1993).

By targeting directly at a leading NB, retailers can reduce the monopoly power of leading manufacturers, so as to increase their own bargaining power (see Aggarwal and Cha 1998; Amrouche and Zaccour 2007; Betancourt and Gautschi 1998; Morton and Zettelmeyer 2004; Sayman *et al.* 2002). Sayman *et al.* (2002) addressed the SB's

positioning problem on the basis of a game-theoretic model engaging two incumbent NBs and one SB entrant. Their equilibrium solution reveals that compared with all other positioning strategies, targeting the leading NB yields most significant increase in category profit for retailers, especially in categories with an outstanding leading NB.

In addition, industrial organisation theory indicates that the margin distribution in a market is a function of the relative market power of the players involved. Then, in the case of the FMCGs industry, how the total channel profit is split between retailers and manufacturers, and further the margins they can earn, are determined by the relative market power of these two groups of players (e.g. Kadiyali *et al* 2000). Several key factors, such as concentration of NBs, spending on advertising, market share of SBs, and the corresponding penetration, are considered to have important influences on the relative market power distribution between these two players (Ailawadi and Harlam 2004; Abela and Farris 1999; Lal and Narasimhan 1996; Steiner 1993).

In categories where a NB has strong market strength, retailers should closely position the SBs to compete directly with this NB, thus increasing the substitutability of the SBs with the NB (e.g. packaging the SBs similar to the NB). In such circumstances, retailers would leave an even wider price gap between the two so as to attract more consumers switch to choosing the SBs, in a way constraining the profit that this NB can bring to the whole channel, thus supporting the market power shift towards the retailers (Sayman *et al.* 2002). Thus, we posit that there will be a positive relationship between the market strength of the targeted NB, reflected in higher market reach and higher sales turnover change, and the corresponding price gap between an SBL and the NB being targeted. Specifically, it is proposed that:

H11: The stronger the market strength of the targeted NB, the wider the price gap between the respective SBL and NB will be.

3.3.3 Market characteristics

In a vertical competition environment, the positioning of an SB can be conceptualised as the extent of its similarity to the NB (Sethuraman 2004). Sethuraman and

Jagmohan (2012) generalised four pathways that retailers apply when positioning their SBs close to NBs – two relating to product characteristics *per se*, and the other two store environment related. These pathways are: (i) intrinsically, reduce the product quality discrepancy between SBs and NBs; (ii) extrinsically, package SBs similar to NBs; (iii) through manipulating shelf arrangement, juxtapose SBs and their NB counterparts; (iv) deliberately induce consumers to compare these two categories through in-store advertising signs, e.g. “compare and save” or such alike slogans. The SBL, through lookalike packaging, extrinsically serves as a signal of comparable intrinsic feature to NB but with a lower price (Schmalensee 1978).

However, introducing SBLs might not always be positive, especially for those categories with high margins and wide customer base (Corstjens and Lab 2000). Sethuraman (2004) reveals that in less competitive categories where the NBs can expand market share through investments in non-price marketing activities such as advertising, or if there exist some un-served segments², SBs will be better off being positioned distinctly from NBs. In the opposite situation, when SBs possess a relatively stronger market power in a given category, their introduction will provide retailers with leverage over the manufacturers, such as threatening to delist the NBs from shelves when SBLs are introduced, thus achieving better supply conditions. Increasing market power also means that the retailers do not have to concede too much profit by selling the SBLs at lower prices, but the lower prices can in turn exert a stronger competing force on the manufacturers. In a similar vein, it is profitable for SBs to be positioned closely to NBs in mature categories which are less expandable and where the market power is highly concentrated (e.g. fizzy drinks such as *cola*, canned soups such as *tomato soup*). Therefore, it is predicted that there will be a negative relationship between the market strength of the SBs and the price gap regarding the SBLs and the targeted NBs in a given category, which can be interpreted as:

² For example, if all existing milk in the market is whole milk, then introducing semi-skimmed milk or skimmed milk can serve an “un-served segment” which consists of consumers who are on a diet or who have weight problems.

H12: The stronger the overall market strength of SBs, the narrower the price gap between the respective SBL and NB will be.

There will be a negative relationship between concentration of the NBs and the price gap regarding the SBLs and the targeted NBs in a given category, too:

H13: The more concentrated the market strength of the NBs, the narrower the price gap between the respective SBL and NB will be.

In summary, it is hypothesised that the price gap between an SBL and the targeted NB will be narrower for an SBL: (i) with higher similarity degree, (ii) in a category where the NBs are more concentrated, (iii) in a category where SBs have stronger overall market strength. However, the price gap will be wider for an SBL which targets a stronger NB.

3.4 Hypotheses on price competition store branded lookalikes across stores

Considering the demand side, to some extent, it is those SB demands that determine consumers' store choice. Before consumers can make any specific purchase decision, they have to decide first which retail store to patronise. Among the various criteria that influence consumers' decision on where to shop, distance and store image are considered as the two most important ones (Rhee and Bell 2002; Sirohi, McLaughlin, and Wittink 1998). Distance exerts a negative effect on consumers' tendency to visit a particular store, because as the distance increases one's visit cost to that store grows (Bell *et al.* 1998; Rhee and Bell 2002). In contrast, a better store image usually increases the possibility of visiting intention (Baker *et al.* 2002; Sirohi *et al.* 1998). Unlike the location (and thus the distance), which become fixed after the launch of a specific retail store, there is usually much to do to improve consumers' perception of the store image. In most circumstances, especially when consumers have long shopping lists, the store image becomes the key factor determining shopping venue. Nonetheless, because of inconsistent positioning across different store formats, consumers might form weak or uncertain perceptions of store image. The SB, which can be treated as an extension of the brand name of the retailer itself, can contribute to the store image. A positive experience with an SB or a strong SB programme can

form a generalisation effect to improve the store image (Jacoby and Mazursky 1984). In addition, a shopping list usually includes various items. Consumers tend to buy only NBs for some of them, but for others they would choose SB alternatives. NBs are commonly available in different retail stores, while SBs are exclusively sold in respective stores. From this perspective, SBs become the key distinction among retail stores.

The marketing strategies of SBs, especially those of the SBLs that are the most prominent examples of the standard SBs, exert a significant impact on the profit distribution among retailers. Although the primary purpose of introducing SBLs is draw direct competition against NB manufacturers within a store, retailers compete on the price of NBs and SBLs separately and independently across stores (Chakraborty *et al.* 2011). Alternatively, this can be explained through the fact that retailers compete on the prices of NBs with those of the same NBs sold in rival stores, while pricing SBLs to target their SBL counterparts in competing stores. This relationship is illustrated in Figure 3.4.

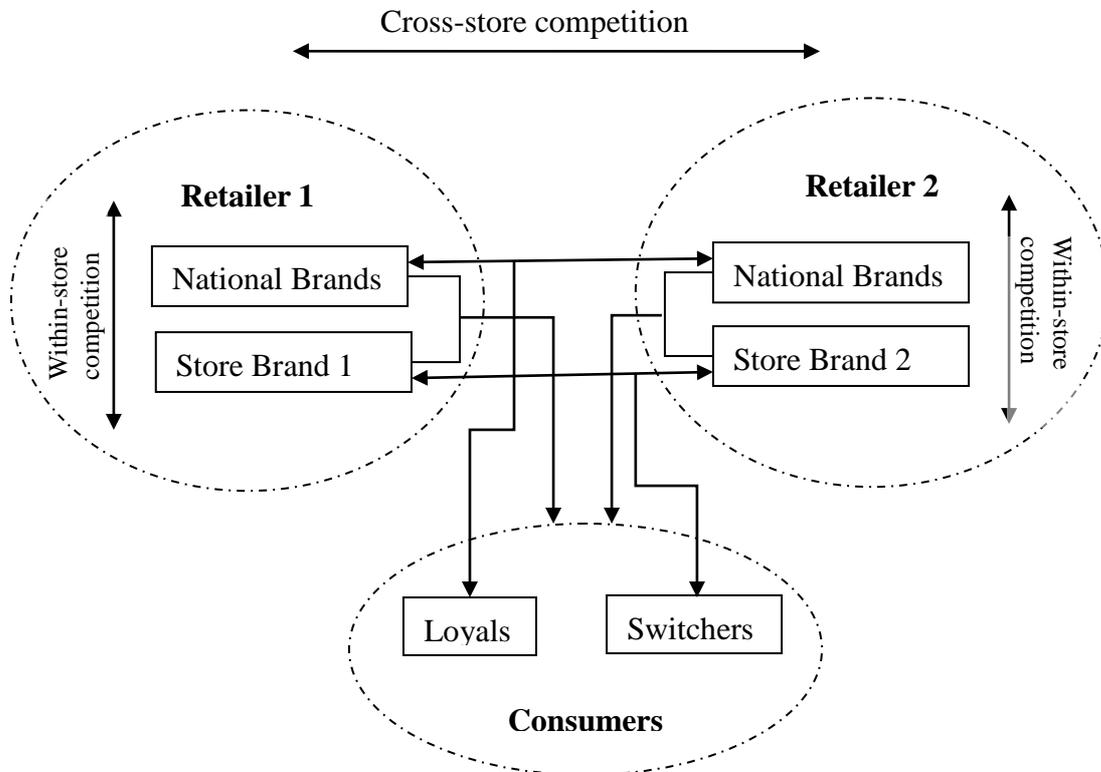


Figure 3. 4 Supply chain competition

Accordingly, this section addresses the pricing strategies for SBLs under the cross-store competition circumstance. Three categories of antecedents were identified that affect the pricing policy of competing SBLs.

3.4.1 Packaging similarity

This is a product-level characteristic. According to the cue utilisation theory, products can be conceptualised as an array of extrinsic cues and intrinsic cues that assist quality evaluation (Monroe and Dodds 1988; Teas and Agarwal 2000). Extrinsic cues are peripheral attributes, such as packaging, price and brand name, which do not belong to the physical product. Intrinsic cues refer to features directly reflecting the quality of the product, such as ingredients, taste, smell, and texture, which are hard to alter without changing the physical properties of the product.

In various circumstances, consumers may lack sufficient information to judge the intrinsic attributes, so they primarily lean on extrinsic cues to evaluate the quality and make purchase decisions (Allison and Uhl 1964; Richardson *et al.* 1994). Such situations include: (i) lack of experience with the product upon initial purchase; (ii) intrinsic evaluation is too time consuming, or consumers are just not interested in evaluating the intrinsic attributes; or (iii) the intrinsic attributes are too difficult to quantify for various products. All these situations are not uncommon in the FMCGs sector, especially when consumers are standing in front of the shelves overwhelmed by the number of options, and extrinsic cues (e.g. packaging and price) become the key determinants that assist consumers in evaluating the quality and making their final choices.

In the early stages of development, in accordance with the low positioning strategy, SBs were packaged in a way that looked inexpensive and lacked an attractive brand image. Richardson *et al.* (1994) find that consumers rely more on extrinsic cues to assess the quality of SBs, which to an extent explains the wide existence of an unfavourable perception towards SBs in early stages of SB development. The introduction of SBLs reversed this undesirable situation. An SBL makes full use of its packaging similarity to generalise consumers' favourable feelings for the NB and

transfer them to the SBL. The similar packaging not only attracts consumers' attention but also alleviates their uncertainty about the SBL. More importantly, it encourages consumers to expect a similar inherent quality, prompting the SBL to be included in the purchase consideration set, and finally being chosen with the assistance of the much lower price.

The higher the packaging similarity of an SBL is to an NB, the more it signals a comparable intrinsic quality and the more it will ease consumers' uncertainty, increasing their purchase intention. Using consumer survey data collected from 22,623 respondents covering 23 countries in Asia, Europe, and the Americas, and an average of 63 product categories per country, Steenkamp, van Heerde and Geyskens (2010) show the positive effect of packaging distinctiveness on quality gap perception. In their research, when the packaging of an SB becomes less distinct from that of its NB counterpart, consumers' quality perception of the former approaches that of the latter. Though consumers might differ in their individual willingness to trade off price against quality, it is widely supported that their willingness to pay increases as they perceive the product to be of better quality (Mills 1995; Bontems *et al.* 1999; Bergès-Sennou and Waterson 2005; Dobson and Chakraborty 2015; Fousekis 2010). When considering the interaction of the two most important extrinsic cues of SBLs, namely packaging similarity and price, we posit the following:

H14: The higher the SBL's packaging similarity, the higher their retailing price.

H15: The higher the difference in paired SBLs' packaging similarity, the bigger the price gap between them.

3.4.2 Store brand familiarity

This is also a product-level characteristic. SBLs are introduced to target the switchers who are value conscious and price sensitive. The key elements contributing to consumers' decision to purchase SBs can be simplified into three aspects: quality, packaging, and a price that reflects the product quality. Generally, product quality is not easy to quantify, and the perception of quality is easily affected by the other two factors. Research has shown that, in purchase decisions, it is the perceived quality

rather than the absolute quality that matters (Hoch and Banerji 1993). Only when switchers perceive an SBL to be of good value through the packaging-price mix will they consider it. In other words, if switchers judge product quality through the outer packaging to be of good value compared to the price, they will risk trying the SBL.

Repeat purchases are more likely to happen when customers are satisfied with the quality of a brand, as it will help them to reduce uncertainty when facing brand choices, simplifying the brand selection process. In the SBL scenario, before consumption, a quality expectation is generated by the combined effect of the lower price and packaging similarity. After consumption, the actual quality perception will be compared with the prior expectation. Only when the repeat purchases are triggered by a matched quality perception and expectation will a positive relationship be established and sustained among the consumer, the SBL experience, and the store image. This is in accordance with the outcome derived from a two-stage analytical model by Corstjens and Lal (2000). The level of perceived quality of SBs critically enhances the ability of a retailer to increase store-switching costs and encourage consumer patronage. Furthermore, studies also suggest that improved SB quality contributes to consumers' purchase intentions (Batra and Sinha 2000; Richardson *et al.* 1996), helps expand SB market shares (Erdem *et al.* 2004; Hoch and Banerji 1993), and suppresses consumers' willingness to pay a price premium for NBs (Sethuraman and Cole 1999). The reason that consumers switch to SBs has evolved from being due to economic recession in the early development stage, to being due to their comparable quality but lower prices (Lamey *et al.* 2007).

Consumer price sensitivity is a key factor that influences the pricing strategy for SBLs. Existing literature shows that consumer price sensitivity varies with the perceived risk in the shopping trip/behaviour. Under conditions of uncertainty, perceived risk comprises both the possibility of making a mistaken decision and the consequences that will follow such a mistake (Erdem and Keane 1996). For a given product category, if consumers perceive that the purchase poses a low risk, they will behave in a more price-sensitive way (Sinha and Batra 1999; Nicole *et al.* 2014). Subsequently, they are more motivated to seek greater monetary savings and exhibit a higher

tendency to choose lower-priced SBs ‘smartly’. Consumers’ familiarity with SBs shows a positive influence on perceived risk of SB purchase (Richardson *et al.* 1996). Retailers implement various methods, such as free trials or ‘buy one [NB] get one [counterpart SB] free’ banding sales strategies, to advertise their SBs and to improve consumers’ familiarity with SBs. Indeed, research results reveal that, when consumers become more familiar with SBs, even through inspection, their perceived risk will be reduced accordingly, and they will be more likely to switch to SBs (Fitzell 1992).

‘Purchase frequency’ and ‘volume purchased per trip’ of SBs are good reflections of consumers’ familiarity with corresponding SBs. The more frequently consumers purchase an SB, the more they buy during each trip, then the higher their familiarity with the specific SB will be. A large basket size and high shopping frequency reflect a high consumption requirement and accumulated experience. Consumers with these shopping habits naturally become more familiar with the specific product category, grasp sufficient information regarding the category, and grow more price sensitive. They are more likely to shop around, comparing all the SB alternatives to choose the most valuable one (e.g. Baltas 1997). This leads the retailers to price SBLs lower in categories with high SB familiarity. As the difference in paired SBs’ familiarity increases (behaviour similar with respect to shopping frequency and purchased volume per trip), then the price gap between corresponding SBLs consequently decreases. Therefore, we posit that in a given category:

H16: The higher the SB familiarity, the lower the SBL’s retailing price.

H17: The higher the difference in paired SBs’ familiarity, the smaller the price gap between their corresponding SBLs.

3.4.3 Market strength

This is a retailer-level characteristic. Consumers show higher price sensitivity for SBLs owned by retailers with strong market strength. In this research, the market strength is measured through market reach, including the penetration and market share of an SB in each category. Analysing from the demand side, compared to NB buying behaviour, consumers show higher price sensitivity in SB purchase activities.

Studies show that high brand credibility can effectively lower consumer perceived risk and thus decrease consumers' price sensitivity (Erdem, Swait, and Louviere 2002). Due to a lack of strong differentiation among themselves, SBs fail to provide the necessary brand credibility to consumers. By positioning the packaging of SBLs close to that of a leading NB, retailers take advantage of the latter's brand credibility to alleviate the consumers' perceived risk. However, consumers then grow more price sensitive. In particular, when the SBL is from a stronger retailer, the store credibility helps to decrease consumers' perceived risk further, but it makes them even more price conscious.

On the supply side, retailers that possess strong market strength are more likely to exploit economies of scale, and thus to price their SBLs lower. In a number of studies, Cotterill and Putsis empirically explore the influence of price on the success of SBs (Putsis, 1999; Putsis and Cotterill 1999; Cotterill and Putsis 2000). On the basis of a dataset covering 143 categories and 59 different geographic markets in the US during a two-year period from 1991 to 1992, they reveal that the penetration of an SB (measured as growth in the volume share of SBs) negatively affects its price. Indeed, for retailers that have higher penetration or possess a large market size (reflected in a larger volume share), it is easy to take advantage of economies of scale to cut packaging costs, lower inventory cost, and obtain better prices from suppliers, enabling retailers to price their SBs lower to form a competition advantage (Dhar and Hoch 1997). To sum up, we posit that in a given category:

H18: The stronger the retailer's market strength, the lower its SBLs' retailing price.

H19: The higher the difference in retailers' market strength, the smaller the price gap between their corresponding SBLs.

3.4.4 Market concentration ratio

This is a market-level characteristic. The intensity of competition between industrial organisations depends on: (i) the number of firms competing in a marketplace, and (ii) the heterogeneity of the firms with respect to market share (Dhar and Hoch 1997; Lamm 1981). The more firms there are in a marketplace and the less distinctive is

their market share, the greater the competing intensity will be (Clarke *et al.* 1984). High market concentration and/or market share indicates less competition intensity. There exist two competing theories explaining the relationship between market structure (market concentration and market share) and performance. On the one hand, the traditional theory of market power (Baker 1951; Lamm 1981) proposes a positive relationship between market concentration and/or market share and prices, which in turn provides the producers with higher profits. On the other hand, the efficient structure hypothesis explains both profitability and concentration and market share through efficiency (Demsetz 1973; Peltzman 1977). It posits a positive relationship between concentration and/or market share and company efficiency. The most efficient companies grow more and dominate the market. Accordingly, high concentration and market share are linked with lower prices if some of the savings generated through high efficiency are passed onto consumers.

The positive relationship between market structure (concentration) and price is supported by numerous empirical studies, revealing a positive relationship between concentration and prices, concentration and profitability, and between concentration and price-cost margins (Aalto-Setälä 2002; Hall *et al.* 1979; Kwoka 1979; Sellers-Rubio and Más-Ruiz 2009). In the case of SBLs, retailers operating in a concentrated market have incentives to cooperate rather than to compete. As the competing threats from the rest of the retailers are weak, if they are able to coordinate, they can behave monopolistically and maximise the joint profit in the category. In a market like the UK, where the market share is highly concentrated among a few dominant retailers, they would face less competing force from other retailers (e.g. the discounters such as Aldi and Lidl). Thus, the higher the SBs' concentration ratio among leading retailers, the more they will price corresponding SBLs higher, and the less they will compete with each other on the prices of corresponding SBLs. Accordingly, we posit that in a given category:

H20: The higher the SBs' concentration ratio, the higher the retailing price of the corresponding SBL.

H21: The higher the SBs' concentration ratio, the bigger the price gap between the

corresponding SBLs.

3.5 Summary

This chapter achieved an understanding of key drivers affecting consumers' similarity perception process toward SBLs, and determining the pricing strategies of both NBs and SBs within and across retail stores context. Specifically, it seeks to show that consumers similarity perception toward SBLs is primarily determined by three key packaging attributes, including colour, size & shape, and image, then moderated by various contextual factors, such as consumers' brand familiarity, brand loyalty, and store image. Following this, it moved to explore how such close positioning strategy of SBs impact the price competition between NBs and SBs within an in-store environment and the price competition between rival SBs within a cross-store circumstance. The affecting factors were considered from aspects of product characteristics, manufacturer characteristics, and market characteristics. Accordingly, hypotheses were developed. The hypotheses developed will be tested using both primary data and secondary data collected through various data sources. The next chapter (Chapter 4) will describe the methodological concerns of the empirical tests.

Chapter 4 Methodology

4.1 Introduction

This chapter explains and justifies the methodological choices of this research. It first discusses the knowledge of research philosophy (section 4.2), research designs, approaches, methods and techniques that could have been considered, on the basis interprets the particular choice of this research (section 4.3). Following, section 4.4 interprets the collection process of primary data; section 4.5 explains the collection process of secondary data. In section 4.6, the analysis method used for this study is introduced. After this, sections 4.7 illustrates the statistical models developed for the data analysis.

4.2 Research philosophy

Research philosophy is defined as ‘developing of new knowledge and the nature of that knowledge’ (Saunders *et al.* 2002). Philosophers have suggested that lack of consideration regarding philosophy may jeopardise the quality of research outcomes (Easterby-Smith *et al.* 2002). An understanding of philosophical issues will reward researchers with various benefits (Saunders *et al.* 2012). First of all, it can help with the clarification of study design, which reflects not only in identifying the evidence needed but also in knowing the answers that would achieve accordingly for the research questions developed. Secondly, knowledge of philosophy can help researchers to understand and compare the advantages and limitations of particular approaches, thus enable researchers to speculate which designs will work and choose amongst them the most proper one to follow. Moreover, such knowledge may provide researchers with the potential of identifying designs which may outreach their lived experience.

As many factors can affect the research design of social science, it is vital to have an integrated evaluation on the different research philosophies. Positivism and Interpretivism are the two most predominant paradigms in social science area (Rubin and Babbie 2009). When evaluating research philosophy it is useful to evaluate from three broad perspectives (Bryman 2010):

1. Epistemology: what constitutes the adequate knowledge?
2. Ontology: is the social reality treated as separable or inseparable to its social actors?
3. Axiology: does the research hold an objective or subjective stance from the research?

Table 4.1 compares positivism with interpretivism. It first interprets the two schools of philosophy from ontological, epistemological, and axiological aspects, followed by contrasting their research objectives, the critical methods implemented, the validity, the reliability, and ends with comparing the strengths and weaknesses of the two.

Table 4.1 Comparison between positivism and interpretivism

	Positivism	Interpretivism
Ontology (the researcher's view of the nature of reality)	Researcher and reality are separate	Researcher and reality are inseparable
Epistemology (the researcher's view regarding what constitutes acceptable knowledge)	Objective reality exists beyond the human mind	Knowledge of the world is intentionally constituted through a person's lived experience
Axiology: (The researcher's view of the role of values in research)	Research is undertaken in a value-free way; the researcher is independent of the data and maintains an objective stance	Research is value-bound; the researcher is part of what is being researched, cannot be separated and so will be subjective
Research Object	To discover natural laws so people can predict and control events	To understand and describe meaningful social action
Method	Quantitative method/ experiments, surveys, statistics	Qualitative method/ hermeneutics, phenomenology, constructionism, ethnomethodology, cognitive, idealist, subjectivist
Theory of Truth	Correspondence between theory and truth. Like-for-like plotting between research hypotheses and reality.	Interpretations of research object match lived experience of the object.
Validity	Certainty: data truly measures reality.	Defensible knowledge claims.

Reliability	Replicability: research results can be reproduced.	Interpretive awareness: researchers recognise and address implications of their subjectivity.
Strengths	Wide coverage; Potentially fast and economical; Easier to provide justification of policies	Good for processes, and meanings. Flexible for theory generation. Data collection less artificial
Weaknesses	Inflexible and artificial; Implications for action not obvious	Very time consuming; Difficulties of analysis and interpretations; No credibility with policy makers

Source: Neuman (2006); Easterby *et al.* (2008); Saunders *et al.* (2012)

Positivists believe that objective reality exists beyond the human mind. They trust that only the observable social reality can provide credible data and discover “law-like generalisations”, which are comparable to those created by physics and chemistry (Saunders *et al.* 2012). Positivist researchers are independent existing to the research phenomena. They maintain objective stances to their curious phenomena thus will not affect upon the investigated topics or bias the reality. Positivists tend to uncover the underlying natural theories through highly structured methodologies. They favour evaluating research problems through quantitative method so that the outcomes, with acceptable reliability and validity, can be replicated and be generalised to the population studied. Simply stated, positivists obey two premises to explore the world: (i) reality is objective and external, which is from the ontological perspective; (ii) only those knowledge sourced from observations of external reality make senses, which is from the epistemological perspective.

In contrast, interpretivism researchers believe that reality is not objective and exogenous but is connected with the social constructs and interpreted by people through their lived experiences (Mölder 2010). Interpretivists criticise the “law-like generalisations” supported by positivists. They claim that positivism cannot explore the rich insights underlying the research phenomena, thus is unable to explain the reality in its totality. For example, early psychologists showed that to predict how individuals would react in an operant condition, it only needs to focus on the input of an action and its outcomes, given the unpredictability of almost all those happened in between processes (such as then thinking contents of the individual (Skinner 1938).

Thus, interpretivism tends to rely on evaluating circumstances or cases subjectively, to explore the reality underpinning the cause and consequences. This is perceived as reasonable to make sense of motives, actions, and situations (Mölder 2010). Essentially, interpretivism holds the view that research cannot rely only on pure maths and numbers to explore the reality that is inseparable from people.

Since no single methodology is intrinsically better than another, consideration of research methodology for a study is greatly depends on the nature and needs of the research questions identified. The three central questions have been developed based on the literature review in the preceding chapters are:

Q1: What makes the consumer view an SB to be a lookalike to the NB?

Q2: How does the packaging similarity of an SBL to the targeted NB affect the competition between the two?

Q3: How do retailers compete against each other on the SBLs, more specifically, on the prices?

Because this research focuses on the effects of packaging similarity of SBLs to the targeted NBs on consumers, retailers and NB manufacturers, which are viewed as external to the researcher, this research adopts positivism as the central research philosophy.

4.3 Methodological choices

4.3.1 Research design

A research design is “a master plan specifying the methods and procedures for collecting and analysing the needed information” and as a “framework of the research plan of action” (Zikmund 1997, p. 40). A proper research design is a prerequisite to obtaining convincing empirical evidence to answer the research questions (Nachmias and Nachmias 2008). The three core research designs in social science are exploratory, descriptive and explanatory (Kothari 2008; Robson 2002; Saunders *et al.* 2012):

- (i) *Exploratory designs* are concerned with identifying and understanding the real nature of research phenomena. It fulfils this through asking questions and exploring new research insights into situations, on this basis to develop concepts and hypotheses for further research.
- (ii) *Descriptive designs* seek to define actors, events or social situations accurately.
- (iii) *Explanatory designs* focus on interpreting a case or situation, which usually involves identification of a causal relationship between phenomena so as to uncover patterns relating to those phenomena.

Based on the research objective of exploring the relationships between the phenomenon of SBLs and the various market players, namely the consumers, the retailers, and the NB manufacturers, this research adopts an exploratory design.

4.3.2 Research approach

A research approach interprets the path through which knowledge and theory are developed. In general, there are three logic approaches to choose among to establish research hypotheses, namely induction, deduction, and abduction.

- (i) *Induction* allows deriving a consequence from a hypothetical explanation where the consequence does not necessarily follow from the hypothetical explanation. There is a gap in the logical argument between the consequence and the hypothesis proposed. Therefore, induction seems to be a natural extension of interpretivism. It is suitable for research where there is little literature available in the area.
- (ii) *Deduction* derives a consequence from a hypothetical explanation only when the consequence logically results from the assumption. Given a true assumption, a valid deduction guarantees a true conclusion. A deduction approach relates to positivism. It is recommended for research if the theoretical framework and hypotheses can be established from available literature.

(iii) *Abduction* allows inferring an assumption as an explanation of a consequence. It allows the hypothetical explanation to be abducted from the consequence and seeks to find the simplest and most likely explanation for the consequence. Abduction combines both induction and deduction. For a case covers various contexts, an abductive approach might be proper if the literature relating one context are sufficient but are far less when considering another context.

This research adopts deduction as the main research approach, given positivism is the selected research philosophy. Accordingly, such approach will generate evidence to either support or reject hypotheses to achieve conclusions regarding the three research objectives, and in between to select the best explanation for each question.

4.3.3 Research methods

Considering the underpinned epistemological and ontological assumptions, research can be classified as of being qualitative or quantitative (Neergaard and Ulhøi 2007; Saunders *et al.* 2012).

- (i) Qualitative method deals with non-numerical data. Such research is based on interpretive, natural approaches to study phenomena within a specific situation where people dictate the meaning for the various components involved. Researchers are keen on exploring the “why” of a case, emphasising on local context rather than following those “law-like generalisations” (Grady 1998). Researchers who support qualitative method insist that qualitative methods can provide data collected with depth and richness. Qualitative method is ideal for exploring new research areas and for studying complicated questions, which can be applied to create new theories. However, opponents point out that such methods lack sufficient test on the complex underlying structures and interactions.
- (ii) Quantitative method involves collecting and analysing numerical data. Such method relies on examining and analysing data concerning quantities. Quantitative method emphasises on measuring the number of objects or

properties so as to interpret and test the relationships of the empirical observations mathematically. Most quantitative research in social science follows a positivist approach. This approach usually adopts data with large sample size to draw “law-like generalisations” thus developing rules which can be used in outcome production. Researchers who support quantitative method argue that large sample sizes can be manipulated easily using mathematical and statistical analysis methods. Nonetheless, the difficulties in collecting large samples required can seriously harm the feasibility of a study. Opponents point out that, through quantitative method, it is difficult to properly uncover the complicated natural interactions in the phenomena.

As this research is aimed to ascertain the effects of lookalike packaging of SBLs on the activities of various market players following a positivist philosophy, and since it adopted an explanatory design through a deductive approach, a quantitative method was perceived as the most appropriate approach.

4.3.4 Sources of data

In general, there are two types of data used in social science research according to their source (Saunders *et al.* 2012):

- (i) *Primary data* is usually collected directly by researchers for the use of a specific study. There are three main sources of primary data: observations, interviews and questionnaire. Primary data collected through observations aims to provide detailed insights into people’s activities through taking sets of notes to specify the context. Interviews help to collect primary data in the mode of either one to one or small group question and answer sessions. A questionnaire usually contains various questions that define the focal response parameters and are usually arranged in a pre-determined order. Regardless that questionnaire is a more “rigid” instrument than the interview; it is widely adopted by research involving large numbers of participants.

(ii) Secondary data is information used in research which have originally been compiled by a third party for other purposes. There are three main sources of secondary data: documents, non-written communication, and survey based. Documents are written materials that can offer valuable information, either current or historical. Documents are important sources of secondary data given the depth, breath and feasibility of the information provided by this source. This type of secondary data includes notices, correspondence, meeting minutes, reports, diaries, transcripts, administrative, public records, websites pages, social media and league tables. Non-written communication includes video/voice, pictures and drawings, films, television and computerised databases. Given the difficulty and amount of time involved in dealing with information from this source, it is much less approached by researchers in social science than the other sources. Survey based secondary data refers to data sourced from existing observations, interviews, questionnaires and censuses. Such data are typically preserved for the use of further analysis or a totally new research topic.

Considering the three research questions of this study, both primary data and secondary were needed to develop answers.

For the first research question, answers were seeking from two aspects: (i) how the various packaging elements affect the overall physical packaging similarity of SBLs; (ii) how the various identified contextual factors affect consumers' similarity perception process when facing lookalikes. We were keen on the latest development in the real market regarding the lookalike phenomenon. To this regard, up-to-date survey data might better fulfil the objects for these questions.

Then for the second and third research questions, we were interested in how the close positioning strategy of SBLs to NBs affect the price competition between retailers and NB manufacturers, as well as the price competition among rival retailers. Both data to reflect the extent to which one SBL has been positioned closely to an NB, and data to evaluate the marketing performance of both the SBLs and the NBs were needed. We figured that it is consumers' perceived similarity rather than the objective similarity of SBLs that matters in their relating purchase decisions on the SBLs and the NBs.

Further, it is the accumulated effects of such purchase decisions that partly contribute the marketing performance of the SBLs and NBs. On the other hand, collecting first hand data to reflect the marketing performance of paired SBL and NB is too difficult and unnecessary, considering the time might involved and expenses required. Thus, it is reasonable to meet the former need through online survey investigating consumer similarity perceptions on SBLs, and approach secondary data collecting necessary marketing performance information to fulfil the later need.

4.4 Data collection - Primary data

Three online studies were conducted to collect primary data needed.

The first two studies were conducted to answer the first central research, testing how the various antecedents critically affect the perceived similarity. Since the perceived similarity is predominantly derived from the lookalike packaging, Study 1 tested how the three packaging dimensions of SBLs, namely size and shape, image, and colour, affect consumers' perceived similarity. Furthermore, perceived similarity also differs as a result of the distinction in respect of consumer characteristics and retailer characteristics. Thus, in Study 2, it explored answers for the influences of three contextual characteristics – consumers' brand loyalty, brand familiarity and store image – on consumers' perceived similarity.

The main purpose of Study 3 was to collect consumers' perceptions of the packaging similarity of SBLs against targeted NBs. The data collected in the third study were then combined with two secondary datasets (the collection of these two datasets will be interpreted in more detail in section 4.2). The combined dataset was then used to test the second and the third central research questions - how the close positioning strategy of SBLs, packaged similarly to leading NBs in given categories, affect price competition between retailers and NB manufacturers, as well as affect price competition among rival retailers.

The next three sub-sections will interpret the collection of primary data through the three online studies, separately.

4.4.1 Study 1: relative importance of packaging elements

Study 1 was designed to assess the importance and the relative importance of packaging attributes on perceived similarity of the product packaging. In this study, to obtain the separate effect of each packaging attribute on similarity perception, the selected product packaging pictures were professionally manipulated from the three aspects (i.e. size and shape, image, and colour) independently.

(i) Stimuli

In selecting the stimuli, three rules were applied: (i) the product categories must have high prevalence and wide exposure, so as to minimise bias caused by the influence of contextual factors (e.g. it might be difficult to rule out the extreme situation in the case of wine, as it is hard to distinguish the effect of brand familiarity from the effect of packaging attributes per se, if comparing wine consumers with those have little experience with wine); (ii) SBLs must exist within the product category; and (iii) it should not be too complicated to manipulate from the three packaging attributes identified using graphic design software “Photoshop CS”. Then, two product categories, “crisps” and “ketchup” from Tesco, were selected as the stimuli, with Walkers and Heinz identified as their targeted leading NBs.

Theoretically, there would be 8 treatments if we conduct a full-factorial design (check Table 4.2 for the experiment design). Because we consider three packaging attributes as the key determinants for perceived similarity; if we consider the three attributes at two levels for each, it will result in 8 packaging combinations. However, by introducing the orthogonal design, we constrain the treatments to 4 to meet our research purpose. We do not consider those interactions between each two or three packaging attributes, since referring to the product market in real life, in each category, some of the packaging attributes are actually being defined as a category code and are widely utilised among different brands. Examples are the size and shape of 2L bottle for fizzy drinks, the orange colour for orange drinks, *etc.* Limited attributes are remained to distinguish between brands (e.g. the colour black is adopted by Pepsi to distinguish it from the red colour of Coca-Cola, and all the other packaging attributes are almost the

same, but rarely would consumers confuse these two brands). It is of great importance to figure out which is the most significant factor that determines the similarity perception. Thus, following a balanced orthogonal design, the three aspects of the packaging attributes were independently manipulated at two levels (low vs. high similarity) thus generating eight pictures belonging to four treatments for further application in the online experiment (see Appendix 1 for the pictures produced).

Table 4.2 Experiment design of Study 1

Treatments ^a	Manipulated variables			Treatment purpose
	Colour	Size & shape	Image	
T1	×	×	×	Baseline
T2	✓	×	×	Low colour similarity
T3	×	✓	×	Low of size & shape similarity
T4	×	×	✓	Low image similarity

Notes: ^a Dependent variable is the perceived similarity of an SBL to the targeted NB. “✓” means the specific variable is included and manipulated in the treatment, “×” denotes the manipulation is not applied in that treatment.

(ii) *Participants and Procedure*

In the study, the leading NB packaging was displayed next to one of the four SBL packaging in each category. Every participant performed 8 tasks (4 treatments × 2 products) in a random order. Specifically, to reflect their perceived similarity for these packaging pairs, participants were asked to rate their degree of agreement to the statement: “B (SB) looks very similar to A (the leading NB)” on a 7-point Likert scale (1-7 not at all to totally). This statement was repeated for each of the 8 tasks. Following the similarity judgement tasks, extra information was also collected: brand familiarity (both with the NB and the SBL), whether they buy SBs as a substitute for NBs, shopping frequency of the respective product, and whether the participant is the

primary shopper in the household, as well as age, gender, gross income and education level.

The experiment was conducted online using a Qualtrics web-based questionnaire and the participants were mainly from four cities in the UK: Norwich, Nottingham, Belfast and Coventry. We obtained useable data from 190 participants. Over half of the participants are female (55.8%), the majority of them are the primary shoppers in their households (77.4%), and they are distributed through the various age groups (only one participant is under the age of 20; 22.7% are under the age of 30, and 57.3% are from the age group 30-49). A majority of 60% hold at least an undergraduate degree and 62.6% gain a gross annual income over £20,000. Table 4.3 provides specific descriptive data for our sample in this study.

Table 4.3 Demographic statistics of Study 1 (N=190)

	%
<i>Age</i>	
Under 20	.5
20-29	22.1
30-39	30.0
40-49	27.4
50 and above	20.0
<i>Gender</i>	
Male	44.2
Female	55.8
<i>Education up to</i>	
GCSE (or school leaver at 16)	17.4
A-level (or equivalent up to age 18)	9.0
College Diploma/award	13.7
Undergraduate (BA/BSc) degree	33.7
Post-graduate or higher degree/award	26.3
<i>Are you the primary shopper in your family?</i>	
No	22.6
Yes	77.4
<i>Gross Income</i>	
Under 9,999	9.0
10,000 -19,999	19.5
20,000 -29,999	16.8
30,000 -39,999	16.3
40,000 -49,999	11.1
50,000 or above	18.4

Don't know	.8
Do not want to tell	14.0

4.4.2 Study 2: importance of consumers' characteristics and retailer characteristics

Study 1 explores the importance of the three objective packaging attributes and their relative importance in determining consumers' similarity perception of SBLs. To consider how some subjective factors might affect the perception process, a second study was conducted.

(i) Stimuli

Product pictures from seven categories, chosen for their representativeness of the SBL phenomenon, were used as the stimuli: cola, bleach, cornflakes, washing-up liquid, Jaffa cakes, ketchup, and potato crisps. In the questionnaire, consumers' demographic information was first collected to screen out untargeted consumers, followed by questions regarding store image perception. Then for each of the seven product categories, a product picture of an SBL from Tesco was displayed on the right-hand side of the corresponding leading NB as a pair of products. All of the seven product pairs were displayed in a random order for each participant. For each pair of product pictures, the participants were first asked to judge how similar the SBL was to the leading NB on a 7-point scale (1-7 not at all to totally), then followed by considering their brand familiarity and brand loyalty to the leading brand presented in each task.

(ii) Participants and Procedure

A Qualtrics web-based questionnaire was designed and the generated web link was sent to prospective participants through email, as well as being posted on social media websites. As Study 2 was meant to focus on the UK FMCGs market, we added several questions to screen out those people who were not living in the UK, or who were under 20, to avoid possible noise being included in the returned data. 148 useable questionnaires were returned. Among the sample collected, 49% were female, 47% were aged between 20 and 29, over 60% earned an gross annual income over £20,000, and 56% held at least an undergraduate degree (see Table 4.4).

Table 4.4 Demographic statistics of Study 2 (N=148)

	%
<i>Age</i>	
20-29	19.6
30-39	21.6
40-49	25.7
50 or above	33.1
<i>Gender</i>	
Male	51.3
Female	48.7
<i>Education up to</i>	
GCSE (or school leaver at 16)	21.6
A-level (or equivalent up to age 18)	10.8
College Diploma/award	11.5
Undergraduate (BA/BSc) degree	33.8
Post-graduate or higher degree/award	22.3
<i>Are you the primary shopper in your family?</i>	
No	24.3
Yes	75.7
<i>Gross Income</i>	
Under 9,999	11.5
10,000 -19,999	22.3
20,000 -29,999	21.6
30,000 -39,999	14.2
40,000 -49,999	10.8
50,000 or above	16.9
Don't know	.7
Do not want to tell	2

(iii) *Key measurements*

Consumers' brand loyalty was measured through three items adapted from Beatty and Kahle (1988). The four items measuring familiarity with branded products were drawn from Kent and Allen (1994), and Diamantopoulos *et al.* (2011). Then, the environmental variable "store image" was tested through a five-item scale adapted from several studies (Grewal *et al.* 1994; Tsiros and Hardesty 2010; Theotokis *et al.* 2012; Wu and Tian 2009). In detail, these measurements were:

Brand loyalty (take "Coca-Cola" as an example)

- 1) If Coca-Cola is not available at the store, it will make little difference to me to buy a different one (reversed item)
- 2) When another brand is on sale, I generally purchase it instead of Coca-Cola

(reversed item)

- 3) In general, I am loyal to Coca-Cola

Brand familiarity (using one of the seven NBs introduced in this study, e.g. “Coca-Cola” as an example)

- 1) For me, Coca-Cola represents a brand that I know very well
- 2) Overall, I think myself very well informed about Coca-Cola
- 3) In general, I consider myself very familiar with Coca-Cola
- 4) I am experienced with Coca-Cola

Store image

- 1) I shop at ** (Store name) because of its low prices
- 2) I shop at ** (Store name) because of the high quality of its products
- 3) I shop at ** (Store name) because of the high level of service and facilities provided
- 4) I shop at ** (Store name) because of the store’s convenience
- 5) I shop at ** (Store name) because of the store’s image

4.4.3 Study 3: consumers’ perception of packaging similarity

To generalise the results of the first two studies, as well as to collect primary data to answer the second and third central questions of this thesis, a third online survey was conducted to collect consumers’ similarity perceptions of SBLs.

(i) Stimuli

By browsing the website <http://www.mysupermarket.co.uk/>, a wide range of product were filtered based on the brands which appeared in the series reports published by the British Brand Group in 2011 and 2012, and also the brands on the ranking list of “Britain 150 Biggest Grocery Brands in 2012”. Specifically, it was checked to see if there are corresponding SBLs for each brand in those lists. Consequently, product pictures of paired SBLs and NBs from 75 product categories that belong to eight broad categories such as food, drinks, toiletries and household goods were used as the

stimuli. For each of these 75 product categories, product pictures of the SBLs from ASDA, Sainsbury's and Tesco, as well as the targeted NB, were downloaded from the "mysupermarket" website. At the same time, the matched unit prices were recorded. For each product, the prices of the paired NB and SBL in each retail supermarket were recorded separately.

These products were then randomly distributed into six groups. Among the 75 products, three products commonly appeared in each of the six groups, and the other 72 products were randomly distributed into six groups with each group including 12 products (see Appendix 3 for the 75 products identified and the corresponding grouping). Each group included 15 stimuli and each stimulus consisted of four brands, presented in order so that the imitated NB is juxtaposed by the SBLs from ASDA, Sainsbury's, and Tesco. Based on these six groups of stimuli, six versions of questionnaires were developed accordingly.

(ii) Participants and Procedure

An online survey was conducted within two weeks using the administration staff at the University of East Anglia as respondents (see Appendix 4 for the questionnaire sample). Three streams of information were collected:

- Familiarity: for each product and each brand, two questions were asked. (i) How familiar are you with the brands above? (ii) How often do you buy the product above?
- Similarity: for each product, the respondent was asked to judge and give a score for the packaging similarity between the targeted NB and each SBL, and then an extra question was asked to measure the switching tendency to SBs: 'for this product, how often do you buy a retailer branded or store brand version rather than the well-known brand?'
- Consumer characteristics and background: age, gender, marital status, gross income, educational level, 'whether they act as the primary shopper in household', and 'the shopping frequency to supermarkets'.

In total, 129 finished questionnaires were collected, which finally generated 5,643 useable scores of the packaging similarity of SBLs to the targeted NBs. Table 4.5 provides descriptive data for the survey sample.

Table 4.5 Demographic statistics of Study 3 (N=129)

	%
<i>Age</i>	
Under 20	.8
20-29	20.9
30-39	27.1
40-49	27.9
50-59	19.4
60 or over	3.9
<i>Gender</i>	
Male	24.0
Female	76.0
<i>Marital Status</i>	
Single	26.4
Married	47.3
Divorced/Separated	4.7
Co-habiting	21.7
<i>Are you the primary shopper in your family?</i>	
No	27.1
Yes	72.9
<i>Education up to</i>	
GCSE (or school leaver at 16)	5.4
A-level (or equivalent up to age 18)	10.1
College Diploma/award	14.0
Undergraduate (BA/BSc) degree	39.5
Post-graduate or higher degree/award	31.0
<i>Gross Income</i>	
Under 9,999	1.6
10,000 -19,999	8.5
20,000 -29,999	10.9
30,000 -39,999	19.4
40,000 -49,999	14.7
50,000 -59,999	12.4
60,000 or above	17.8
Don't know	.8
Do not want to tell	14.0

4.5 Data collection - Secondary data

4.5.1 Data source

In order to measure the market performance of the sampled products in Study 3, two data sources were approached and the information on demand was extracted accordingly. The first dataset derived from the annual report of ‘The Grocer’s Top Products Survey 2012’ published by Nielsen (henceforth mentioned as NIELSEN). The report was sourced using nationwide data provided by the Nielsen’s Scantrack service. It covers weekly sales data by EPOS checkout scanners from approximately 65,000 outlets, which includes grocery multiples, co-ops, multiple off-licences, independents, multiple forecourts, convenience multiples and symbols during the annual period ended on 13th October 2012. The report consists of two parts: detailed market performance analysis and ranking tables. It comprehensively analyses the performance of the top brands in each product category with sound detail, and then ranks the performance of the top brands in each category in tables on the basis of three indicators – turnover in the year 2012 (unit: millions pounds); turnover change compared to the year 2011 (unit: millions pounds); and the yearly turnover change in percentage. In addition, the categorical information regarding these three indicators is also presented.

A second dataset, which presents the market performance of the SBs covering over 300 products categories in the FMCG sector of the UK market in 2012 and 2013, was obtained from Kantar (henceforth mentioned as KANTAR), a world-leading research, data and insight company. It reports the SBs’ performances in each product category in 2012 and 2013 on two levels: market level and retailer level. In detail, five indicators are recorded to measure the performances of each SB: aggregate spend on SBs, purchase frequency of respective SBs, volume purchased per trip, average price, and penetration.

4.5.2 Data extracted relating price competition around store branded lookalikes within stores

Demand information was extracted from the two secondary datasets, and was then matched with the survey data collected through the third online study. A consolidated dataset was then formed, consisting of the price gap, the average price of the targeted

NB, the average price of the SBL, the similarity degree of the SBL to the targeted NB, the NB's performance information, and categorical SBs' performance characteristics. In detail, the information extracted includes:

- *Manufacturer characteristics.* Data for two indicators measuring the market strength of the targeted NB were obtained from the dataset NIELSEN: (i) "brand sales turnover change" for 2012 compared with 2011 (*BSTC*); and (ii) the market share of the targeted NB (*NBMS*). For a given product, increased brand sales turnover (thus a positive sales turnover change) indicates increased market strength. For instance and in accordance with H11, we expect a positive effect direction between the "brand sales turnover change" for 2012 and the price gap. A high market reach (reflected by a high market share) of the NB also indicates a high market strength, posing a positive effect on the price gap.
- *Category Characteristics.* To monitor the influence of category characteristics, data for two indicators were also obtained from the dataset NIELSEN: (i) the "store brand market share" in the category (*SBMS*), to capture the degree of penetration of own label goods in the category; and (ii) the "top three brands concentration ratio" (*CR3*) as the sum of market shares of the top 3 brands in the category, to capture the degree of market dominance by the leading brands. It has been widely accepted that the market strength of the store brands is positive correlated with their market share, therefore H12 is interpreted as: the higher the overall market share of the SBs in a given category, the narrower the price gap between a lookalike and the targeted NB. Regarding the concentration ratio of NBs, H13 can be alternatively explained as: the more concentrated the market share of NBs, the narrower the price gap between an SBL and the targeted NB.
- *Control variables.* Control variables were also included to characterise the SBs' performance in the category the SBL belongs to, as much of the price gap variation might well be down to the product characteristics. Specifically, SBs' performance information was controlled through five indicators obtained from the dataset KANTAR on category basis at retailer level. In particular, each of the 75 products studied was first assigned to a Kantar product category and information on demand was recorded. For

each SB category at each retailer (i.e. Tesco, ASDA, and Sainsbury's), the following five indicators were recorded: (i) purchase frequency (*PF*), (ii) volume purchased per trip (*VPT*)³, (iii) average price (*AP*), (iv) penetration (*PEN*), and (v) aggregated market share of SBs (*AMS*). In addition, a retailer-specific effect was also considered through two dummies: one for a product from ASDA and one for a product from Sainsbury, assigning products from Tesco as the baseline (i.e. both dummies were assigned with the value 0 for the products from Tesco). Finally, to control pricing, variances sourced from category characteristics and product type features, two sets of dummies were applied respectively. Seven dummies were applied to control the product categories (as according to 'mysupermarket' website, the 75 products involved in this study are distributed into eight wide categories), and one dummy to reflect whether the product is food (value equals 1) or non-food (value equals 0).

Though these covariates are not the focus of this research, controlling for them can provide a stronger test for the hypotheses developed. Specifically, Nijs *et al.* (2007) clarify that except for wholesale prices, four extra bases would affect how the retailers set retail prices: (i) pricing history, (ii) consumers' demand; (iii) category feature considerations, and (iv) prices of rival retailers. By including the control variables explained above, this research takes into account the majority of these factors. Consumers' demand is reflected by the control variables regarding SBs at the retailer level, which are *PF*, *VPT*, *AP*, *PEN*, and *AMS*. The category feature is considered through the seven dummies regarding product categories and the dummy indexing product type. Though a dummy variable was applied to control the source of SBLs (i.e. to reflect which retailer an SBL belongs to), it does not include the impact of rival retailers' specific competitive prices, as this begs the question of endogeneity (i.e. simultaneous determination of all these price gaps, rather than a one-way cause-and-effect relationship that it would expect with regression analysis). However,

³ The original values of these first two indicators are measured at retailer level in the dataset, which depends on how many customers each retailer has (i.e. the penetration of the retailer). So regardless of the product, a retailer with a higher penetration will always have higher purchase frequency and purchase volume per trip than the other retailers. To account for this correlation, following Batra *et al.* (2000) and ter Braak, Dekimpe and Geyskens (2013), we estimated the portion of these two indicators explained by the penetration and included the remaining part that is not attributed to the penetration (i.e. the residuals) instead of the original measures to circumvent potential multicollinearity.)

this will not be an issue in this research's model. As explained by Nijs *et al.* (2007), this factor is much less important than other aspects for the focus of this research.

4.5.3 Data extracted relating price competition around store branded lookalikes across stores

To test how retailers compete each other on SBLs, performance information regarding the 75 NBs and 225 SBLs from the three retailers (i.e. ASDA, Sainsbury's, and Tesco) in the fiscal year 2012 were extracted from the two secondary datasets accordingly. The key measures and their interpretation are as follows:

- *Consumers' SB familiarity.* Two indicators were extracted from KANTAR to depict consumers' familiarity for each retailer's SB: purchase frequency (i.e. how many times on average has a household purchased SBs at the retail store during the year), and volume purchased per trip (i.e. how much volume on average has a household purchased per trip at the retailer store during the year).
- *Retailer market strength.* Two indicators were obtained from KANTAR to index the market strength of each retailer: (i) penetration, measured as the percentage of all households that shop at the retailer and make at least one purchase in a category during a year; and (ii) market share by volume, calculated as the percentage of SBs sold by a retailer indexing to SBs sold by all retailers in a category.
- *Market concentration ratio.* The concentration ratio of SBs in a specific category was generated from KANTAR. This indicator is calculated as the aggregate market share of SBs from the three retailers (i.e. ASDA, Sainsbury's, and Tesco) in a category.

Control variables

- *Average price of SBs.* From NIELSEN, we recorded the average price of SBs (including all three-tiers) sold by a retailer in each category to control for the influence of categorical pricing.
- *Channel-level control variables.* Two indicators were obtained from NIELSEN to

control for the influence of channel competition in a given category: (i) the market share of SBs, indexing the total market that includes both NBs and SBs, to control for the influence of the categorical SBs strength; and (ii) the aggregate market share of the top 3 NBs, to control for the influence of competition intensity among NBs.

- *Dummy control variables.* First, we control for the uniqueness of pricing strategy of each retailer through dummies. As two models – a *Pricing Model* and a *Price Competition Model* were examined to test the hypotheses developed, dummies were set accordingly. In the *Pricing Model*, SBLs from ASDA and Sainsbury's were indexed through two dummies, with SBLs from Tesco as the baseline. In the *Price Competition Model*, the comparison source, which were between SBLs from ASDA and Tesco, and between SBLs from Sainbury's and Tesco, were controlled through two dummies respectively (the comparison between SBLs from ASDA and Sainbury's forms the baseline). In addition, we set seven dummies to control for the pricing influence due to category feature. Following the 'mysupermarket' website, the 75 products studied were distributed into eight general categories.

Controlling for these covariates entails a stronger test of the hypotheses as it considered the three aspects that determining the setting of retail prices suggested by Nijis *et al.* (2007). Consumer demand is reflected by the purchase frequency and volume purchased per trip. The categorical role is accounted for by the penetration and volume share of a retailer, as well as by the overall market share of SBs and the top three NBs' concentration ratios in each category. The influence of historical prices is considered by including the average price of all SBs in the category during the previous year. Then the SBs' concentration ratio measures the extent to which these three retailers might like to compete with each other on prices.

4.6 Analysis method

To generalise meaningful explanation for the overall phenomena from the collected limited data, careful analyzation and interpretation are required. Data analysis is a process of breaking down information so as to clearly understand the relationships between its components. The difficulty of analysing quantitative data lies in

manipulating and analysing the large amounts of data collected. In this research, to explore answers to the three research questions, the data collected were analysed using two different statistical instruments: structural equation modelling (SEM) and regression analysis.

4.6.1 Structural equation modelling

Structural equation modelling (SEM) is one of the multivariate statistical techniques. SEM is a powerful tool to provide “a broad, integrative function conveying the synergy and complementarity among many different statistical methods (Bagozzi and Yi 2012, p.10).” Shah and Goldstein (2006) define SEM as a “technique to specify, estimate and evaluate models of learner relationships among a set of observed variables in terms of generally smaller number of unobserved variables”. Using SEM, we are able to examine relationships between observed variables that are measurable and latent variables that are immeasurable directly, so as to evaluate whether speculated relationships between them are valid (Byrne 2012). Moreover, it does not matter if the examined variables are exogenous or endogenous. Compare with regressions, the strength of SEM lies in that “the structural model describes three types of relationships in one set of multivariate regression equations: the relationships among factors, the relationships among observed variables, and the relationship between factors and observed variables that are not factor indicator (Muthén and Muthén 2010, p.52).”

In this research, for the first research question that “What makes the consumer view an SB to be a lookalike to the NB”, two studies were conducted to collect data in need. Among these two studies, the second one (i.e., Study 2 interpreted in section 4.4.2) was to uncover the effects of various contextual factors. Considering the complex of the relationships among the tested components in this dataset, SEM was chosen as the analytical instrument for Study 2. The corresponding analysis was conducted using SPSS 21 and Mplus 7.

4.6.2 Regression analysis

Regression analysis is an instrument that can be used to interpret relationships between variables. Typically, it includes either one or more independent variables as the predictors and one dependent variable as the outcome, and uses the independent variable or variables to estimate the dependent variable. It can manifest the strength of each particular relationship within a testing model, the extent to which the dependent variable can be explained by an independent variable, and the likelihood that the result would surely happen (Saunders *et al.* 2012).

In regression analysis, to determine the sample size, the researcher has to consider soundly the feature of the data that is to be analysed, the number of independent variables included in the statistical model, and the conclusions drawn from the model when it is robust. Generally, a suggested common sample size should be around 30 and the minimum sample size should be 20, with obtaining at least 5 observations for each independent variable in the model (Hair *et al.* 1998).

In this study, two types of regressions were used in the data analysis; one is ordered logit regression and the other is multiple linear regression. Specifically, for data collected to uncover the relative importance of packaging elements on packaging similarity perception process (i.e., Study 1 presented in section 4.4.1), it adopted an ordered logit regression analysis. Then, a multiple linear regression analysis was used for the combined dataset based on a primary dataset and two secondary datasets (see section 4.5 for the secondary data collected), with the purpose to explore answers for the second research question “How does the packaging similarity of an SBL to the targeted NB affect the competition between the two”, and the third research questions “How do retailers compete against each other on the SBLs”. Corresponding analysis was conducted using STATA 13.

4.7 Statistical models

4.7.1 Statistical model for relative importance of packaging elements

To test the relative importance of packaging elements, an ordered logit regression model was introduced for data collected in Study 2, which matches the ordered

features of the values for degree of similarity. The statistical model is as follow:

$$PL_{ij} = \beta_1 T2_{ij} + \beta_2 T3_{ij} + \beta_3 T4_{ij} + Controls_i \quad (4.1)$$

PL_{ij} is the perceived degree of similarity of the product i given by individual j ;

$T2_{ij}$ is a dummy variable equal to 1 if the similarity score from individual j regarding product i is generated through treatment 2; 0 otherwise;

Likewise for $T3_{ij}$ and $T4_{ij}$;

Controls refer to brand familiarity, whether buy SBs as substitutes for NBs; shopping frequency, age gender, gross income, and education level. Then, similarity variances derived from product categories were controlled through a dummy variable, with ketchup as the baseline.

Note that Treatment 1 (the original packaging treatment) is omitted from the model as it is treated as the baseline of the regression analysis. T2 reflects the effect of colour, T3 tests the effect of size and shape, and T4 shows the effect of image.

4.7.2 Statistical model for price competition around store branded lookalikes within stores

Before proceeding to hypotheses test for the second central research question, we preprocessed some original information in the combined dataset. In specific, to exclude the variance caused by absolute unit price across different product categories, the retailing prices of a specific SBL ($Psb_{ij}\%$), the targeted NB ($Pnb_{ij}\%$), and the categorical price of all SBs sold by a retailer ($AP_{ij}\%$), this indicator is considered within the X matrix) are measured through relative scales.

(i) the relative price of NB was calculated through:

$$Pnb_{ij}\% = \frac{3 \times pnb_{ij}}{(pnb_{1j} + pnb_{2j} + pnb_{3j})} \times 100 \quad (4.2)$$

$Pnb_{ij}\%$ represents relative price of the targeted NB set by retailer i in category j ;
 pnb_{ij} denotes the absolute unit price of NB set by retailer i in category j ;

$(pnb_{1j} + pnb_{2j} + pnb_{3j})$ is the sum of the absolute unit price of NB set by the three retailers in category j .

(ii) the relative price of SBL was calculated through:

$$Psb_{ij}\% = \frac{3 \times psb_{ij}}{(psb_{1j} + psb_{2j} + psb_{3j})} \times 100 \quad (4.3)$$

$Psb_{ij}\%$ refers to the relative price of SBL i in category j ;

psb_{ij} represents the absolute unit price of SBL i in category j ;

$(psb_{1j} + psb_{2j} + psb_{3j})$ is the sum of the absolute unit price of all three SBLs in category j .

(iii) the average price including all three-tiered SBs sold in category j by retailer i is measured as follows:

$$AP_{ij}\% = \frac{3 \times ap_{ij}}{(ap_{1j} + ap_{2j} + ap_{3j})} \times 100 \quad (4.4)$$

$AP_{ij}\%$ refers to the relative price of all SBs sold by retailer i in category j ;

ap_{ij} refers to the absolute average price of all SBs sold by retailer i in category j ;

$(ap_{1j} + ap_{2j} + ap_{3j})$ is the sum of the absolute average price of all SBs sold by the three retailers in category j .

The key dependent variable – the price gap, and the focal independent variable, the packaging similarity, were calculated as following:

(iv) Price gap

The key dependent variable in this study is the price gap between an SBL and the targeted NB ($PG_{ij}\%$). This variable is computed as the variance between the unit price of an SBL and the targeted NB in a given store through:

$$PG_{ij}\% = \frac{(Pnb_{ij} - Psb_{ij})}{Pnb_{ij}} \times 100 \quad (4.5)$$

Pnb_{ij} represents the unit price of the targeted NB in product category j set by retailer i . This research empirically tested 75 product categories sold in three major retailers in the UK. Therefore, $j = 1, \dots, 75$; $i = 1, 2, 3$.

Psb_{ij} denotes the unit price of the SBL in the product category j set by retailer i .

(v) *Packaging similarity.*

This variable is one of the focal independent variables this research would like to focus on, and 5,643 observations from 129 respondents were obtained from the online survey. To avoid consumer variances in similarity judgement tasks⁴, the relative degree of packaging similarity (PS_{kij}) is introduced, which is calculated as:

$$PS_{kij} = \frac{3 \times ps_{kij}}{(ps_{k1j} + ps_{k2j} + ps_{k3j})} \quad (4.6)$$

ps_{kij} stands for the original score of packaging similarity judged by respondent k on an SBL in product category j sold by the retailer i ,

$(ps_{k1j} + ps_{k2j} + ps_{k3j})$ is the corresponding sum of original scores of packaging similarity on SBLs sold by all three retailers in product category j .

This variable indicates that among the three SBLs in each product category the extent to which a retailer positions respective SBL close to the targeted NB.

After all these manipulations, two models were established to test the relating hypotheses.

(i) *Price Competition Model*

With the price gap between an SBL and the targeted NB in category j sold by retailer i as the dependent variable ($PG_{ij}^{\%}$), the price competition model is interpreted as following:

⁴ In similarity tasks, people's reactions show some habituation. Some individuals tend to avoid extreme scores, and their rates may gather in the middle for all rating tasks, but others would give extreme rates, and their scores may skew to the left or right of the overall scale (Johnson, Lehmann, and Horne 1990; Bijmolt, Wedel and Pieters 1998).

$$PG_{ij}\% = \alpha_1 + \beta_{11}PS_{ij} + \beta_{12}BSTC_{ij} + \beta_{13}NBMS_{ij} + \beta_{14}SBMS_{ij} + \beta_{15}CR3 + \Delta X + \varepsilon_{1ij} \quad (4.7)$$

where the X matrix includes for all control variables, and Δ represents the vector of their coefficients. As the 5,643 observations of similarity degree were obtained from 129 participants, the scores from the same participants may be correlated. To account for the possible inter-correlation among multiple similarity observations belonging to the same participant, a robust clustered error-term estimation was used (cf. Mizik and Jacobson 2009).

(ii) *Retailing Price Model*

Then, to examine how the retailing prices of SBLs ($Psbl_{ij}\%$) and the targeted NBs ($Pnb_{ij}\%$) in category j sold by retailer i are affected by the packaging similarity of SBLs (PS_{ij}), two *Retailing Price Models* are established accordingly as follows:

$$Psbl_{ij}\% = \alpha_2 + \beta_{21}PS_{ij} + \beta_{22}BSTC_{ij} + \beta_{23}NBMS_{ij} + \beta_{24}SBMS_{ij} + \beta_{25}CR3 + \Delta X + \varepsilon_{2ij} \quad (4.8)$$

$$Pnb_{ij}\% = \alpha_3 + \beta_{31}PS_{ij} + \beta_{32}BSTC_{ij} + \beta_{33}NBMS_{ij} + \beta_{34}SBMS_{ij} + \beta_{35}CR3 + \Delta X + \varepsilon_{3ij} \quad (4.9)$$

To validate the causal link between respective dependent variables and the independent variables in these models, this study analysed a time-lagged model in which marketing performance data from 2012 were used to predict the pricing strategy of SBLs in 2013. Furthermore, as the previous year's marketing performance may to some extent affect the packaging positioning strategy in the subsequent year and the affected part further exerts an influence on the pricing strategy of the corresponding SBL, there might be a collinearity problem in the main estimation. As a solution, a regression using PS as the dependent variable, with all the other independent variables in function 1 as indicators, was conducted. Then, the estimated residuals of PS were recorded in combination with the other key indicators to test the related hypotheses.

4.7.3 Statistical model for price competition around store branded lookalikes across stores

Before testing the hypotheses of the third central research question, the indicators reflecting price and packaging similarity were transformed into weighted relative measures, including the price position of an SBL ($P\%$), the average price of all three-tiered SBs in the category that an SBL belongs to (AP), the price gap between paired SBLs (PG), the average price gap between corresponding SB pairs (APG), the packaging similarity of an SBL (PS), and the similarity gap between paired SBLs (PLG).

(i) *The relative price position*

In detail, to exclude the differences in absolute unit price across product categories, the relative pricing positions are calculated as follows:

$$P_{\bar{y}}\% = \frac{3 \times p_{\bar{y}}}{(p_{1j} + p_{2j} + p_{3j})} \times 100 \quad (4.10)$$

$P_{\bar{y}}\%$ refers to the relative price position of the SBL sold by retailer \bar{i} in category j ; $p_{\bar{y}}$ represents the absolute average price of the SBL sold by retailer \bar{i} in category j . $(p_{1j} + p_{2j} + p_{3j})$ is the sum of the absolute average price of all three SBLs in category j .

(ii) *The average price* including all three-tiered SBs sold in a category by a retailer is measured as follows:

$$AP_{\bar{y}}\% = \frac{3 \times ap_{\bar{y}}}{(ap_{1j} + ap_{2j} + ap_{3j})} \times 100 \quad (4.11)$$

$AP_{\bar{y}}\%$ refers to the relative price position of all SBs sold by retailer \bar{i} in category j ; $ap_{\bar{y}}$ refers to the absolute average price of all SBs sold by retailer \bar{i} in category j ; and $(ap_{1j} + ap_{2j} + ap_{3j})$ is the sum of the absolute average price of all SBs sold by the three retailers in category j .

After the two manipulations, the relative price positions of the SBLs and all three-tiered SBs in the 75 product categories among the three retailers are shown in Figure 4.1.

(iii) the price gap between SBLs

In a similar vein, this indicator is measured as follows:

$$PG_{ij} \% = \frac{3 \times (p_{ij} - p_{kj})}{(p_{1j} + p_{2j} + p_{3j})} \times 100 \quad (4.12)$$

$PG_{ij} \%$ refers to the relative position of the price gap that between two SBLs produced by retailer i and k in category j ; $(p_{ij} - p_{kj})$ refers to the absolute price gap between two SBLs produced by retailer i and k in category j ; and $(p_{1j} + p_{2j} + p_{3j})$ is the sum of the absolute average price of all three SBLs in category j .

The distributions of the price gaps between every two SBLs in the 75 product categories are displayed in Figure 4.2.

(iv) the average price gaps, including all three-tiered SBs in a category, are measured as follows:

$$APG_{ij} \% = \frac{3 \times (ap_{ij} - ap_{kj})}{(ap_{1j} + ap_{2j} + ap_{3j})} \times 100 \quad (4.13)$$

$APG_{ij} \%$ refers to the relative position of the price gap that between two SBs produced by retailer i and retailer k in category j ; $(ap_{ij} - ap_{kj})$ refers to the absolute price gap of two SBs produced by retailer i and retailer k in category j ; and $(ap_{1j} + ap_{2j} + ap_{3j})$ is the sum of the absolute average price of all SBs produced by the three retailers in category j .

(v) Packaging similarity

In similarity tasks, the participants' reactions show some habituation. Some individuals tend to avoid extreme scores, and their rates may gathered in the middle for all rating tasks, but others would give extreme rates, and their scores may skew to the left or right of the overall scale (Johnson *et al.* 1990; Bijmolt *et al.* 1998). To deal with the influence of prototypical differences among individuals in dealing with the similarity judgment tasks, we transformed the similarity into relative measures:

$$PS_{kij} = \frac{3 \times ps_{kij}}{(ps_{k1j} + ps_{k2j} + ps_{k3j})} \quad (4.14)$$

PS_{kij} refers to the relative similarity position of the SBL sold by retailer i in category j judged by participant k . ps_{kij} refers to the absolute similarity of the SBL sold by retailer i in category j judged by participant k . $(ps_{k1j} + ps_{k2j} + ps_{k3j})$ refers to the sum of the absolute similarity of all three SBLs in category j judged by participant k .

The distributions of the relative similarity of the 225 SBLs in 75 product categories from the three retailers are displayed in Figure 4.3.

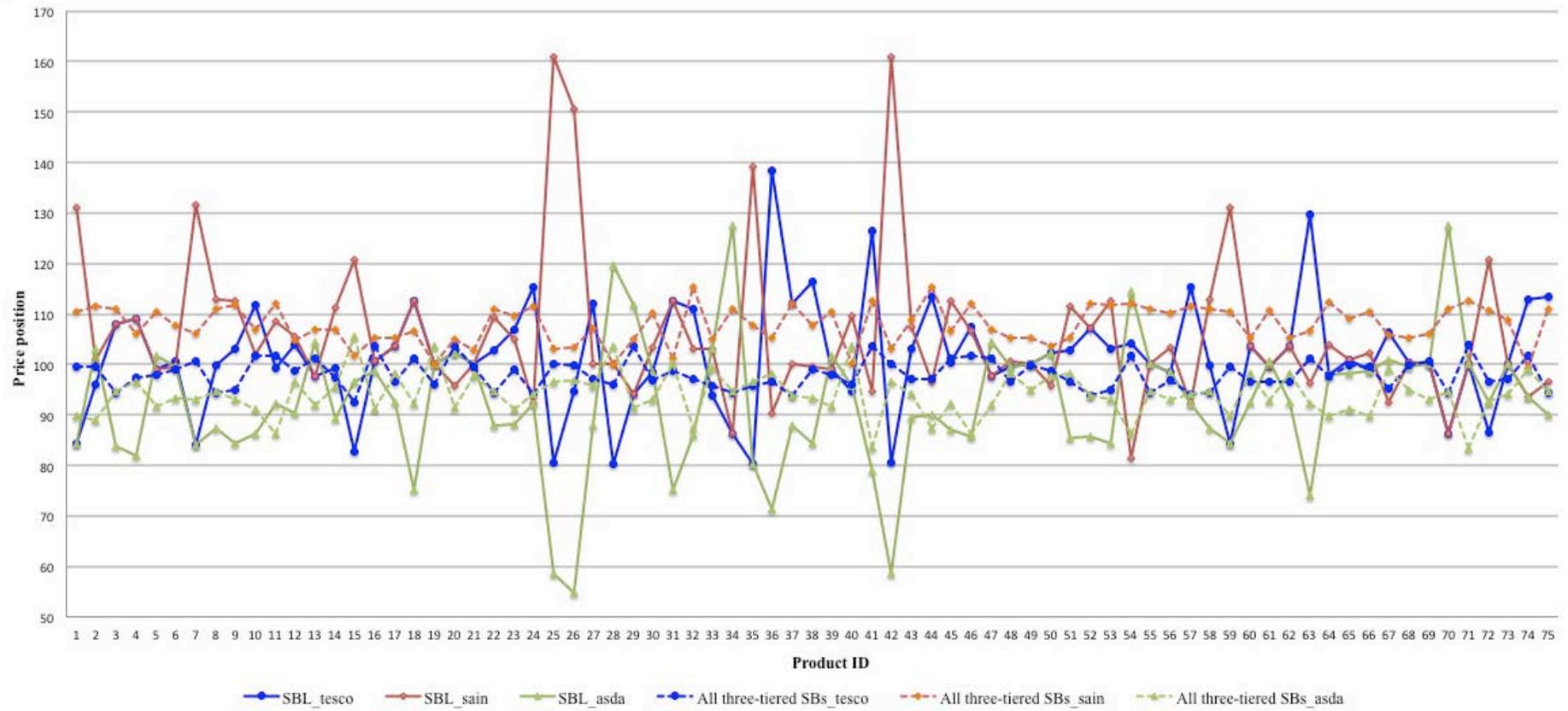


Figure 4.1 Average prices of the SBLs and all three-tiered SBs in the three retail stores

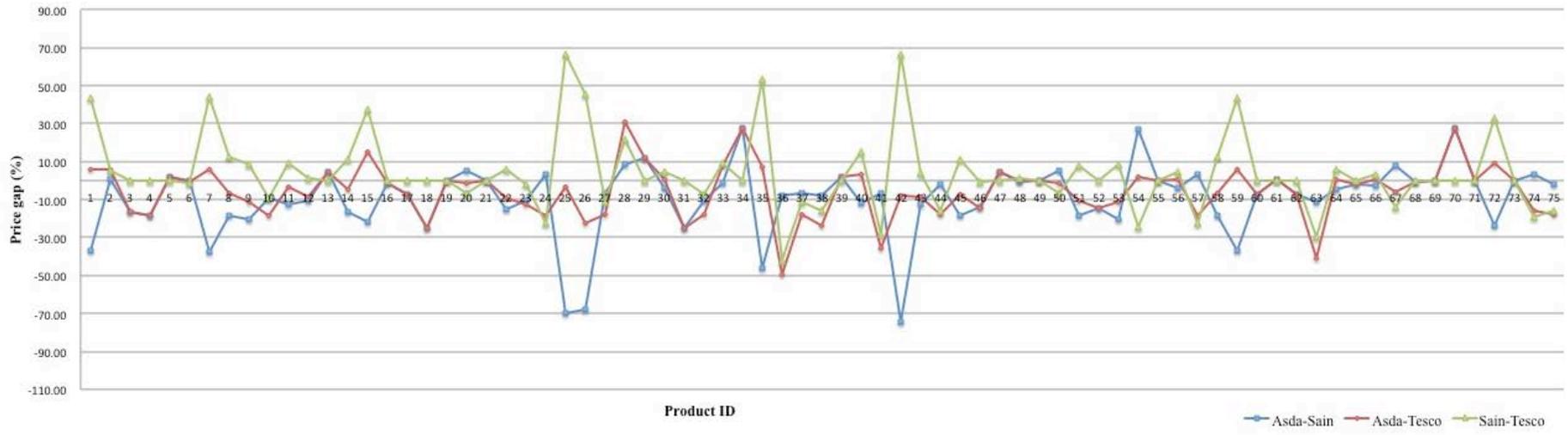


Figure 4. 2 Price gap between the SBLs in the three retail stores

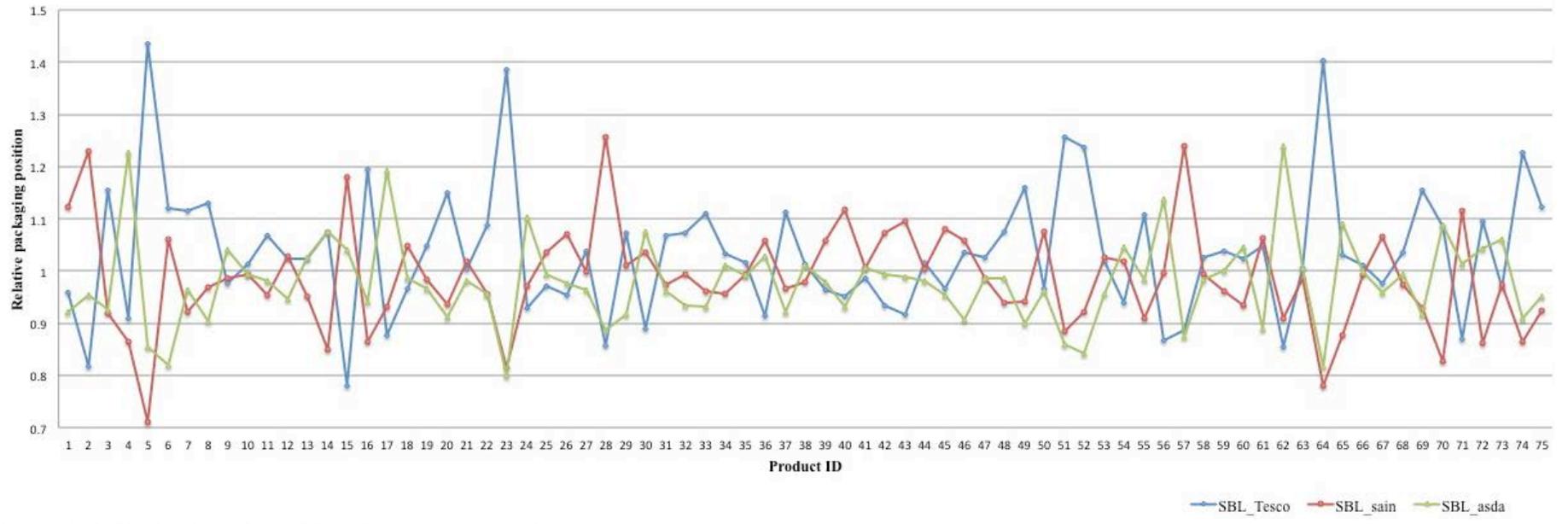


Figure 4. 3 Similarity of the SBLs in the three retail stores

(vi) the similarity gaps were calculated as follows:

$$PSG_{kij} \% = \frac{3 \times (ps_{ki} - ps_{kj})}{(ps_{k1j} + ps_{k2j} + ps_{k3j})} \times 100 \quad (4.15)$$

$PLG_{kij} \%$ refers to the relative position of the similarity gap that between SBL i and SBL l in category j judged by participant k ; $(ps_{ki} - ps_{kj})$ refers to the absolute similarity gap between SBL i and SBL l in category j judged by participant k ; and $(ps_{k1j} + ps_{k2j} + ps_{k3j})$ is the sum of the absolute similarity of all three SBLs in category j judged by participant k .

Then, two models were developed to test corresponding hypotheses.

(i) *SBLs' Pricing Model*

The *Pricing Model*, with the price position of an SBL sold by retailer i in category j ($P_{ij} \%$) as the dependent variable, is as follows:

$$P_{ij} \% = \alpha_1 + \beta_{11} PS_{ijk} + \beta_{12} PF_{ij} + \beta_{13} VPT_{ij} + \beta_{14} MS_{ij} + \beta_{15} PEN_{ij} + \beta_{16} CR_j + \Delta X_1 + \varepsilon_{1ij} \quad (4.16)$$

PS_{ijk} refers to the relative similarity of the SBL sold by retailer i in category j judged by respondent k ; PF and VPT denote the purchase frequency and volume purchased per trip of the SBs sold in the category by a retailer, respectively⁵; MS stands for the market share of the SBs⁶; PEN is the penetration of the SBs; CR is the concentration ratio of all SBs sold by the three retailers in the category; X_1 is the matrix including all control variables and Δ is the corresponding vector of coefficients.

The primary aim of this model is to test how the packaging similarity of an SBL

⁵ The original values of these two indicators are measured at retailer level in the dataset, which depends on how many customers each retailer has (i.e. the penetration of the retailer). So regardless of the product, a retailer with a higher penetration will always have higher purchase frequency and purchase volume per trip than the other retailers. To account for this correlation, following *Batra et al.* (2000) and *ter Braak, Dekimpe and Geyskens* (2013), we estimated the portion of these two indicators explained by the penetration and included the remaining part that is not attributed to the penetration (i.e. the residuals) instead of the original measures to circumvent potential multicollinearity.

⁶ The original values of this indicator are highly correlated with the penetration of the retailer's SBs in the category ($r = .60$). To exclude this influence, a manipulation similar to that performed for purchase frequency was repeated. The SB market share was regressed on penetration and only the residual was recorded and used in hypotheses testing.

influences its pricing strategy. To validate the causal link between these two variables, this study analysed a time-lagged model in which marketing performance data from 2012 were used to predict the pricing strategy of SBLs in 2013. Furthermore, as the previous year's marketing performance may to some extent affect the packaging positioning strategy in the subsequent year, and the affected part further exerts an influence on the pricing strategy of corresponding SBLs, there might be a collinearity problem in the main estimation. As a solution, a regression using *PL* as the dependent variable with all the remaining independent variables in function 4.1 as indicators was conducted. Then, the estimated residuals of *PL* were recorded in combination with the other key indicators to test the related hypotheses.

(ii) *SBLs' Price Competition Model*

The *Price Competition Model*, using the price gap between paired SBLs *i* and *k* in category *j* ($PG_{ikj} \%$) as the dependent variable, is as follows:

$$PG_{ikj} \% = \alpha_{2j} + \beta_{21} PSG_{ikjl} + \beta_{22} PFG_{ikj} + \beta_{23} VPTG_{ikj} + \beta_{24} MSG_{ikj} + \beta_{25} PENG_{ikj} + \beta_{26} CR_j + \Delta X_2 + \varepsilon_{2j} \quad (4.17)$$

PSG_{ikjl} refers to the relative position of the similarity gap between SBL *i* and SBL *k* in category *j* judged by respondent *l*; *PFG* denotes the gap of purchase frequency of paired SBs and *VPTG* represents the gap in volume purchased per trip of paired SBs⁷; *MSG* stands for the gap of market share between paired SBs; *PENG* is the penetration gap of paired SBs; *CR* is the concentration ratio of SBs sold by all three retailers in category *j*. X_2 is the matrix including all control variables and Δ is the corresponding vector of coefficients.

This model aims to examine how two retailers *i* and *k* compete on the price of paired SBLs in category *j* with each other. Once again, to account for the possible influence of the previous year's marketing performance variance on packaging positioning strategies between two SBLs in the subsequent year, which further affects the price competition between the two, a manipulation similar to that in the pricing strategy model was applied once again. Only the residuals of *PLG*, which were

⁷ Similar manipulations to that on *PF* and *VPT* were repeated for these two indicators.

generated after regressing them by all the other independent indicators in function 4.2, were included for the main estimation.

Chapter 5 Data Analysis and Discussion

5.1 Introduction

Upon completion of literature review, framework establishment, methodological choice statement, this chapter interprets the statistical outcomes. The three research objectives were firstly to find out how consumers judge packaging similarity in facing SBLs, secondly to find out how the packaging similarity of SBLs affect the price competition between these SBLs and the targeted NBs, and finally to find out how the packaging similarity of SBLs affect the price competition among rival SBLs. Various studies involving multiple indicators were conducted to collected data. Therefore this chapter presents the results grouped on these three key objectives.

The rest of the chapter consists of four sections. Section 5.2 describes the statistical analysis and findings explaining how consumers perceive the packaging similarity of SBLs. Following, Section 5.3 shows the statistical process and results reflecting the price competition between SBLs and the targeted NBs. Then, Section 5.4 explains the statistical estimation and outcomes addressing from the cross competition perspective that how rival SBLs compete with each other on their prices. Finally, Section 5.5 presents the discussion on the findings, which is grouped into three subsections correlated to the three research objectives.

For an overview, as discussed in Chapter 3 and Chapter 4, the developed hypotheses each matched with a research question and the data source of empirical evidence is summarized in Table 5.1 as follows:

Table 5.1 Hypotheses matched with testing sources

Hypotheses	Question addressed	Empirically tested in
H1: The similarity of size & shape has a positive effect on perceived similarity.	Q1	Study 1
H2: The similarity of image has a positive effect on perceived similarity.	Q1	Study 1
H3: The similarity of colour has a positive effect on perceived similarity.	Q1	Study 1
H3a: The similarity of colour has the most significant effect on perceived similarity compare to size and shape, and image.3.2.3 Information accessibility theory	Q1	Study 1
H4: Consumers' brand loyalty has a negative	Q1	Study 2

effect on perceived similarity.

H5: Consumers' brand familiarity has a positive effect on consumers' brand loyalty.	Q1	Study 2
H6: Consumers' brand loyalty negatively moderates the effect of brand familiarity on perceived similarity.	Q1	Study 2
H7: Store image has a positive effect on perceived similarity.	Q1	Study 2
H8: The higher packaging similarity an SBL has to the targeted NB, the narrower the price gap between respective SBL and NB will be.	Q2	Combined dataset (sourced from Study 3 and two secondary datasets)
H9: The higher packaging similarity an SBL has to the targeted NB, the higher the retail price of this SBL will be.	Q2	Combined dataset
H10: The higher packaging similarity an SBL has to the targeted NB, the lower the retail price of the targeted NB will be.	Q2	Combined dataset
H11: The stronger the market strength of the targeted NB, the wider the price gap between the respective SBL and NB will be.	Q2	Combined dataset
H12: The stronger the overall market strength of SBs, the narrower the price gap between the respective SBL and NB will be.	Q2	Combined dataset
H13: The more concentrated the market strength of the NBs, the narrower the price gap between the respective SBL and NB will be.	Q2	Combined dataset
H14: The higher the SBL's packaging similarity, the higher their retailing price.	Q3	Combined dataset
H15: The higher the difference in paired SBLs' packaging similarity, the bigger the price gap between them.	Q3	Combined dataset
H16: The higher the SB familiarity, the lower the SBL's retailing price.	Q3	Combined dataset
H17: The higher the difference in paired SBs' familiarity, the smaller the price gap between their corresponding SBLs.	Q3	Combined dataset
H18: The stronger the retailer's market strength, the lower its SBLs' retailing price.	Q3	Combined dataset
H19: The higher the difference in retailers' market strength, the smaller the price gap between their corresponding SBLs.	Q3	Combined dataset

H20: The higher the SBs' concentration ratio, the higher the retailing price of the corresponding SBL.	Q3	Combined dataset
H21: The higher the SBs' concentration ratio, the bigger the price gap between the corresponding SBLs.	Q3	Combined dataset

5.2 Consumer perceptions on packaging similarity of store branded lookalikes

The set of hypotheses relating consumer perceptions on packaging similarity of SBLs were tested on the basis of data collected in two studies. Study 1 tested the perceived similarity of the product packaging per se and assessed the relative importance of packaging attributes on perceived similarity (H1 – H3, H3a). Study 2 considered how some subjective factors might affect the perception process; it examined the hypotheses derived from consumers' characteristics (H4, H5 and H6) and retailer characteristics (H7).

5.2.1 Study 1: relative importance of packaging elements

We posit that SBLs with higher similarity in these three attributes are perceived to be more similar to the targeted NB (H1, H2, H3); we also posit that colour is the most important packaging element that affects the perceived similarity (H3a). We analysed the participants' perceived similarity in two ways. First, we drew on the basic descriptive statistics to explore the general relationship between packaging attributes and perceived similarity. We then established the nature of the relationship between them through econometric analysis to test the various hypotheses relating to packaging attributes.

(iii) Manipulation check

Based on manipulation checks (Table 5.2, Figure 5.1 and Figure 5.2), we can see that colour exerts the most important influence on perceived similarity among the three packaging attributes across the two product categories studies. As compared with the original packaging, perceived similarity degrees show the most significant decrease when the colour of the product packaging was changed ($M_o = 3.02, SD = 1.72$; $M_c = 2.04, SD = 1.34$; $M_s = 2.28, SD = 1.49$; $M_l = 2.64, SD = 1.55$). In

contrast, image seemed to be the least important factor that influenced the degree of similarity, for a decrease in the image similarity resulted in the smallest decrease in overall packaging similarity, both in the case of ketchup and potato crisps.

Table 5.2 Descriptive statistics of Study 1 (N=380)

Treatment conducted ^a	Consolidated		Ketchup		Crisps	
	Mean	SD	Mean	SD	Mean	SD
T1: Original (O)	3.02	1.72	3.86	1.61	2.19	1.39
T2: Colour changed (C)	2.04	1.34	2.38	1.33	1.69	1.26
T3: Size & shape changed (S)	2.28	1.49	2.73	1.58	1.83	1.23
T4: Image changed (I)	2.64	1.55	3.11	1.56	2.17	1.40

Notes: ^a Dependent variable is the perceived similarity of an SBL to the targeted NB.

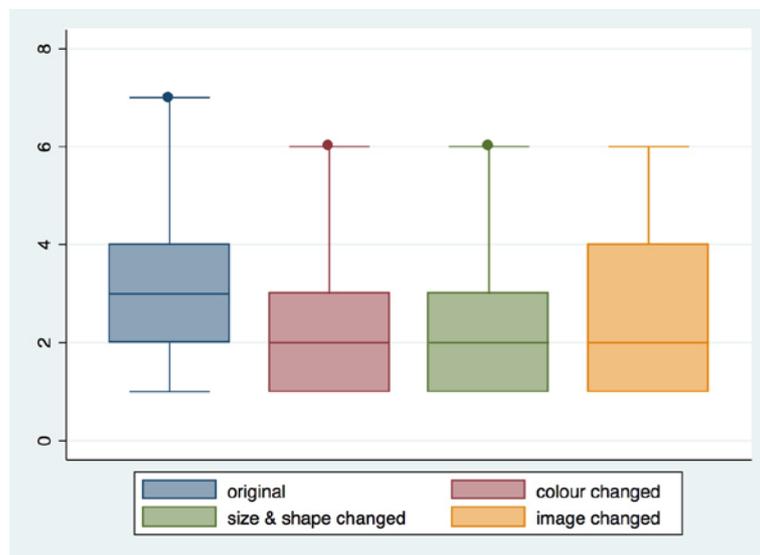


Figure 5.1 Perceived similarity in different treatments_a (Study 1) ^a

Notes: ^a This figure is generated on product category basis.

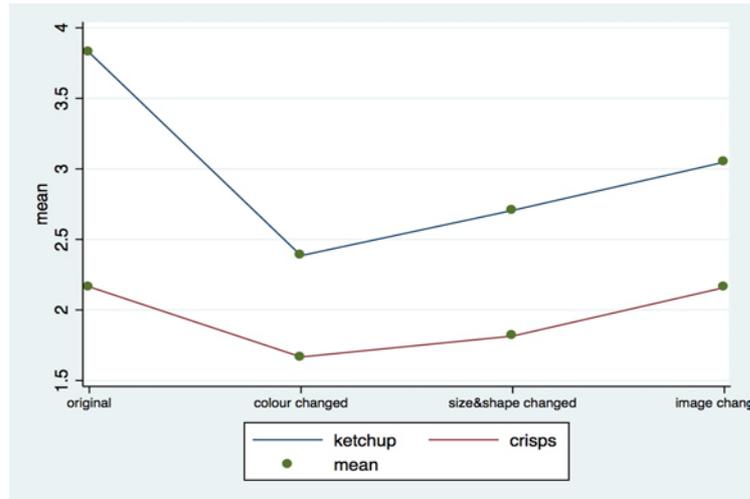


Figure 5.2 Perceived similarity in different treatments_b (Study 1) ^a

Notes: ^a This figure is drawn on whole observation pool including both two product categories used in study 1

(iv) *Hypotheses testing*

The statistical significances of the hypothesised relationship between the packaging elements and perceived similarity were further examined by an ordered logit regression analysis. H1, H2 and H3 predicted a positive relationship between similarity in respect of size and shape, image, and colour and perceived similarity. Put the other way around, compared to high similarity, lower similarity in these packaging aspects would yield lower overall perceived similarity for the SBL. These three hypotheses are supported as statistically significant negative coefficient estimates were gained for the effects of decreased similarity of the three elements separately, which were all compared with the baseline in which the similarity degree is relative higher regarding the three aspects (see Table 5.3, $\beta_{size\&shape} = -1.02$, $\rho < .001$; $\beta_{image} = -.46$, $\rho < .001$; $\beta_{colour} = -1.38$, $\rho < .001$). We can see that, when only the perceived similarity of colour changes from a high to a low degree (the two levels manipulated in the experiment), this results in a 1.38 decrease in the log odds of being a higher overall perceived similarity. Similar explanations are applicable to the coefficients for size and shape, and image. Furthermore, we posit that among the three packaging attributes, colour exerts the most important influence on consumers' perceived similarity (H3a). This proved to be the case as the three coefficient

estimates obtained from the ordered logit regression showed that the rank of relative importance was firstly the colour, followed by the size and shape, and finally the image, which seemed to be least effective element among the three. Table 5.3 summarises the statistics.

Table 5.3 Estimations of Study 1

Independent Variables	M1		M2		M3		
	Base Model		Focal Model		Full Model		
	Coef.	z-value	Coef.	z-value	Coef.	z-value	
Dependent variable: Overall packaging similarity							
β_{colour}	Colour ^a	-1.31***	-12.06	-1.31***	-12.02	-1.38***	-10.70
$\beta_{size\&shape}$	Size & shape ^a	-.96***	-9.55	-.96***	-9.42	-1.02***	-8.75
β_{image}	Image ^a	-.44***	-5.46	-.44***	-5.42	-.46***	-5.18
	Product type ^b						
β_{crisps}	Crisps	-1.46***	-13.19	-1.47***	-13.15	-1.61***	-12.68
β_{bf}	Brand familiarity			-.05	-1.02	-.03	-.47
β_{bs}	Whether buy SBs as substitutes			-.02	-.31	.04	.66
β_{sf}	Shopping frequency			-.05	-.63	-.04	-.43
	Age ^c						
β_{age1}	30-39					.05	.16
β_{age2}	40-49					-.25	-.79
β_{age3}	50 and above					-.07	-.19
β_{fe}	Female ^d					.48*	2.04
β_{psh}	Primary shopper ^e					-.29	-.94
	Education ^f						
β_{edu1}	A-level					.68	1.74
β_{edu2}	College diploma					.74**	2.12
β_{edu3}	Undergraduate degree					1.07***	3.69
β_{edu4}	Post-graduate or higher degree					1.52***	4.34
	Household gross income ^g						
β_{gin1}	£10,000-£19,999					.34	.80
β_{gin2}	£20,000-£29,999					.88**	1.99
β_{gin3}	£30,000-39,999					.36	.72
β_{gin4}	£40,000-£49,999					-.01	-.01
β_{gin5}	£50,000 or above					.40	.80

Notes: * p<.1, ** p<.05, *** p<.001

^a The coefficient indicates the log odds change in overall perceived similarity when the perceived similarity of corresponding attribute decreases from high (Treatment 0) to low (the given treatment), given all of the other variables in the model are held constant; ^b Compares to the baseline “Ketchup”; ^c Compares to the baseline “20-29”; ^d Compares to the baseline

“male”; ^e Compares to the baseline “non-primary shopper”; ^f Compares to the baseline “GCSE (or school leaver at 16)”; ^g Compares to the baseline “£999 or less”.

We examined the robustness of our logit regression model in two ways: changing our sample composition, and conducting a linear regression – Table 5.4 presents the results of the robustness checks. Based on product categories, we divided our data into two sub-sets and conducted ordered logit regressions separately for each sub-set (estimations shown in Table 5.4, *M3a*). Sound statistical support for the hypotheses regarding colour, size and shape were found from the outcome of the ketchup ($\beta'_{colour} = -1.69, \rho' < .001$; $\beta'_{size\&shape} = -1.39, \rho' < .001$; $\beta'_{image} = -.81, \rho' < .001$), and although these hypotheses were statistically significant in the case of crisps ($\beta''_{colour} = -1.10, \rho'' < .001$; $\beta''_{size\&shape} = -.65, \rho'' < .001$), the positive effect of the image on this packaging on the overall similarity was not statistically significant ($\beta''_{image} = -.10, \rho'' > .1$). Stable results as the ordered logit regression were yielded by the OLS linear regression (estimations in Table 5.4 *M3b*, where $\beta'''_{colour} = -.93, \rho''' < .001$; $\beta'''_{size\&shape} = -.71, \rho''' < .001$; $\beta'''_{image} = -.36, \rho''' < .001$) and also Poisson regression (estimations in Table 2.5 *M3c*, where $\beta_{colour}'''' = -.39, \rho'''' < .001$; $\beta_{size\&shape}'''' = -.28, \rho'''' < .001$; $\beta_{image}'''' = -.13, \rho'''' < .001$), which provides other ways to consider the relative importance of the three attributes on perceived similarity.

Table 5.4 Robustness Checks of Study 1

Independent variables	<i>M3a</i>				<i>M3b</i>		<i>M3c</i>	
	Alternative sample				OLS model		Poisson model	
	Ketchup		Crisps		Coef.	t-value	Coef.	t-value
Dependent variable: Overall packaging similarity								
β_{colour} Colour ^a	-1.69***	-8.66	-1.10***	-4.92	-.93***	-9.19	-.39***	-9.20
$\beta_{size\&shape}$ Size & shape ^a	-1.39***	-6.78	-.65***	-3.11	-.71***	-6.74	-.28***	-6.72
β_{image} Image ^a	-.81***	-4.34	-.10	-.52	-.36***	-3.40	-.13***	-3.42
Product type ^b								
β_{crisps} Crisps					-1.05***	-14.49	-.44***	-14.43
β_{bf} Brand familiarity	.01	.27	-.07	-1.50	.01	.49	.01	.58
β_{bs} SBs as substitutes	.03	.57	.06	.91	.03	1.02	.01	1.01
β_{sf} Shopping frequency	-.01	-.11	-.08	-1.19	-.01	-.17	.00	-.15
Age ^c								
β_{age1} 30-39	.11	.45	.01	.03	-.05	-.42	-.01	-.30

β_{age2}	40-49	-.13	-.54	-.34	-1.51	-.17	-1.43	-.06	-1.31
β_{age3}	50 and above	-.01	-.04	-.12	-.48	-.04	-.32	-.01	-.26
β_{fe}	Female ^d	.40**	2.65	.60**	3.31	0.29**	3.43	.12***	3.49
β_{inh}	Primary shopper ^e Education ^f	.05	.26	-.69**	-3.22	-.13	-1.33	-.05	-1.32
β_{edu1}	A-level	.62*	2.06	.88**	2.85	.39**	2.76	.18**	2.91
β_{edu2}	College diploma	.56*	2.19	1.07***	3.76	.40**	3.40	.19***	3.55
β_{edu3}	Undergraduate degree	.82***	3.59	1.54***	6.24	.64***	6.42	.29***	6.34
β_{edu4}	Post-gradu or higher degree Household gross income ^g	1.27***	4.81	1.95***	7.15	.99***	8.15	.42***	8.37
β_{gin1}	£10,000-£19,999	.10	.35	.59	1.90	.18	1.25	.07	1.18
β_{gin2}	£20,000-£29,999	.56	1.82	1.25***	3.94	.51***	3.35	.21**	3.31
β_{gin3}	£30,000-39,999	.19	.57	.59	1.65	.27	1.68	.11	1.67
β_{gin4}	£40,000-£49,999	-.21	-.55	.19	.46	.09	.46	.03	.42
β_{gin5}	£50,000 or above	.31	.94	.48	1.42	.21	1.31	.08	1.26

Notes: * p<.1, ** p<.05, *** p<.001

^a The coefficient indicates the log odds change in overall perceived similarity when the perceived similarity of corresponding attribute decreases from high (Treatment 1) to low (the given treatment), given all of the other variables in the model are held constant; ^b Compares to the baseline “Ketchup”; ^d Compares to the baseline “20-29”; ^c Compares to the baseline “male”; ^d Compares to the baseline “non-primary shopper”; ^e Compares to the baseline “GCSE (or school leaver at 16)”; ^g Compares to the baseline “£999 or less”.

The results from study 1 provide strong empirical evidence for the first four hypotheses we developed between the similarity of the three packaging attributes, namely colour, size and shape, and image, and the overall perceived similarity. Packaging with low similarity in terms of colour, size and shape, or image, were judged to be of lower similarity overall. Meaningfully, colour is shown to be the most significant packaging attribute that determines the overall perceived similarity.

5.2.2 Study 2: consumers’ characteristics and retailer characteristics

Structural equation modelling using Mplus 7 was applied to test the hypothesised model of study 2. We employed a two-step analytic procedure according to Anderson and Gerbing (1988): the measurement part of the model was first tested using confirmatory factor analysis, and then the structural model part was estimated to test the four hypotheses developed relating to contextual influences (H4-H7).

(i) *Measurement model test*

There were three latent variables (*Brand Familiarity*, *Brand Loyalty* and *Store Image*). The results of the confirmatory factor analysis (CFA) indicated that the original measurement model did not fit the data adequately ($\chi^2(51, N = 1036) = 858.62$, $\rho < .001$, $RMSEA = .124$ (90% low CI limit = .116 and 90% upper CI limit = .131), $CFI = .988$, $TLI = .984$, $SRMR = .09$). Based on a systematic examination of the factor loadings and modification indices, several items were removed in further CFA. In detail, the third item on *Brand Loyalty* “In general, I am loyal to ** (the NB)” was removed because it has a relatively lower factor loading, while the number and magnitude of the modification indices show that it has high cross-loadings with the other two latent variables. In a similar vein, two items relating to *Store Image* (the item about convenience and the item describing general image perception) were also deleted, either because of relative lower factor loading or having too close a factor loading to another item measuring the same latent variable. The modified model shows a better fit of the data, as indicated by the goodness-of-fit statistics from a second CFA (CFA ($\chi^2(15, N = 1036) = 35.67$, $\rho < .001$, $RMSEA = .04$, (90% low CI limit = .02 and 90% upper CI limit = .06), $CFI = .999$, $TLI = .999$, $SRMR = .03$). All AVEs were greater than .5 which fulfils convergent validity. The fact that all these values are higher than the corresponding squared correlations between variables demonstrates a strong discriminant validity of the structure. The values displayed in Table 5.5 show that all the composite reliabilities were above the recommended cut-off criterion (.8). See Appendix 2 for the Mplus code.

Table 5.5 Item and scale measurement properties of Study 2

	CR	AVE	Standardized factor loadings*
Brand familiarity	.953	.871	
<i>For me, ** (the NB) represents a brand that I know very well</i>			
Overall, I think myself very well informed about ** (the NB)			.971
In general, I consider myself very familiar with ** (the NB)			.930
I am experienced with ** (the NB)			.897

Brand loyalty	.818	.701	
If ** (the NB) is not available at the store, it will make little difference to me to buy a different one			.652
When another brand is on sale, I generally purchase it instead of ** (the NB)			.988
<i>In general, I am loyal to ** (the NB)</i>			
Store image	.862	.681	
I shop at ** (Store name) because of its low prices			.742
I shop at ** (Store name) because of the high quality of its products			.986
I shop at ** (Store name) because of the high level of service and facility provided			.722
<i>I shop at ** (Store name) because of the store's convenience</i>			
<i>I shop at ** (Store name) because of the store's image</i>			

Notes: Italicised items were removed in the structure analysis

All significant at $p < .001$, except the item interpreting service to measure the store image where $p < .05$

(ii) Structural model and hypotheses test

Our composed structural model includes both mediating and moderating effects. Since Mplus does not provide the traditional model fit indices used to evaluate structural equation modelling for a latent moderated structural (LMS) model, this study follows the analytic procedure developed by Maslowsky *et al.* (2014). We first tested the initial model with mediation but without the moderating path (*M20*). This model shows a good fit to the data ($\chi^2(21, N=1036) = 77.03$, $RMSEA = .05$, $CFI = .995$, $TLI = .991$, $SRMR = .05$). Then, in a second model (*M21*) we included the moderating path. By comparing the log-likelihood values of *M20* and *M21*, we obtained the relative model fit of *M21* versus *M20*. The log-likelihood difference value $D = -37.8^8$, while the difference in free parameter equals 1. According to the chi-square distribution, this log-likelihood ratio proved significant ($p < .001$); interpreting that the model fit of *M21* achieved a significant increase compared to the initial model without the interaction path (the *M20*). Nevertheless, the interaction path failed to meet statistical significance given the increase in the overall model fit. As the moderating effect was not significant, we used the estimates obtained from *M20* to interpret our hypotheses test (see Figure 5.3).

⁸ $D = -2[(\text{log-likelihood for } M20) - (\text{log-likelihood for } M21)]$

In support of H4, brand loyalty has a negative impact on perceived similarity ($\beta_{bl} = -.16, \rho < .01$). H5 was also retained ($\beta_{bf}' = .17, \rho < .01$), thus suggesting that consumers' familiarity with the brands would exert a positive influence on their loyalty to the brands. Then in H6 we posited that consumers' brand loyalty will have a moderating effect on the relationship between the brand familiarity and their perceived similarity when facing lookalike SBs. This proposition was rejected as indicated by the insignificant statistics. In the last hypothesis, H7, the positive influence of store image on perceived similarity was shown to be statistically significant ($\beta_{si} = .08, \rho < .05$).

To account for possible confounding effects, we incorporated the various demographic and socio-graphic variables as control variables on the basis of *M20* and examined a third model. Among the five control variables, age and education level seemed to have significant influences on consumers' perceived similarities. Specifically, senior consumers perceive the SBLs to be less similar than younger consumers ($\beta_{age} = -.08, \rho < .001$), and more educated consumers judge the SBLs to be more similar to the NBs ($\beta_{edu} = .14, \rho < .001$). As consumers become more educated, they are less depending on the brand name but intrinsic quality of the product in their purchase decision. Given the increased public acceptance on the quality of SBs, this stream of consumers is more likely to follow an assimilation path in the similarity judgment process, thus perceive the SBLs to be more similar to their targeted NBs.

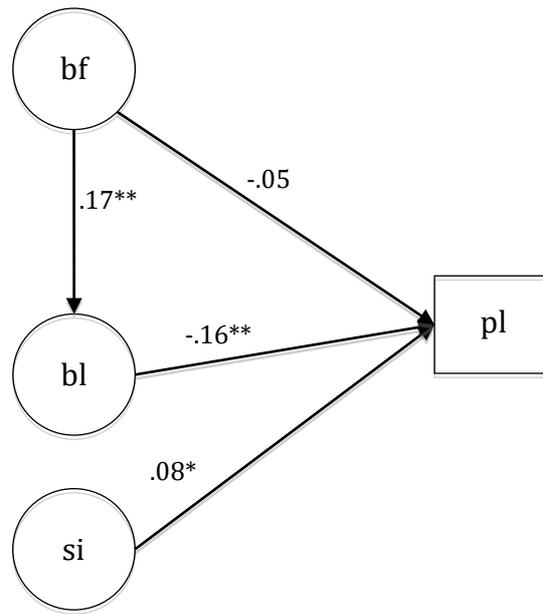


Figure 5.3 Structural model results (standardized) of Study 2

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$;

pl: “perceived similarity”, bf: “brand familiarity”, bl: “brand loyalty”, si: “store image”.

5.3 Price competition around store branded lookalikes within stores

The set of hypotheses proposing the within store competition between retailers and NB manufactures around lookalikes (i.e. the price competition between SBLs and the NBs that being targeted) were tested using a combined dataset sourced from Study 3 and the two secondary datasets (H8-H13).

5.3.1 Overall descriptive results

Table 5.6 shows the descriptive statistics and correlations between the key variables in this research. None of the VIF statistics exceeded 5 in this analysis, indicating that multicollinearity is not an issue in this model.

Table 5.6 Correlation matrix and descriptive statistics

Key variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Price gap	1.00												
2 Unit price of targeted national brand (NB)	.26	1.00											
3 Unit price of store branded lookalikes (SBLs)	-.36	.21	1.00										
4 Relative packaging similarity of SBLs	-.04	-.01	.09	1.00									
5 Targeted NB's sales turnover change	.08	.00	.00	.00	1.00								
6 Targeted NB's market share	.07	.00	.00	.00	-.22	1.00							
7 SBs' aggregate market share	-.22	.00	.00	.00	-.02	-.15	1.00						
8 Top 3 NBs' concentration ratio	-.03	.00	.00	.00	-.26	.68	-.39	1.00					
9 Purchase frequency of SBs ^a	-.03	-.04	.05	-.04	-.33	.02	.14	-.02	1.00				
10 Volume purchased per trip of SBs ^a	.20	-.03	-.02	-.01	-.02	.24	-.08	.21	.34	1.00			
11 Average price of SBs	-.08	.13	.35	.04	.00	.00	.00	.00	.22	-.02	1.00		
12 Penetration of SBs	-.11	.10	-.03	.05	.00	-.08	.10	-.09	.00	.00	-.27	1.00	
13 Aggregate market share of SBs from all three retailers	.09	.00	.00	.00	.04	.24	-.24	.27	-.04	-.14	.00	.08	1.00
Mean	44.02	100 ^b	100 ^b	1.00 ^b	40.34	20.38	21.18	47.97	.00	.00	100	34.69	58.84
Std. Dev.	14.93	9.00	12.52	0.18	127.06	20.42	12.59	22.99	2.17	1.75	7.19	12.74	5.99

Notes: All correlation in bold are significant at the level of 5% (two-sided).

^a For these two variables, their residual that are not attribute to penetration of corresponding retailer (see footnote 4 for detailed explanation) were included; therefore, 0 correlation are found between these three variables and penetration.

^b For these three variables, the mean 100 and 1 were generated due to transfer of absolute observations to relative values.

5.3.2 Model comparison

To ensure the explanatory power of the *Full Model* (**M6**) of the price competition model (reflected in function (4.7)), it was compared with a *Base Model* (**M4**) and an *Extended Model* (**M5**). **M4** considers only the influence of the packaging similarity on the pricing strategy, the dummies indexing product categories, the food types and retailers. On the basis of this model, **M5** also considers the pricing effects of manufacturer characteristics and categorical characteristics, and then in **M6** all the control variables are included. The explanation power of **M6** ($R^2 = 27.02$) shows a significant improvement over **M5** ($R^2 = 20.76$) and **M4** ($R^2 = 16.16$). Consistently, all three models support the hypothesis that there exists a negative relationship between packaging similarity of SBLs and the price gap between paired SBLs and NBs. Table 5.7 compares the analysis results of these models. As an extra consideration, we rescaled the variables in each model following Gelman (2008) for the purpose of comparing the relative importance of the various factors investigated in this research⁹. Specifically, the numeric variables were rescaled by subtracting the mean and then dividing by two times of their standard deviations, and the binary variables were centred by subtracting their mean in the data. Table 5.8 presents the estimations after rescaling.

⁹ In order to provide direct comparison among the coefficients of different types of variables (i.e. numeric vs. binary) introduced in each of the models in this research, similar rescaling manipulations were repeated in the following analyses, and the estimations after rescaling are presented in tables following the estimation tables that are without rescaling.

Table 5.7 Estimations of Price Competition Model (N=5277)

Independent variables	<i>M4</i>		<i>M5</i>		<i>M6</i>	
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: Price gap between an SBL and the targeted NB						
<i>Product Characteristics</i>						
β_{PS} Packaging similarity	-3.45***	-6.39	-3.27***	-5.53	-3.11***	-5.44
<i>Manufacturer characteristics</i>						
β_{NSTC} Targeted NB's sales turnover change			.01***	5.43	.01***	2.87
β_{NBMS} Targeted NB's market share			.21***	10.77	.13***	7.1
<i>Categorical characteristics</i>						
β_{SBMS} SBs' aggregate market share in the category			-.14***	-6.39	-.13***	-6.04
β_{CR3} Top 3 NBs' concentration ratio			-.18***	-10.44	-.17***	-8.68
<i>Controls</i>						
β_{PF} Purchase frequency of SBs					-.14	-.55
β_{VPT} Volume purchased per trip of SBs					2.57***	13.87
β_{AP} Average price of SBs					.01***	.77
β_{PEN} Penetration of SBs					-.34***	3
β_{APM} Aggregate market share of SBs from all three retailers					.82***	18
β_{asd} Dummy Asda	3.22***	15.18	2.69***	13.09	4.24***	7.75
β_{tes} Dummy Tesco	2.83***	22.56	2.53***	17.42	9.13***	7.51
$\beta_{d\&e}$ Dummy Dairy & Egg	-12.94***	-4.66	-13.50**	*	-4.18	-21.81***
β_{fro} Dummy Frozen	-6.26***	-4.45	-5.11***	-3.37	-11.03***	-9.12
$\beta_{t\&j}$ Dummy Tines & Jars	-1.25	-.88	-4.47***	-3.33	-18.04***	-10.0
$\beta_{p\&c}$ Dummy Packets & Cereals	-1.94	-1.37	-8.76***	-4.96	-19.99***	-8.8
$\beta_{s\&s}$ Dummy Snacks & Sweets	7.68***	5.72	4.13***	3.13	-2.26	-1.58
β_{dri} Dummy Drinks	9.80***	7.40	8.11***	6.3	-10.87***	-5.66
β_{hou} Dummy Household	3.17*	2.00	.70	.47	-11.08***	-6.51
β_{foo} Dummy Food	-1.17*	-2.16	-.96*	-2.51	-2.19***	-6.32
Intercept	43.45	30.29	49.45	28.85	22.13	6.09
R-Squared	16.16		20.76		27.02	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.8 Rescaled estimations of Price Competition Model (N=5277)

Independent variables	<i>M4</i>		<i>M5</i>		<i>M6</i>	
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: Price gap between an SBL and the targeted NB						
<i>Product Characteristics</i>						
β_{PS} 'Packaging similarity	-.04***	-6.39	-.04***	-5.53	-.04***	-5.44
<i>Manufacturer characteristics</i>						
β_{BSTC} 'Targeted NB's sales turnover change			.07***	5.43	.04***	2.87
β_{NBMS} 'Targeted NB's market share			.28***	10.77	.18***	7.1
<i>Categorical characteristics</i>						
β_{SBMS} 'SBs' aggregate market share in the category			-.11***	-6.39	-.11***	-6.04
β_{CR3} 'Top 3 NBs' concentration ratio			-.27***	-10.44	-.26***	-8.68
<i>Controls</i>						
β_{PF} 'Purchase frequency of SBs					-.03	-.55
β_{VPT} 'Volume purchased per trip of SBs					.30***	13.87
β_{AP} 'Average price of SBs					.01***	.77
β_{PEN} 'Penetration of SBs					-.29***	3
β_{APM} 'Aggregate market share of SBs from all three retailers					.33***	18
β_{asda} 'Dummy Asda	.11***	15.18	.09***	13.09	.14***	7.75
β_{tes} 'Dummy Tesco	.09***	22.56	.08***	17.42	.31***	7.51
$\beta_{d\&e}$ 'Dummy Dairy & Egg	-.43***	-4.66	-.45***	-4.18	-.73***	-7.43
β_{fro} 'Dummy Frozen	-.21***	-4.45	-.17***	-3.37	-.37***	-9.12
$\beta_{t\&j}$ 'Dummy Tines & Jars	-.04	-.88	-.15***	-3.33	-.61***	7
$\beta_{p\&c}$ 'Dummy Packets & Cereals	-.06	-1.37	-.29***	-4.96	-.67***	-8.8
$\beta_{s\&s}$ 'Dummy Snacks & Sweets	.26***	5.72	.14***	3.13	-.08	-1.58
β_{dri} 'Dummy Drinks	.33***	7.40	.27***	6.3	-.36***	-5.66
β_{hou} 'Dummy Household	.11*	2.00	.02	.47	-.37***	-6.51
β_{foo} 'Dummy Food	-.04*	-2.16	-.03*	-2.51	-.07***	-6.32
Intercept	.00	.00	.01	1.57	.01	2.82
R-Squared	16.16		20.76		27.02	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

In similar vein, the estimation results of the two models testing how the packaging

similarities affect the retailing prices of SBLs and the targeted NBs are presented in Table 5.9, Table 5.10, Table 5.11 and Table 5.12.

Table 5.9 Estimations of SBL's Retailing Price Model (N=5277)

Independent variables	<i>M7</i>		<i>M8</i>		<i>M9</i>	
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: Retailing price of an SBL						
<i>Product Characteristics</i>						
β_{PS1} Packaging similarity	4.03***	5.27	4.06***	4.82	4.05***	4.84
<i>Manufacturer characteristics</i>						
β_{BSC1} Targeted NB's sales turnover change			.00	-1.55	-.00	-.84
β_{NBMS1} Targeted NB's market share			.00	-.12	.01***	6.4
<i>Categorical characteristics</i>						
β_{SBMS1} SBs' aggregate market share in the category			.00*	2.47	.00*	2.34
β_{CR31} Top 3 NBs' concentration ratio			.00	-0.22	.00	.17
<i>Controls</i>						
β_{PF1} Purchase frequency of SBs					-.09	-1.07
β_{VPT1} Volume purchased per trip of SBs					-.14***	-5.56
β_{AP1} Average price of SBs					-.06*	-2.21
β_{PEN1} Penetration of SBs					.02***	8.31
β_{APM1} Aggregate market share of SBs from all three retailers					-.03***	-6.17
β_{asd1} Dummy Asda	-13.36** *	-29.5	-12.79***	-25.9	-13.91***	-16.4 7
β_{tes1} Dummy Tesco	-5.21***	-17.22	-4.69***	-12.84	-5.95***	-10.7 5
$\beta_{d\&e1}$ Dummy Dairy & Egg	.00*	2.54	.00	1.66	.59*	2.6
β_{fro1} Dummy Frozen	.00*	2.72	.00	1.39	.27	1.6
$\beta_{t\&j1}$ Dummy Tines & Jars	.00	1.77	.00a	1.72	.40*	2.47
$\beta_{p\&c1}$ Dummy Packets & Cereals	-.00	-0.24	.00	.72	.33**	2.8
$\beta_{s\&1}$ Dummy Snacks & Sweets	.00*	2.36	.00*	2.21	.31**	2.81
β_{dr1} Dummy Drinks	.00*	2.38	.00*	2.56	1.05***	11.31
β_{hou1} Dummy Household	.00	1.68	.00*	2.19	.42	1.54
β_{foo1} Dummy Food	-.00	-0.99	.00	-.55	.04	1.75
Intercept	102.16	123.57	101.76	111.8	109.45	32.26
R-Squared	20.05		18.69		18.76	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.10 Rescaled estimations of SBL's Retailing Price Model (N=5277)

Independent variables	<i>M7</i>		<i>M8</i>		<i>M9</i>		
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>		
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	
Dependent: Retailing price of an SBL							
<i>Product Characteristics</i>							
β_{PS1}	Packaging similarity	.06***	5.27	.06***	4.82	.06***	4.84
<i>Manufacturer characteristics</i>							
β_{BSTC1}	Targeted NB's sales turnover change			.00	-1.55	-.00	-.84
β_{NBMS1}	Targeted NB's market share			.00	-.12	.01***	6.4
<i>Categorical characteristics</i>							
β_{SBMS1}	SBs' aggregate market share in the category			.00*	2.47	.00*	2.34
β_{CR31}	Top 3 NBs' concentration ratio			.00	-0.22	.00	.17
<i>Controls</i>							
β_{PF1}	Purchase frequency of SBs					-.02	-1.07
β_{VPT1}	Volume purchased per trip of SBs					-.02***	-5.56
β_{AP1}	Average price of SBs					-.04*	-2.21
β_{PEN1}	Penetration of SBs					.02***	8.31
β_{APM1}	Aggregate market share of SBs from all three retailers					-.02***	-6.17
β_{asd1}	Dummy Asda	-.53***	-29.5	-.51***	-25.9	-.56***	-16.47
β_{tes1}	Dummy Tesco	-.21***	-17.22	-.19***	-12.84	-.24***	-10.75
$\beta_{d&e1}$	Dummy Dairy & Egg	.00*	2.54	.00	1.66	.02*	2.6
β_{fro1}	Dummy Frozen	.00*	2.72	.00	1.39	.01	1.6
$\beta_{t&j1}$	Dummy Tins & Jars	.00	1.77	.00	1.72	.02*	2.47
$\beta_{p&c1}$	Dummy Packets & Cereals	-.00	-0.24	.00	.72	.01**	2.8
$\beta_{s&s1}$	Dummy Snacks & Sweets	.00*	2.36	.00*	2.21	.01**	2.81
β_{dri1}	Dummy Drinks	.00*	2.38	.00*	2.56	.04***	11.31
β_{hou1}	Dummy Household	.00	1.68	.00*	2.19	.02	1.54
β_{foo1}	Dummy Food	-.00	-0.99	.00	-.55	.00	1.75
Intercept		-.00	-.00	-.00	-.42	-.00	-1.75
R-Squared		20.05		18.69		18.76	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.11 Estimations of targeted NB's Retailing Price Model (N=5277)

Independent variables	<i>M10</i>		<i>M11</i>		<i>M12</i>	
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: Retailing price of a targeted NB						
<i>Product Characteristics</i>						
β_{PS2} Packaging similarity	-2.73***	-3.52	-2.57***	-3.13	-2.55**	-3.13
<i>Manufacturer characteristics</i>						
β_{BSTC2} Targeted NB's sales turnover change			.00	1.5	.00	1.06
β_{NBMS2} Targeted NB's market share			.00	.12	.00*	2.67
<i>Categorical characteristics</i>						
β_{SBMS2} SBs' aggregate market share in the category			.00*	-2.1	.00***	8.43
β_{CR32} Top 3 NBs' concentration ratio			.00	.22	.00	1.87
<i>Controls</i>						
β_{PF2} Purchase frequency of SBs					-.17***	-5.32
β_{VPT2} Volume purchased per trip of SBs					-.08	-1.43
β_{AP2} Average price of SBs					-.17***	-4.04
β_{PEN2} Penetration of SBs					.04***	10.16
β_{APM2} Aggregate market share of SBs from all three retailers					-.04***	-5.74
β_{asd2} Dummy Asda	-5.47***	-13.12	-5.66***	-13.47	-8.50***	-11.83
β_{tes2} Dummy Tesco	1.55***	10.33	1.82***	8.36	-.93*	-2.31
$\beta_{d\&e2}$ Dummy Dairy & Egg	-.00*	-2.12	-.00	-1.53	.94***	7.72
β_{fro2} Dummy Frozen	-.00*	-2.19	-.00	-1.26	.44***	6.24
$\beta_{t\&j2}$ Dummy Tines & Jars	-.00	-1.51	-.00	-1.47	.52***	4.02
$\beta_{p\&c2}$ Dummy Packets & Cereals	.00	.24	-.00	-.7	.38***	3.67
$\beta_{s\&s2}$ Dummy Snacks & Sweets	-.00	-1.94	-.00	-1.84	.45***	4.9
β_{dri2} Dummy Drinks	-.00	-1.94	-.00*	-2.03	1.26***	5.17
β_{hou2} Dummy Household	-.00	-1.47	-.00	-1.81	.29	1.35
β_{fo2} Dummy Food	.00	1.01	.00	.55	.01	.51
Intercept	104.04	117.99	101.26	110.76	123.08	29.32
R-Squared	11.08		11.99		12.59	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.12 Rescaled estimations of targeted NB's Retailing Price Model (N=5277)

Independent variables	<i>M10</i>		<i>M11</i>		<i>M12</i>	
	<i>Base Model</i>		<i>Extended Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: Retailing price of a targeted NB						
<i>Product Characteristics</i>						
β_{PS2} ' Packaging similarity	-.05***	-3.52	-.05***	-3.13	-.05***	-3.13
<i>Manufacturer characteristics</i>						
β_{BSTC2} ' Targeted NB's sales turnover change			.00	1.5	.00	1.06
β_{NBMS2} ' Targeted NB's market share			.00	.12	.01*	2.67
<i>Categorical characteristics</i>						
β_{SBMS2} ' SBs' aggregate market share in the category			.00*	-2.1	.00***	8.43
β_{CR32} ' Top 3 NBs' concentration ratio			.00	.22	.00	1.87
<i>Controls</i>						
β_{PF2} ' Purchase frequency of SBs					-.06***	-5.32
β_{VPT2} ' Volume purchased per trip of SBs					-.01	-1.43
β_{AP2} ' Average price of SBs					-.14***	-4.04
β_{PEN2} ' Penetration of SBs					.05***	10.16
β_{APM2} ' Aggregate market share of SBs from all three retailers					-.03***	-5.74
β_{asd2} ' Dummy Asda	-.30***	-13.12	-.31***	-13.47	-.03***	-11.83
β_{tes2} ' Dummy Tesco	.09***	10.33	.10***	8.36	-.05*	-2.31
$\beta_{d&e2}$ ' Dummy Dairy & Egg	-.00*	-2.12	-.00	-1.53	.05***	7.72
β_{fro2} ' Dummy Frozen	-.00*	-2.19	-.00	-1.26	.02***	6.24
$\beta_{i&j2}$ ' Dummy Tins & Jars	-.00	-1.51	-.00	-1.47	.03***	4.02
$\beta_{p&c2}$ ' Dummy Packets & Cereals	.00	.24	-.00	-.7	.02***	3.67
$\beta_{s&s2}$ ' Dummy Snacks & Sweets	-.00	-1.94	-.00	-1.84	.02***	4.9
β_{dri2} ' Dummy Drinks	-.00	-1.94	-.00*	-2.03	.07***	5.17
β_{hou2} ' Dummy Household	-.00	-1.47	-.00	-1.81	.02	1.35
β_{foo2} ' Dummy Food	.00	1.01	.00	.55	.00	-.51
Intercept	.00	.00	.00	.41	-.00	-.58
R-Squared	11.08		11.99		12.59	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

5.3.3 Hypotheses testing

H8 suggests a negative effect of packaging similarity on the price gap between an SBL and the targeted NB. The results are listed in Table 5.7. **M6** support this hypothesis ($\beta_{PS} = -3.11, \rho < .001$). Therefore, for a given product, retailers will price those SBLs with higher packaging similarity more closely to the targeted NB.

H9 and H10 test the influence of packaging similarity on the pricing strategies of SBLs and NBs, respectively. Specifically, in accordance with H9, the packaging similarity of an SBL positively affects its retail price (see Table 5.9 **M9**, $\beta_{PS1} = 4.05, \rho < .001$). Then, consistent with H10, when a retailer produces an SBL with a high packaging similarity to a target NB, the retailer will price this target NB lower (see Table 5.11 **M12**, $\beta_{PS2} = -2.55, \rho < .001$).

H11 predicts a positive relationship between the market strength of the targeted NB and the price gap between an SBL and this NB. In the empirical analysis, the market strength of NBs was reflected through two indicators, namely ‘brand sales turnover change’ and ‘market share of targeted NB’. When a NB has a high and positive growth in its brand turnover, or has a high market share, it indicates that the NB has strong market strength. This extends H11 into two sub-hypotheses: (i) the higher the brand sales turnover change of the NB, the wider the price gap between an SBL and this NB; and (ii) the higher the market share of the targeted NB, the wider the price gap between an SBL and this NB. The statistical results in Table 5.7 show perfect support for these two extended hypotheses. In detail, the findings prove that the first indicator has a weak but significantly positive effect on the price gap ($\beta_{BSTC} = .01, \rho < .001$), and a positive relationship is found between the second indicator “market share of targeted NB” and the price gap ($\beta_{NBMS} = .13, \rho < .001$). Thus, when the targeted NB shows a good market prospect, reflected through an increase in sales turnover compared to the year before, or has a high market share, the retailers will price the SBL far more distantly from the price of this NB.

H12 and H13 test how the categorical features affect pricing competition between SBLs and the target NBs. As can be seen from Table 5.7 **M6**, in accordance with H12 which predicts a negative effect direction, when an SBL is in a product category where the SBs have a higher overall market share ($\beta_{SBMS} = -.13, \rho < .001$), then the retailers will

price the SBLs closer to the targeted NBs. H6 proposes a negative effect of NB concentration ratio on price gap, which is supported by the analysis results. As the concentration ratio of the NBs increases, the retailers price the SBL and the targeted NB more distinctively so as to increase the price gap ($\beta_{CR3} = -.17, \rho < .001$).

According to the rescaled estimations presented in Table 5.8, among the various factors considered, packaging similarity is not the most important factor that influences the pricing competition between SBLs and the NB being targeted ($\beta_{PS} = -.04, \rho < .001$). In contrast, the concentration ratio of the top three NBs exerts the most significant and negative effect on the pricing competition between SBLs and the NBs being targeted ($\beta_{CR3} = -.26, \rho < .001$), while the targeted NB's market share is the most important positive factor affecting the pricing competition between the two ($\beta_{NBMS} = .18, \rho < .001$).

5.3.4 Robustness checks

The robustness of the findings was checked through several tests (see Table 5.13, Table 5.14 and Table 5.15 for detailed robustness check results).

Alternative sample composition: analyse data on supermarket basis. Based on the owners of the SBs, the data were separated into three sub-datasets, and a separate regression for each of them was conducted separately.

Sensitivity of the functional form: general linear model. As the dependent variable is continuous, this research conducted a linear regression. In order to check whether the findings are idiosyncratic to the chosen (linear) specification, a general linear model was applied as a robustness check.

Exclusion of insignificant control variables. Given the complexity of the pricing strategy, as well as the wide spectrum of product categories involved in the empirical study, this research tried to consider all the control variables in hand, a rule which has been widely applied by relevant research (i.e. Ailawadi and Harlam 2004; ter Braak, Dekimpe, and Geyskens 2013). Nevertheless, some of these control parameters had insignificant effects. Thus, to increase the parameter estimating efficiency of the key

variables, the *Full Model* was rerun after excluding those insignificant control variables.

The results are quite stable. Except the robustness test check using the sub-samples from Sainsbury's and Tesco, the analysis results from the other three (i.e. robustness test on basis of sub-sample from ASDA, using GLM regression, and after exclusion of insignificant control variables) show support for the key hypothesis H8 (i.e. a smaller price gap can be found between an SBL and the targeted NB as the packaging similarity between the two increases). Almost all robustness tests show support for H9, that there exists a negative relationship between the packaging similarity of SBLs and the retail price of NB. A positive connection between the packaging similarity of SBLs and the unit sales of corresponding SBLs (H10) is also supported by the various checks. For hypothesis H11 relating to manufacturer characteristics, except the sub-sample from Sainsbury's, both of the indicators indexing the effects of manufacturer market strength on pricing strategy find support from all the other robustness tests. Consistent support is found for the two hypotheses about categorical characteristics (H12 and H13).

Table 5.13 Robustness checks of hypotheses

Hypotheses developed	Alternative Sample			GLM Regression	Insig. control var. excluded
	ASDA	Sainsbury's	Tesco		
H1: The higher the packaging similarity an SBL has to the targeted NB, the narrower the price gap between respective SBL and NB will be.	✓	—	—	✓	✓
H2: The higher the packaging similarity an SBL has to the targeted NB, the higher the retail price of this SBL will be.	✓	✓	✓	✓	✓
H3: The higher the packaging similarity an SBL has to the targeted NB, the lower the retail price of the targeted NB will be.	✓	✓	✓	✓	✓
H4: The stronger the market strength of the targeted NB, the wider the price gap between respective SBL and NB will be.	✓	✓ ^a	✓ ^a	✓	✓
H5: The stronger the overall market strength of SBs, the narrower the price gap between respective SBL and NB will be.	✓	✓	✓	✓	✓

H6: The more concentrated the market strength of the NBs, the narrower the price gap between respective SBL and NB will be. ✓ ✓ ✓ ✓ ✓

Note: “✓” means that the corresponding hypothesis is supported; “–” means that the corresponding hypothesis is not supported; ^a The hypothesis is partly supported.

Table 5.14 Robustness checks – the coefficients of Price Competition Model

Independent variables	<i>M13a</i> Alternative Sample			<i>M13b</i> GLM	<i>M13c</i> Insignificant control variables excluded
	ASDA	Sainsbury's	Tesco	Regression	
Dependent: Price gap between an SBL and the targeted NB					
<i>Product Characteristics</i>					
Packaging similarity	-7.83	1.20	-2.29	-3.11	-3.11
<i>Manufacturer characteristics</i>					
Targeted NB's sales turnover change	.03	-.01	.00	.01	.01
Targeted NB's market share	.12	.01	.24	.13	.13
<i>Categorical characteristics</i>					
SBs' aggregate market share in the category	-.32	.08	-.07	-.13	-.13
Top 3 NBs' concentration ratio	-.25	-.04	-.21	-.17	-.17

Notes: All coefficients in bold are significant at $p < .05$.

“–” means corresponding variable was not included in the estimation of that model.

Table 5.15 Robustness checks – the rescaled coefficients of Price Competition Model

Independent variables	<i>M13a</i> Alternative Sample			<i>M13b</i> GLM	<i>M13c</i> Insignificant control variables excluded
	Asda	Sainsbury's	Tesco	Regression	
Dependent: Price gap between an SBL and the targeted NB					
<i>Product Characteristics</i>					
Packaging similarity	-.09	.01	-.03	-.04	-.04
<i>Manufacturer characteristics</i>					
Targeted NB's sales turnover change	.22	-.09	-.03	.04	.04
Targeted NB's market share	.16	.02	.33	.18	.18
<i>Categorical characteristics</i>					
SBs' aggregate market share in the category	-.27	.07	-.06	-.11	-.11
Top 3 NBs' concentration ratio	-.38	-.05	-.33	-.26	-.26

5.4 Price competition around store branded lookalike cross stores

From a cross-store competing perspective, different information were extract from the same combined dataset that sourced from Study 3 and the two secondary datasets to examine the set of hypotheses reflecting competition among rival retailers around SBLs (H14-H21).

5.4.1 Overall descriptive results

Table 5.16 provides the descriptive statistics and correlations of key variables in the *Pricing Model*. None of the VIF statistics exceeded 5 in this analysis, indicating that multicollinearity is not an issue in this model. The descriptive statistics and correlations of the key variables in the *Price Competition Model* are shown in Table 5.17. By checking the VIF statistics, the value for *PENG* was found to be over 5, so it was excluded in the hypotheses testing to avoid multicollinearity.

Table 5.16 Correlation matrix and descriptive statistics of Pricing Model

Key variables	1	2	3	4	5	6	7	8	9	10
1 Price position	1									
2 Perceived similarity	.10	1								
3 Purchase frequency ^a	-.02	-.04	1							
4 Volume purchased per trip ^a	-.01	.00	.44	1.00						
5 Market share by volume ^a	-.07	-.04	-.27	-.25	1					
6 Penetration	-.06	.06	.00	.00	.00	1				
7 Concentration ratio of Store brands (SBs)	.00	.00	-.24	-.27	.37	.08	1			
8 Average price of all three-tiered SBs	.33	.04	.05	-.01	-.16	-.27	.00	1		
9 Categorical top 3 NBs concentration ratio	.00	.00	.10	.13	-.05	.09	.27	.00	1	
10 Categorical SB market share	.00	.00	.18	.15	-.11	.09	.28	.00	-.35	1
Mean	100.00 ^b	1.00 ^b	-.00	.00	-.00	34.69	58.84	100	.14	20.70
SD	13.92	.26	1.38	1.39	2.08	12.74	5.99	7.19	.13	12.51

Notes: All correlation in bold are significant at the level of 5% (two-sided).

^a For these three variables, their residual that are not attribute to penetration of corresponding retailer (see footnote 1 for detailed explanation) were included; therefore, 0 correlation are found between these three variables and penetration.

^b For these two variables, the mean 100 and 1 were generated due to transfer of absolute observations to relative values (see Appendix 6 for detailed manipulation), specific means of these two variables were displayed in Figure 4.1 and Figure 4.2.

Table 5.17 Correlation matrix and descriptive statistics of Price Competition Model

Gap of the key variables	1	2	3	4	5	6	7	8	9	10
1 Price position	1									
2 Perceived similarity	.07	1								
3 Purchase frequency ^a	-0.00	-0.05	1							
4 Volume purchased per trip ^a	-0.06	-0.01	-0.01	1						
5 Market share by volume ^a	-0.12	-0.10	-0.00	.29	1					
6 Penetration	-0.32	.03	.00	.00	.00	1				
7 Concentration ratio of Store brands (SBs)	-0.16	.03	-0.15	.08	.10	.02	1			
8 Average price of all three-tiered SBs	.30	.01	.09	-0.10	-0.17	-0.79	.08	1		
9 Categorical SB market share	-0.16	.06	-0.14	.11	.00	-0.01	-0.28	-0.02	1	
10 Categorical top 3 NBs concentration ratio	.22	.09	-0.05	.05	.06	.06	.27	-0.05	-0.35	1
Mean	-5.53	-0.06	-0.00	.00	-0.00	-8.67	58.84	-2.99	20.7	47.97
SD	23.47	.44	.83	.30	2.46	10.50	5.99	12.08	12.51	22.99

Notes: All correlation in bold are significant at the level of 5% (two-sided).

^a For these three variables, we include their residual that are not attribute to penetration of corresponding retailer (refer to footnote 3 for detailed explanation); therefore, 0 correlation are found between these three variables and penetration.

5.4.2 Pricing of store branded lookalikes and the packaging similarity

The results of the *Pricing Model* that tests the pricing strategy of SBLs are discussed first. In *Base Model (M14)*, which considers only the effect of SBLs' packaging similarity and the two types of dummies measuring the differences among stores and product categories, no contextual marketing determinants were included. The *Full Model (M15)*, which also considers contextual marketing factors, provides significant improvement over *M14* (R^2 increased from 18.70 to 21.03). The estimations of these two models both show a positive relationship between the packaging similarity and pricing strategy for SBLs, which is in accordance with the hypothesis that an SBL with higher packaging similarity is priced higher. Table 5.18 presents the results of both models. Table 5.19 presents the standardised estimation of both models. The four hypotheses regarding SBLs' pricing strategy were tested on the basis of *M15*. As an extra consideration, we rescaled the variables in each model of this research following Gelman (2008) for the purpose of comparing the relative importance of the various factors investigated¹⁰. Specifically, the numeric variables were rescaled by subtracting the mean and then dividing by two times of their standard deviations, and the binary variables were centred by subtracting their mean in the data. Table 5.19 presents the estimations after rescaling.

¹⁰ In order to provide a direct comparison between the coefficients of different types of variables (i.e. numeric vs. binary) introduced in each of the models in this research, similar rescaling manipulations were repeated in the following analyses, and the estimations after rescaling are presented in tables following the estimation tables that are without rescaling.

Table 5.18 Estimations of Pricing Model (N=5277)

Independent variables	M14		M15	
	<i>Base Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: the price position of an SBL				
<i>Product characteristics</i>				
β_{PS} Packaging similarity	3.39***	4.34	3.39***	4.49
<i>Store brand (SB) familiarity</i>				
β_{PF} Purchase frequency			-.21*	-2.17
β_{VPT} Volume purchased per trip			-.06*	-2.16
<i>Retailer characteristics (market strength)</i>				
β_{MS} Market share by volume of the SB			-1.20***	-7.38
β_{PEN} Penetration of the SB			-.03***	-4.47
<i>Market characteristics (competition intensity)</i>				
β_{CR} Concentration ratio of SBs			.35***	7.24
<i>Controls</i>				
β_{ap} Average price of all three-tiered SBs			-.53***	-7.81
β_{sbms} Categorical SB market share			.00***	2.71
β_{cr3} Categorical top 3 NBs concentration ratio			.00***	6.29
β_{asd} Dummy Asda	-8.20***	-23.19	-10.96**	* -16.96
β_{sai} Dummy Sainbury's	6.41***	15.90	11.25***	13.23
$\beta_{d\&e}$ Dummy Dairy & Egg	-.00	.00	-2.74***	-7.09
β_{fro} Dummy Frozen	-.00	.00	.65***	8.43
$\beta_{t\&j}$ Dummy Tines & Jars	-.00	.00	-4.28***	-6.72
$\beta_{p\&c}$ Dummy Packets & Cereals	.00	.00	-3.53***	-6.88
$\beta_{s\&s}$ Dummy Snacks & Sweets	-.00	.00	-.42***	-4.24
β_{dri} Dummy Drinks	.00	.00	-3.49***	-6.63
β_{hous} Dummy Household	-.00	.00	-1.32***	-5.91
Intercept	100.59	645.95	135.11	27.70
R-Square	18.70		21.07	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.19 Rescaled estimations of Pricing Model (N=5277)

Independent variables	M14		M15	
	<i>Base Model</i>		<i>Full Model</i>	
	Coef.	<i>t</i> -value	Coef.	<i>t</i> -value
Dependent: the price position of an SBL				
<i>Product characteristics</i>				
β_{PS} Packaging similarity	.06***	4.34	.06***	4.49
<i>Store brand (SB) familiarity</i>				
β_{PF} Purchase frequency			-.05*	-2.17
β_{VPT} Volume purchased per trip			-.01*	-2.16
<i>Retailer characteristics (market strength)</i>				
β_{MS} Market share by volume of the SB			-.60***	-7.38
β_{PEN} Penetration of the SB			-.03***	-4.47
<i>Market characteristics (competition intensity)</i>				
β_{CR} Concentration ratio of SBs			.15***	7.24
<i>Controls</i>				
β_{ap} Average price of all three-tiered SBs			-.27***	-7.81
β_{sbms} Categorical SB market share			.00***	2.71
β_{cr3} Categorical top 3 NBs concentration ratio			.00***	6.29
β_{asd} Dummy Asda	-.29***	-23.19	-.39***	-16.96
β_{sai} Dummy Sainbury's	.23***	15.90	.40***	13.23
$\beta_{d\&e}$ Dummy Dairy & Egg	-.00	.00	-.10***	-7.09
β_{fro} Dummy Frozen	-.00	.00	.02***	8.43
$\beta_{t\&j}$ Dummy Tins & Jars	-.00	.00	-.15***	-6.72
$\beta_{p\&c}$ Dummy Packets & Cereals	.00	.00	-.13***	-6.88
$\beta_{s\&s}$ Dummy Snacks & Sweets	-.00	.00	-.02***	-4.24
β_{dri} Dummy Drinks	.00	.00	-.13***	-6.63
β_{hou} Dummy Household	-.00	.00	-.05***	-5.91
Intercept	00	.00	-.00	-1.20
R-Square	18.70		21.07	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Packaging similarity. H14 predicts that the price of an SBL is positively affected by its packaging similarity compared to the targeted NB. In other words, a higher similarity enables the retailer to price the SBL higher. As shown in Table 5.18, the corresponding coefficient ($\beta_{PS} = 3.39$, $p < .01$) shows strong support for this hypothesis.

SB familiarity. H16 posits a negative relationship between consumers' SB familiarity and SBL price. This hypothesis is supported as the coefficient estimation of the two relevant indexes are negative and significant ($\beta_{PF} = -.21, \rho < .05$; $\beta_{VPT} = -.06, \rho < .05$). Thus, in a category where consumers' shopping frequency and volume bought per trip are higher for the SBs, the retailers will price the SBLs lower.

Market strength. H18 proposes that retailers with higher market strength in a given category will set a lower price for their SBL. As the estimation shown in Table 5.18 reveals, the two indicators measuring the market strength of a retailer in a given category, namely the market share and the penetration of the SB, show negative influences on the price of the SBL in the corresponding category ($\beta_{MS} = -1.20, \rho < .001$; $\beta_{PEN} = -.03, \rho < .001$).

Market concentration ratio. Regarding the relationship of market concentration ratio and the pricing strategy for an SBL, the evidence shown in Table 5.18 is in accordance with H20. In categories where the three retailers have a higher concentration ratio, they will adopt collusive behaviour and there is a lower competing force drawn from other retailers (e.g. the discounters), and they will price corresponding SBLs higher ($\beta_{CR} = .35, \rho < .001$).

As for the retailer control variables, it is found that the SBLs introduced by Sainsbury's are usually priced higher ($Dummy_{sai} = 11.25, \rho < .001$) while those introduced by ASDA are priced lower ($Dummy_{asd} = -10.96, \rho < .001$), compared to their SBL counterparts from Tesco. This is consistent with the distribution in the manipulation check on the average prices of SBs sold by these three retailers.

According to the estimation results after rescaling (Table 5.19), among the four indicators that negatively affect the retailing price of SBLs, the effect of the market share of an SB has the most significant importance ($\beta_{MS}' = -.60, \rho < .001$). This is followed by the effects of the purchase frequency of the SB ($\beta_{PF}' = -.05, \rho < .05$) and that of the penetration of the SB ($\beta_{PEN}' = -.03, \rho < .001$), while the effect of the volume purchase per trip has the relatively least importance ($\beta_{VPT}' = -.01, \rho < .05$). For the two positive factors, the significance of the effect of the concentration ratio of

the SB ($\beta_{CR}' = .15, \rho < .001$) surpasses that of the packaging similarity ($\beta_{PS}' = .06, \rho < .01$).

5.4.3 Pricing competition among store branded lookalikes

The testing results on price competition of SBLs among retailers are reported in this section. First, a *Base Model* (**M16**) that contains only similarity gaps between SBLs and dummies indexing retailers and product categories was estimated. After this, all the contextual marketing variables identified were added in the *Full Model* (**M17**). The results of both models give statistical support to the hypothesis that a bigger similarity difference leads to a bigger price gap. The testing results of these two models are presented in Table 5.20. The estimation results after rescaling are presented in Table 5.21. The four hypotheses regarding SBLs' price competition were tested on the basis of **M17**.

Table 5.20 Estimations of Price Competition Model (N=5277)

Independent variables	M16		M17	
	<i>Base Model</i>		<i>Full Model</i>	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Dependent: price gap between competing SBLs				
<i>Product characteristics</i>				
β_{PSG} Packaging similarity gap	1.73*	2.12	1.73*	2.29
<i>Store brand (SB) familiarity</i>				
β_{PPG} Purchase frequency gap			.45	1.09
β_{VPPG} Volume purchased per trip gap			-3.42***	-6.10
<i>Retailer characteristics (market strength)</i>				
β_{MSG} Market share by volume gap			-1.66***	-11.66
<i>Market characteristics (competition intensity)</i>				
β_{CR1} Concentration ratio of SBs			.17*	2.24
<i>Controls</i>				
β_{ap} Average price of all three-tiered SBs gap			-.60***	-10.06
β_{sbms} Categorical SB market share			-.11***	-3.27
β_{cr3} Categorical top 3 NBs concentration ratio			.21***	15.21
β_{t-a} Dummy Tesco vs. Asda	-6.41***	-16.14	-12.44** *	-13.75
β_{t-s} Dummy Tesco vs. Sainsbury's	-21.03***	-21.65	-35.73** *	-15.53
$\beta_{d\&e}$ Dummy Dairy & Egg	-9.30***	-5.26	-5.10	-1.93
β_{fro} Dummy Frozen	-20.91***	-8.40	-17.50** *	-7.54
$\beta_{t\&j}$ Dummy Tines & Jars	-1.45	-.83	-10.37** *	-4.06
$\beta_{p\&c}$ Dummy Packets & Cereals	2.55	1.14	1.06	.42
$\beta_{s\&s}$ Dummy Snacks & Sweets	-8.27***	-3.66	-5.13*	-2.07
β_{dri} Dummy Drinks	-2.81	-1.36	-10.65** *	-4.06
β_{hou} Dummy Household	-9.30***	-5.34	-11.57** *	-5.22
Intercept	-8.41	-3.71	-17.65	-5.87
R-Square	19.42		26.20	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Table 5.21 Rescaled estimations of Price Competition Model (N=5277)

Independent variables	M16		M17	
	<i>Base Model</i>		<i>Full Model</i>	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Dependent: price gap between competing SBLs				
<i>Product characteristics</i>				
β_{PSG} 'Packaging similarity gap	.03*	2.12	.03*	2.29
<i>Store brand (SB) familiarity</i>				
β_{PPG} 'Purchase frequency gap			.02	1.09
β_{VPPG} 'Volume purchased per trip gap			-.05***	-6.10
<i>Retailer characteristics (market strength)</i>				
β_{MSG} 'Market share by volume gap			-.64***	-11.66
<i>Market characteristics (competition intensity)</i>				
β_{CR1} 'Concentration ratio of SBs			.04*	2.24
<i>Controls</i>				
β_{ap} 'Average price of all three-tiered SBs gap			-.31***	-10.06
β_{sbms} 'Categorical SB market share			-.06***	-3.27
β_{cr3} 'Categorical top 3 NBs concentration ratio			.21***	15.21
β_{t-a} 'Dummy Tesco vs. Asda	-.13***	-16.14	-.25***	-13.75
β_{t-s} 'Dummy Tesco vs. Sainsbury's	-.42***	-21.65	-.72***	-15.53
$\beta_{d\&e}$ 'Dummy Dairy & Egg	-.20***	-5.26	-.11	-1.93
β_{fro} 'Dummy Frozen	-.45***	-8.40	-.37***	-7.54
$\beta_{t\&j}$ 'Dummy Tines & Jars	-.03	-.83	-.22***	-4.06
$\beta_{p\&c}$ 'Dummy Packets & Cereals	.05	1.14	.02	.42
$\beta_{s\&s}$ 'Dummy Snacks & Sweets	-.18***	-3.66	-.11*	-2.07
β_{dri} 'Dummy Drinks	-.06	-1.36	-.23***	-4.06
β_{hou} 'Dummy Household	-.20***	-5.34	-.25***	-5.22
Intercept	-.00	-.57	-.00	-.76
R-Square	19.42		26.20	

Notes: ***p<.001, **p<.01, *p<.05, all directional hypothesized coefficients were one-sided estimated, all coefficient for control effect were two-sided estimated.

Similarity difference. H15 supposes that a similarity difference positively affects the corresponding price gap. This hypothesis is supported (see Table 5.20, $\beta_{PSG} = 1.73$, $\rho < .05$). Thus, the closer the similarity of the two SBLs, the closer the retailers will price them.

SB familiarity difference. H17 proposes a negative influence of the difference in SBs'

familiarity on the corresponding price gap of paired SBLs, which is partly supported. For the relevant two variables selected, though the estimation of the difference in purchase frequency fails to reach statistical significance ($\rho > .1$), the difference in volume purchased per trip negatively affects the price gap between paired SBLs ($\beta_{PFG} = -3.42$, $\rho < .001$). *Market strength.* H19 posits a negative link between market strength difference and the price gap of paired SBLs. Because the VIF for the penetration difference was over 5, this effect was excluded from the full model, leaving only the difference in market share by volume to index the effect of the market strength difference. The statistical estimation in Table 5.20 shows consistency with the hypothesised direction, as a negative effect was found ($\beta_{MSG} = -1.66$, $\rho < .001$).

Market concentration ratio. H21 predicts that SBs' concentration ratio positively affects the pricing competition between SBLs. As a lower concentration ratio indicates strong competing intensity from other retailers (e.g. the discounters), retailers have to compete hard to obtain and maintain a market share, thus leaving a narrower price gap between the competing SBLs. This is statistically supported, as the coefficient estimation of competition intensity on price gap (in Table 5.20) is $\beta_{CRI} = .17$, at a significance level of $\rho < .05$.

The estimation of the control variable of the "Average price of all three-tiered SBs gap", in a category where two retailers compete on prices of equivalent SBs, they tend to set the prices of SBLs more apart (Table 5.20, $\beta_{AP} = -.60$, $\rho < .001$). Furthermore, in a category where SBs have a stronger overall market strength, retailers will set the prices of corresponding SBLs distinctively, thus leaving wider price gaps. In categories where the market power is highly concentrated among limited NBs, retailers will compete more closely. As revealed by the comparison of the penetration distribution (see Figure 5.4), Tesco can be treated as the market leader. This leads ASDA and Sainsbury's to target Tesco more closely than they do to each other, as supported by the coefficient estimation of the dummy variable indexing the comparison groups ($\beta_{t-a} = -12.44$, $\rho < .001$; $\beta_{t-s} = -35.73$, $\rho < .001$).

The estimation results after rescaling (see Table 5.21) reveal that the gap existing

between two SBs in respect of market share counts for the most significant but negative effects on the price competition between respective SBLs ($\beta_{MSG}' = -.64$, $\rho < .001$), while the importance of the effects from the other three factors considered are quite even ($\beta_{PSG}' = .03$, $\rho < .05$; $\beta_{PFG}' = -.05$, $\rho < .001$; $\beta_{CK1}' = .04$, $\rho < .05$).

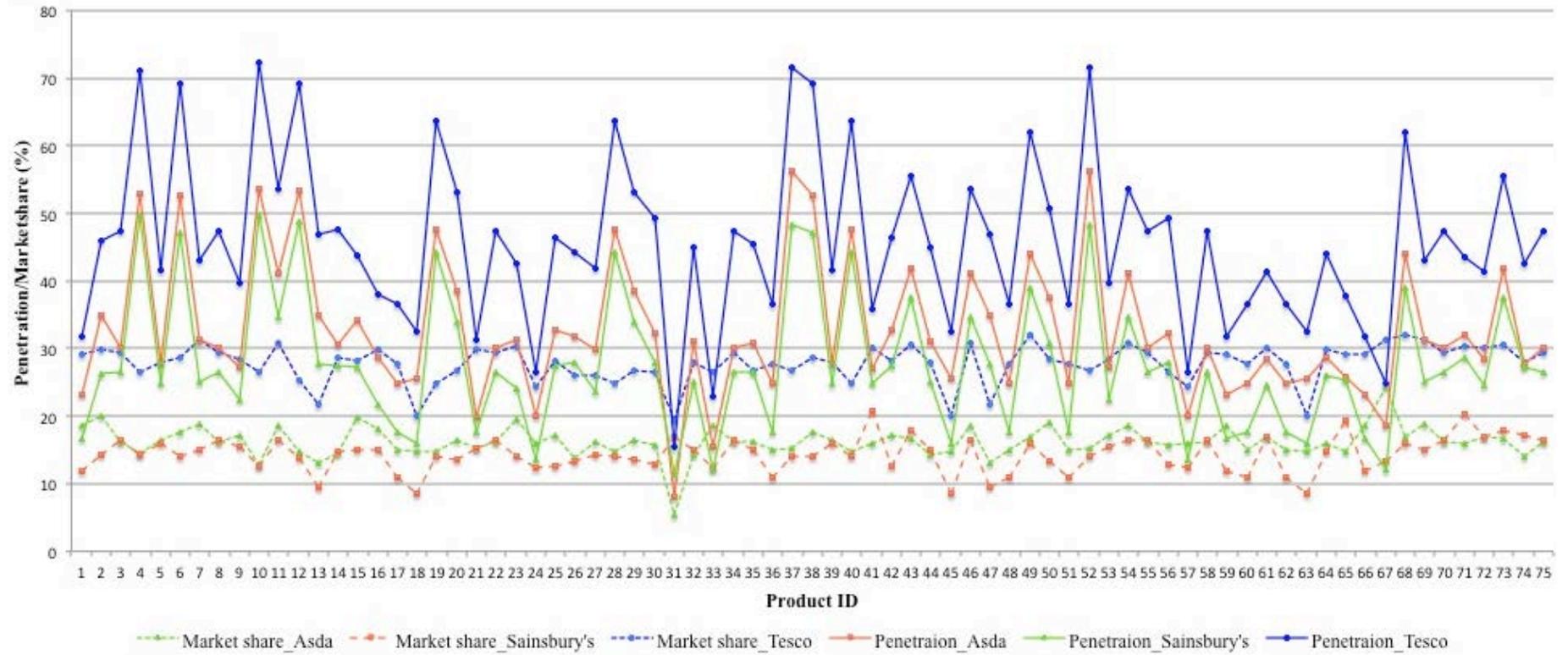


Figure 5.4 Market share and penetration comparison of SBs in the three retail stores

5.4.4 Robustness checks

Alternative packaging similarity measurement: absolute rates. To account for the possible influence of personal habituation in similarity judgement tasks, this study introduced the relative measurement. This was introduced to consider the reality that some people tend to avoid extreme rates in their judgements, while this might not be an issue with the scores given by other participants. As a robustness check, the two proposed models were tested using the absolute rates collected originally. Though a positive relationship was found between packaging similarity of each SBL and its price, this estimation did not reach statistical significance. Support was found for the second hypothesis (H15) positing that the bigger the similarity difference between paired SBLs, the bigger the corresponding price gap will be.

Alternative sample composition: on store basis. Our sample includes SBLs from ASDA, Sainsbury's, and Tesco. To account for retailer specific influences on the pricing strategies of SBLs, dummies were included to control for this influence source. As a robustness check, separate regressions were conducted for the sample from each retailer.

Sensitivity to the functional form. Obviously, the dependent variable is not bounded between 0 and 1. Therefore, this study adopted a linear regression model rather than a logistic estimation. To check whether the results are idiosyncratic to the linear regression, a generalised linear model was estimated alternatively for each of the two models.

The results of these checks are presented in Tables 5.22 to Table 5.26. The majority of the robustness checks show support for the positive relationship posited between the packaging similarity of an SBL and its corresponding price (H14) and the positive effect direction from similarity difference to price gap between SBLs (H15). The relationship posited between consumers' SB familiarity and the pricing of SBLs (H16) and price competition between SBLs (H17) were partly proved, as these two effect directions were not shown in some of the checks. The negative relationships between retailer market strength and pricing strategy (H18) and pricing competition (H19) for

SBLs were consistently supported by all the robustness checks. Stable support was found for the positive effects of the concentration ratio of SBs on the price of SBLs (H20) and on pricing competition between SBLs (H21).

Table 5.22 Robustness check of hypotheses

Hypotheses developed	Alternative Sample			Alternative PS measurement	GLM Regression
	ASDA	Sainsbury's	Tesco		
H1: The higher the SBL's packaging similarity, the higher its retailing price.	—	✓	✓	—	✓
H2: The higher the difference in paired SBLs' packaging similarity, the bigger the price gap between them.	✓	—	✓	✓	✓
H3: The higher the SB familiarity, the lower its SBL's retailing price.	✓ ^a	✓ ^a	✓ ^a	✓	✓
H4: The higher the difference in paired SBs' familiarity, the smaller the price gap between their corresponding SBLs.	✓ ^a	✓	✓ ^a	✓ ^a	✓
H5: The stronger the retailer's market strength, the lower its SBL's retailing price.	✓ ^a	✓	✓	✓	✓
H6: The higher the difference in retailers' market strength, the smaller the price gap between their corresponding SBLs.	✓	✓	✓	✓	✓
H7: The higher the SBs' concentration ratio, the higher the retailing price of the corresponding SBL.	✓	✓	✓	✓	✓
H8: The higher the SBs' concentration ratio, the higher the price gap between the corresponding SBLs.	—	—	✓	✓	✓

Notes: '✓' indicates that corresponding hypothesis is supported.

^a The hypothesis is partially supported.

Table 5.23 Robustness check – the coefficient of Pricing Model

Independent variables	<i>M18a</i>			<i>M18b</i>	<i>M18c</i>
	Alternative sample composition (on comparison group basis)			Alternative PS measurement	Generalized linear model
	Asda vs. Sainsbury's	Asda vs. Tesco	Sainsbury's vs. Tesco		
Dependent: the price position of an SBL					
<i>Product characteristics</i>					
Packaging similarity	1.42	4.52***	2.27**	.07	3.39***
<i>Store brand (SB) familiarity</i>					
Purchase frequency	-4.70***	-.49	2.62***	-.21*	-.21*
Volume purchased per trip	.76***	2.81***	-3.49***	-.06*	-.06*
<i>Market characteristics (competition intensity)</i>					
Market share by volume	-.68***	-1.79***	-1.94***	-1.20***	-1.20***
Penetration of the SB	.07***	-.27***	-.15***	-.03***	-.03***
<i>Market characteristics</i>					
Concentration ratio of Store brands (SBs)	-.14**	1.45***	.43*	.35***	.35***

Notes: ***p<.001, **p<.01, *p<.05.

Table 5.24 Robustness check – the rescaled coefficient of Pricing Model

Independent variables	<i>M18a</i>			<i>M18b</i>	<i>M18c</i>
	Alternative sample composition (on comparison group basis)			Alternative PS measurement	Generalized linear model
	Asda vs. Sainsbury's	Asda vs. Tesco	Sainsbury's vs. Tesco		
Dependent: the price position of an SBL					
<i>Product characteristics</i>					
Packaging similarity	.03	.08***	.04**	.00	.06***
<i>Store brand (SB) familiarity</i>					
Purchase frequency	-1.05***	-.11	.59***	-.05*	-.05*
Volume purchased per trip	.10***	.36***	-.44***	-.01*	-.01*
<i>Market characteristics (competition intensity)</i>					
Market share by volume	-.34***	-.89***	-.97***	-.60***	-.60***
Penetration of the SB	.07***	-.25***	-.14***	-.03***	-.03***

<i>Market characteristics</i>					
Concentration ratio of Store brands (SBs)	-.06**	.63***	.19*	.15***	.15***

Notes: ***p<.001, **p<.01, *p<.05.

Table 5.25 Robustness check – the coefficient of Price Competition Model

Independent variables	Alternative sample composition (on comparison group basis)			Alternative PS measurement	Generalized linear model
	Asda vs. Sainsbury's	Asda vs. Tesco	Sainsbury's vs. Tesco		
Dependent: price gap between competing SBLs					
<i>Product characteristics</i>					
Packaging similarity gap	2.83*	-.52	3.18***	.88***	1.73*
<i>Store brand (SB) familiarity</i>					
Purchase frequency gap	5.28***	7.05***	2.60***	.45	.44
Volume purchased per trip gap	-7.35***	10.32***	-41.40***	-3.42***	-3.42***
<i>Market characteristics (competition intensity)</i>					
Market share by volume gap	-2.24***	2.02***	-3.16***	-1.66***	-1.66***
<i>Market characteristics</i>					
Concentration ratio of Store brands (SBs)	-.76***	.44***	1.31***	.17*	.17*

Notes: ***p<.001, **p<.01, *p<.05.

Table 5.26 Robustness check – the rescaled coefficient of Price Competition Model

Independent variables	Alternative sample composition (on comparison group basis)			Alternative PS measurement	Generalized linear model
	Asda vs. Sainsbury's	Asda vs. Tesco	Sainsbury's vs. Tesco		
Dependent: price gap between competing SBLs					
<i>Product characteristics</i>					
Packaging similarity gap	.05*	-.01	.06***	.04***	.03*
<i>Store brand (SB) familiarity</i>					
Purchase frequency	.29***	.38***	.14***	.02	.02

gap					
Volume purchased per trip gap	-.11***	.15***	-.60***	-.05***	-.05***
<i>Market characteristics (competition intensity)</i>					
Market share by volume gap	-.86***	.78***	-1.22***	-.64***	-.64***
<i>Market characteristics</i>					
Concentration ratio of Store brands (SBs)	-.19***	.11***	.33***	.04*	.04*

Notes: ***p<.001, **p<.01, *p<.05.

5.5 Discussion

5.5.1 Consumer perceptions on packaging similarity of store branded lookalikes

Under different shopping scenarios, properly manipulated lookalikes can be evaluated positively. Within familiar shopping circumstances, moderately similar lookalikes are evaluated more positively than those highly similar lookalikes (van Horen and Pieters 2012a). In contrast, when consumers are facing high uncertainty, even blatantly high similar lookalikes would be preferred (van Horen and Pieters 2013). Thus, enlightened by existing literature, retailers may have a clearer idea of whether or not to position their SBs close to the NBs; although the next question they face is how to manipulate the packaging of their SBs to meet the positioning strategy. The research findings relating consumer perceptions on packaging similarity of lookalikes shed light on this query.

According to results of Study 1, we first revealed that all three packaging attributes studied (i.e. colour, size and shape, and image) exert a positive influence on the similarity judgement of SBLs (H1, H2, and H3), while amongst them, colour seems to have the most significant importance (H3a). In Study 2, we explored whether subjective factors, as well as contextual variables would affect the perception process and how they would influence this process. Our theoretical basis is that how consumers make use of the external packaging cues (i.e. colour, size and shape, and image)

critically depends on whether they are following an assimilation path or a contrastive process. The results of this study revealed that consumers who are more loyal to a leading NB perceive the SBL to be less similar (H4), while an SBL produced by a retailer with better store image will be judged to be more similar to the competing NB (H7). The results failed to prove the moderating effect of brand loyalty on the relationship between brand familiarity and perceived similarity (H6). It showed that consumers' brand loyalty increases as they become more familiar with the NBs (H5); as consumers become more loyal to the brands, they perceive the SBLs to be less similar to the NBs.

There has been controversy around lookalikes ever since they were introduced. Given the large amount of visible economic profit involved and the invisible damage that it might exert on the leading NBs being imitated, or even on those secondary NBs, the lookalike phenomenon has attracted increasing research interest from academia. As one of those research studies, we managed to fill a research gap on the phenomenon by answering a very basic question: "What makes a lookalike a lookalike?" We established a conceptual model that draws on two aspects: attributes that form the physical similarity, and context or subjective antecedents that influence the perception process.

Perceived similarity is derived from the lookalike packaging of the SBLs. Using professionally manipulated product pictures as stimuli, we established the positive link between the similarity degree of the three key attributes and the overall packaging similarity. Conducted as a pilot study, the work by Aribarg *et al.* (2014) did not consider colour as a packaging determinant of perceived similarity. The possible explanation for this lies in the fact that two selected products with clear packaging would enable them to achieve more objective results (avoiding possible biased reaction caused by the difference in colour perception). However, observing the prevalence of similar colours introduced in SBLs compared to their targeted NBs in real markets, as well as referring to Zaichkowsky (2006) and Satomura *et al.* (2014), we explored the effect of colour on perceived similarity and posited it to be the most important attribute. Through similar manipulation techniques to that of Aribarg *et al.* (2014) (controlling each of the three

dimension to be of high vs. low similarity in product pictures by a professional designer), we confirmed our expectation on colour. This result might explain why some SBs appear in real markets with all other elements distinctively designed except colour; they use the key colours of the competitive NBs in their packaging to establish the similarity link to the NBs. The results of Study 1 also contribute to point-of-sale research theories by showing which features should be stressed and to what extent they should be considered in manipulation to attract consumers' attention through creating similarity.

In addition, Study 2 extended existing consumer consideration research under the scenario of lookalike SBs by considering the influence of consumer loyalty, brand familiarity and store image on the similarity judgement process. This study empirically interpreted consumers' information accessing theories under the context of SBLs. In agreement with research results in social cognition, due to variation in the ways in which consumers interpret the information stored in their memory, the effect of the accessible information in an SBL scenario can be assimilative and contrastive. Specifically, brand loyalty acts as a contrastive effect in the process. Higher brand loyalty usually means a stronger emotional bond. Loyal consumers are more likely to process information of preferred brands and other brands in a contrastive way. In an SBL scenario, they tend to pay more attention to those distinctive parts, when comparing the preferred NBs with the SBL counterparts. As a result, consumers with higher brand loyalty would evaluate the SBL to be less similar to the NB. Nevertheless, when the lookalikes are produced by a retailer with a better store image, this leads consumers to interpret the accessible information in an assimilation process, transmitting the good perception of the store to its SBL, judging the two (i.e. the SBL and the targeted NB) to be more similar.

The results provide practical insights for managers of both SBs and NBs. Retailers, as the SB owners, introduce different packaging cues to attract consumer attention. In many of the cases, the similar packaging cues encourage consumers to link the SBLs to the NBs and cause consumers to compare the former with the latter. Such strategy enables retailers to take advantage of the NB manufacturers' investment or enhance

their negotiation power over the NB suppliers. Previous research shows that whether or not an imitation strategy leads to loss or gain greatly depends on shopping scenarios. In a non-comparative evaluation mode or an uncertain shopping situation, blatant or highly similar lookalikes are evaluated more positively and preferred by consumers (van Horen and Pieters 2013), while in comparative shopping circumstances, moderately similar lookalikes seem to be a more profitable strategy (van Horen and Pieters 2012a). Thus from the perspective of retailers, it is of great importance to manipulate the similarity degree of their SBs properly to the rival NBs, thus fulfilling their strategic target. Manipulation in the similarity of colour, size and shape, and image can enhance the aggregate perceived similarity of SBLs. The relative importance of these attributes is first colour, followed by size and shape, and finally, image. Retailers should give priority to colour in developing SB packaging to meet the positioning strategy. Given the positive link between good store image and improved perceived similarity, retailers could make every effort to establish a better store image if they intend to closely position their SBs to the NBs.

Nevertheless, the NB managers may endeavour to be distinct in their packaging from the SB followers. However, how to achieve these goals? The first study provides some insights into this question. NB managers should also focus on the three key packaging attributes, most importantly the colour of the packaging, to maintain distinction to meet their strategic demand. Furthermore, as revealed in Study 2, brand loyalty is a powerful factor to alleviate packaging similarity on consumer's perceived similarity when facing SBLs. Thus, it is of great value for the NB managers to invest in establishing and enhancing consumer loyalty. As consumers become more loyal, they are more likely to notice the distinct parts of the SBL compared to the targeted NB. Furthermore, there exists a positive relationship between brand familiarity and brand loyalty. As consumers become more familiar with the NB, their brand loyalty grows at the same time, and increased brand loyalty leads to lower perceived similarity. Thus, strategies that can improve consumers' brand familiarity may also benefit the packaging distinction strategy.

5.5.2 Price competition around store branded lookalikes within stores

The second research objective is to investigate how the lookalike packaging of SBL impacts the pricing strategies of the SBL and the targeted NB, as well as the price competition between the two of them. In addition, it also considers the pricing effects of three critical indicators: the market strength of the targeted NB, the market strength of SBs, and the concentration ratio of NBs.

The results uncover several important findings. First, there is a negative relationship between the packaging similarity and the price gap between an SBL and the targeted NB. For an SBL with higher packaging similarity to the targeted NB, the retailer will be able to price the SBL higher (confirming H9) but price the targeted NB lower (confirming H10), thereby leaving a narrower price gap between them (confirming H8). Second, the market strength of NB manufacturers has a positive effect on the price gap (confirming H11), which is interpreted by the two marketing performance indicators used. When the targeted NB has a higher sales turnover change compared to the year before, or has a higher market share in a given category, the retailers will leave a wider price gap between an SBL and this targeted NB. Third, considering the market characteristics, the price gap is negatively affected by the market power of the overall SBs in a category (confirming H12), and also negatively influenced by the concentration degree of the NBs in a given product category (confirming H13). The estimation results after rescaling reveal that, among the various factors being considered, the concentration ratio of NBs is the most significant factor that affects the price competition between SBLs and the targeted NB. These results give important new insights into various market players.

The competition between retailers and NB manufacturers has become even fiercer nowadays, given the success of SBs. Among the three-tiered SBs, the SBLs have caused long-lasting controversy between the two parties and lawsuits around this topic are not rare (Johnson *et al.* 2013; Dobson and Zhou 2014). From the perspective of NB manufactures, they are keen to prevent retailers from developing SBLs in order to free-ride on the brand identity and distinctiveness they have built through long-term investment. On the other hand, the retailers claim that it is fair to develop SBLs for the benefits of all consumers. For brand-loyal consumers, the SBLs can bring intense

competition to the NBs which will force the manufacturers to cut down their wholesale prices and thus the retail prices, while for value-conscious consumers the SBLs that possess comparable quality but much lower prices are obviously smart substitutes for the NBs.

For the retailers, the empirical results of this research challenge the common management belief that the introduction of lookalike packaging for some standard SBs would assist the retailers in pricing the NBs at higher prices. The analytical results show that as the retailers closely position the standard SB to the NB, the price of the competitive NB tends to decrease. Retailers store NBs to serve the general purpose of keeping product integrity. In addition, given the high transparency of price in today's market and the fact that various retailers commonly sell NBs, their price serves as a comparison criterion for the consumer decision of which store to visit. The decreased price of the NB becomes an advantage, helping the retailer attract consumers to visit the store, as well as maintaining and enhancing consumer store loyalty.

Nevertheless, the decreased retail price of the targeted NB does not necessarily mean a lower profit margin from the NB, since the lower price may be backed up with a lower wholesale price. In this case, it is rather the NB manufacturer, not the retailer, who faces shrinkage in profit. Unlike NB manufacturers who focus only on profit maximisation of their own NB products, retailers are seeking profit maximisation of the entire category, consisting of profits from both SBs and NBs (Hoch and Lodish 1998). The common availability of NBs in various retail stores and the transparency of prices in the market make the lower NB price an attractive lever to boost store traffic. Thus, even if the decreased price of the NB reduces the corresponding sales profit, it can be compensated for by profit obtained from other items in a given shopping list.

Dobson and Charakborty (2015), by allowing the retailers and NB manufacturers to hold a different extent of control and influence over the price setting of NBs, show that retailers will be better off positioning SBs as close as possible to that of the NBs. The analytical results of this research show consistence with this conclusion. For consumers, it is the perceived quality that matters to their purchase decision. Higher packaging similarity of an SBL encourages the switchers to expect a better quality that is

comparable to the targeted NB, thus enabling the retailer to price the SBL higher and thus be able to extract more profit from corresponding purchases.

However, choosing a proper packaging position for the SBLs requires careful consideration. Though a higher packaging similarity increases its retail price and decreases the price of the targeted NB, it signals a closer comparison between the two. If the perceived variance in quality post-consumption does not match the price gap between the two, this will either jeopardise the store image (when the perceived quality of the SBL does not meet the increased price it is marked with), or it might undermine the brand equity of the NB in the opposite situation. The results also show that a stronger retailer with a good consumer basis tends to set the price of the SBL closer to the targeted NB, thus leaving a narrower price gap between the two. In both situations, the narrower price gap between them may take away the price advantage of the SBL and undermine switchers' value perception correspondingly. Instead, if the retailer is confident about the quality of an SB, distinctive packaging will help to avoid direct comparison with the NB.

For NB manufacturers, these results provide clear evidence that the existence of the SBLs is indeed a threat to them from the perspective of pricing strategy. NB manufacturers should give priority to fighting against those highly similar SBLs since this constrains the retail prices of the NBs sold by the retailer. Lower retail prices of an NB due to the introduction of SBLs on the one hand directly shrink the profit the manufacturers can obtain while it can, on the other hand, be read as a sign of degraded quality, thus deteriorating the brand equity of the NB in the long run.

Due to the temptation to free ride on the well-established brand image and mature consumer base, NBs with strong market strength are most commonly being targeted by the SBLs. The findings show that such NBs, already having a high market share or strong sales growth, are likely to face more intense price competition from SBLs if being targeted (i.e. wider price gap between competitive NB and SBL). To attract the "switchers" from choosing NBs to considering the corresponding SBLs, retailers will leave a wider price gap between the SBLs and the targeted NBs, thus highlighting the price advantage of the SBLs.

The results show that the retailers will follow an intense competitive strategy by pricing the SBLs closer to the targeted leading NB in categories where the market power in the NBs' market is highly concentrated. However, such a strategy needs careful consideration. In well-developed or mature categories where consumer needs are either less distinctive or properly fulfilled (e.g. cola, breakfast cereal, and instant coffee), a higher concentration might mean less competitive intensity among the dominating NB manufacturers. The retailers will be better off pricing the SBL close to the targeted NB to constrain the importance of the NB in contributing to the retailers' categorical profits. This in a way decreases the NB's channel power but enhances the retailers' negotiation power. Nevertheless, in less-developed categories where consumer needs are highly distinctive or not fully served, a high concentration may be due to that only limited brand manufacturers are in the corresponding market. They should endeavour to fulfil consumers' potential demand through innovation to expand the total market size. Accordingly, the retailers will be better off packaging the SBs distinctively and pricing them higher, but avoiding price comparison with their NB counterparts.

5.5.3 Price competition around store branded lookalike cross stores

Previous research on lookalikes has mainly focused on the NB-SB competition perspective, which is drawn in the within-store competition context. Few research studies have addressed the influence of packaging similarity on competition among SBs (the cross-store competition scenario). Given the reality that, before any specific shopping task, consumers must first decide which shop to patronise, only after entering into a specific shop comes to the decision of whether to choose an NB or switch to the SB. Following this path, the cross-store competition determines whether retailers can gain some or nil profit from a given shopping list, while within-store competition means that retailers can obtain some profit somehow, but they would endeavour to achieve profit maximisation.

The third research object addresses the influence of packaging similarity on pricing policy among competing SBLs under the cross-store competition circumstance. It theoretically proposed that the pricing of SBLs and the price competition around SBLs are linked to their packaging similarity to the targeted NBs, as well as to three

contextual factors: (i) a product-level characteristic, namely SB familiarity; (ii) a retailer-level characteristic – market strength; and (iii) a market-level characteristic–retailer competition intensity.

The statistical results show that, compared to the average packaging similarity of equivalent SBLs in the marketplace, a relatively higher similarity position enables the retailer to price this SBL higher (H14), while two SBLs with closer packaging similarity will be priced closer to each other (H15). In categories where consumers have higher SB familiarity, reflected in higher purchase frequency and/or more volume purchased per trip, retailers will price corresponding SBLs lower (H16). Retailers tend to compete on the price of an SBL more closely with an opponent SBL characterised by a larger volume purchased per trip (H17). Retailers with stronger market power in a given category seem to price their SBLs relatively lower (H18), and compete on the price of SBLs more closely with the rival SBLs produced by retailers with a stronger market power, rather than compete with those from weaker retailers (H19). The concentration ratio of SBs not only leads to higher SBL prices in the category (H20) but also causes a bigger price gap between SBLs in the category (H21). The rescaling estimation reveals that, among the various factors considered in this research, the market strength of an SB (reflected by the market share of the SB) is the most significant factor that affects the retailing price of its SBL, while the gap in market strength (reflected by market share gap) existing between two SBs accounts for the most important effect on the price competition between two SBLs. These results provide important insights for various market players.

The positive relationship that exists between the packaging similarity and the price of an SBL explains why lookalike packaging is commonly preferred and widely introduced by retailers on their SBs. It also explains why some NBs are persistently being imitated by SBLs over different time periods (e.g. SBs keep chasing to imitate the packaging design of Head and Shoulders dandruff shampoo). Introducing higher-similarity SBLs enables the retailer to charge higher prices. At first glance, this strategic result actually shrinks the price advantage that some SBLs might have relative to the NB equivalent to some extent. However, from a within-store

competition perspective, one of the roles of SBLs is customer segmentation, for as long as the price does not exceed the reservation price, switchers will still choose the SBLs rather than the NBs. From this point of view, retailers would be better off positioning close to NBs, but this strategy is not a one-size-fits-all rule.

In categories that feature higher purchase frequency and/or higher purchase volume per trip, consumers are less uncertain about the products, and the packaging similarity of the SBLs acts as a trigger of comparison. Because of the common sense that NBs are always premium compared to SBs, consumers are more 'picky' and more price sensitive, and retailers have no other choice but to decrease the price as an incentive to purchase the SBLs. Thus, it is actually less beneficial to apply a close positioning strategy for SBs in highly familiar categories. Stronger retailers, as they might have a better market base and a larger consumer pool, find it easier to achieve economies of scale. Hence, they can decrease their cost of producing SBLs and sell them at lower prices. This might afford them an advantage in cross-store competition, attracting more traffic to the store as a result. High concentration of SBs in a given market allows the retailers to price SBLs higher. This may be partly because the more the market power is concentrated among dominant retailers, the more likely that they will cooperate to achieve a higher joint profit. A higher concentration ratio also means a better consumers basis so that they can target SBLs to different consumers, rather than competing intensely with each other. To this end, it is less beneficial to follow a close position strategy in less concentrated categories.

The empirical results of the third research question provide valuable insights for NB manufacturers as well. Contention around the issue of SBLs between NB manufacturers and retailers has never ceased since their introduction (Johnson *et al.* 2013; Dobson and Zhou 2014). This study empirically shows evidence for NB manufacturers that, regardless of all other marketing indexes, if only the packaging design is considered, SBLs, by free riding on their packaging, achieve higher sales prices. Given a well-established consumer base and wide penetration, it is more harmful if stronger retailers launch an SBL rival to an NB product. As they may enjoy a lower cost through economies of scale, this generates a wider price gap with respect

to the NB product. Such an advantage makes it easier to persuade more switchers to choose SBLs and to take more profits from NB manufacturers.

However, in categories where consumers' familiarity is high, the packaging similarity of SBLs actually triggers consumers to be pricing sensitive. This pushes retailers to lower the price of the corresponding SBLs, leaving a lower margin for the retailers. The shrinking profit may prevent retailers from introducing SBLs in the category. From this angle, NB manufacturers should put more effort into advertising and promoting their brands to improve consumers' familiarity.

When considering only the influence of packaging design and pricing strategy, the results of the third question show that highly similar packaging of some SBLs, compared to that of leading NBs, harms consumers' welfare. Though increased packaging similarity in a way assists consumers to alleviate uncertainty about SBs, it also leads to higher prices. Only if it is certain that higher similarity also means higher quality, is the SBL of good value. However, to date, no research has empirically supported the notion that higher similarity also means higher quality. Thus, from the consumers' perspective, they should combine various sources of marketing information for decision making regarding SBLs rather than merely depending on the packaging cues. Then, consumers would be better off when there is a lower concentration ratio (higher competition intensity) among retailers, as it always lowers the prices of SBLs. Thus, in the long run, for their own good, consumers should shop around to maintain the necessary competition tension among various retailers and not let one retailer dominate the market or even become a monopoly.

Chapter 6 Conclusion

6.1 Introduction

In 2011 and 2012, two reports commissioned by the British Brands Group (BBG 2011; 2012) to investigate the store brand lookalikes (SBLs) in the UK market were published. They provided examples of leading retailers such as Tesco, Asda, Sainsbury's, Morrison's, Boots, and Superdrug among the list that have produced and sold SBLs in their stores. The evidence suggested close positioning strategy on store brands (SBs) as being widely adopted by retailers. It is, though, less clear why and how an SB is perceived to be a lookalike to the NB. Furthermore, the overall market outcome of the introduction of lookalike packaging on SBs is also not clear cut, especially its effects on pricing policies. This thesis seeks to offer some answers to these questions and provides several new and perhaps counterintuitive insights to improve our understanding of this prevalent marketing phenomenon.

This concluding chapter of the thesis summarises the key findings and contribution to the literature (section 6.2). The chapter then discusses the implications for marketing theory and practice, followed by some practical suggestions for various market players including retailers, NB manufacturers, and policy makers (section 6.3). Finally, the chapter outlines some limitations of the analysis and offers suggestions for future research (section 6.4).

6.2 Summary of the key findings

Existing marketing research on the lookalike phenomenon has been addressed from various perspectives. Much of the research has focused on consumer confusion and emphasized the threat posed by lookalikes with high similarity (Burt 1999; Foxman 1990; Howard 2000; Loken 1986; Kapferer 1995; Rafiq and Collins 1996). Recent research has shown that if properly manipulated, retailers can benefit from producing SBLs of different degree of similarity, with the consequence that NB manufacturers and their lawyers should not only focus on blatant lookalikes since moderately similar or subtly imitated lookalikes in some circumstance can be even more harmful (van Horen and Pieters 2012a; van Horen and Pieters 2013). By examining the mechanisms underlying the consumers' similarity perception process when facing SBLs, together with the effect of packaging similarity of SBLs to the targeted NB on

the pricing policies of both of them, and also the effect on the price competition between paired SBLs and NBs, and between competing SBLs, this thesis contributes to the existing literature in five significant ways. First, it shows that colour is the most important packaging element that determines the physical similarity of SBLs. Second, it reveals how various contextual indicators, such as brand loyalty, brand familiarity, and store image, can moderate the similarity perception process. Third, it demonstrates that the close packaging position of an SBL to a targeted NB will intensify the price competition between the NB manufacturer and the retailer. Fourth, it points out the close packaging position of two SBLs to a commonly targeted NB will bring tighter price competition between the two retailers. Fifth, higher packaging similarity of an SBL to a targeted NB will cause a higher retail price of the former but a lower retail price of the latter. These insights are analysed empirically in detail in the studies conducted relating the three central research questions.

The first central research question investigated the factors which affect consumers' similarity perception when facing SBLs. The argument posited was that the similarity perception is initially derived from physical similarity of an SBL's packaging to that of the targeted NB. The prediction is then that the extent to which physical similarity is processed further depends on several contextual characteristics. This is examined with two studies. In line with the predictions, the first study showed that the three packaging elements identified, namely colour, size & shape, and image, all exert a positive influence on the packaging similarity of an SBL to the targeted NB. Amongst them, colour is the most important determinant, and followed by the effects from size & shape, and then by image. The second study revealed that since higher brand loyalty triggers a contrastive evaluation approach, this results in lower perceived similarity on the paired SBL and NB. In contrast, a better store image induces an assimilation path, thus makes consumers perceive the SBL produced by the retailer to be more similar to the NB. Furthermore, consumers' brand familiarity showed a positive effect on their brand loyalty, such that as consumers become more loyal to the brands, then they perceive the SBL to be less similar to the NB.

These results add to the literature by showing that colour is an important extrinsic cue in generating a similarity link between two objects. Conducted as a pilot study to

generate stimuli for their main research, Aribarg *et al.* (2014) reveal the importance of the product label (which is substituted by the indicator 'image' in this thesis), shape, and brand name on perceived similarity. Such results may be due to the consideration of avoiding bias in reaction towards colour, and note that the two products they applied as stimuli were both with clear packaging. However, observing the use of similar colours in SBLs to their targeted NBs in real markets, as well as referring to Zaichkowsky (2006) and Satomura *et al.* (2014), the research here added colour as one of the key packaging elements. Then, on the basis that majority of SBLs in the market are labelled with a distinctive brand name, the last factor mentioned by Aribarg *et al.* (2014) was removed. The final results confirmed the importance of colour, which explains why some SBs, with all other elements distinctively designed adopting similar themed colours to the competitive NBs, can cause a similarity perception that link to the NBs.

Furthermore, the analysis here contributes to the literature by demonstrating that context matters. Due to variances in respect of brand loyalty, brand familiarity and perceived store image, consumers' similarity perceptions differ when facing the same SBL. Referring to research results in social cognition, the way consumers process the physical attributes of SBLs can be contrastive or assimilative. Specifically, brand loyalty acts as a contrastive effect in the process. Loyal consumers with higher brand loyalty are more likely to develop stronger emotional bonds with the brand, thus they evaluate the SBLs in a contrastive way. They tend to pay more attention to those distinctive aspects when comparing the SBL with their preferred NBs. Consequently, consumers with higher brand loyalty tend to evaluate the SBL to be less similar to the NB. Nevertheless, when the SBLs are produced by a retailer with a strong store image, it can lead consumers to interpret the accessible information in an assimilation manner, focusing more on those overlapping parts, leading them to judge the two (i.e. the SBL and the targeted NB) to be more similar.

The second research question investigated how the lookalike packaging impacts the pricing strategies of both the SBL and the targeted NB, as well as the price competition between the two of them. It considers the pricing effects from three critical indicators: the market strength of the targeted NB, the market strength of SBs,

and the concentration ratio of NBs. The results showed that when a retailer produces an SBL with high packaging similarity, it would draw close matching prices between this SBL and the targeted NB. For an SBL with higher packaging similarity to the targeted NB, the retailer will leave a narrower price gap between the SBL and the targeted NB by price the former higher but price the latter lower. Furthermore, as interpreted by two marketing performance indicators, the market strength of NB manufacturers positively affects the price gap. For NBs that have a higher sales turnover change compared to the previous year, or have higher market shares in a given category, the retailers would leave a wider price gap between the SBL and the targeted NB. Third, when considering the market characteristics, the price gap is negatively affected by the market power of the overall SBs in a category, and also negatively influenced by the concentration degree of the NBs in a given product category.

The findings of the secondary question contribute to the existing literature by showing that packaging positioning of SBs affects the price competition between NB manufacturers and retailers. Furthermore, it reveals that the pricing policies of the NBs and the SBs and the price competition between the two can be moderated by several key performance characteristics, such as the targeted NB manufacturer's market strength, the general market strength of the SBs, and the competition intensity in the NBs' market.

The third research question investigated price competition amongst SBLs related to their degrees of similarity with the targeted NBs. To obtain certain profit from a consumer's shopping lists, a retailer needs to first compete with other retailers to successfully attract the consumer to visit to its store, which is about cross-store competition. Only then it would have the opportunity to present choices to the captured consumer over the SBL and NB prices to achieve profit maximization. However, previous research on SBLs has mainly focused on the NB-SB competition perspective, which is concerned with the within-store competition context. Few studies have investigated the cross-store competition perspective. To fill this gap, this research addresses the influence of packaging similarity on pricing policy among competing SBLs. The analysis showed that, compared to the average packaging

similarity of equivalent SBLs in the marketplace, a relatively higher similarity position enables the retailer to price this SBL higher, while two SBLs with closer packaging similarity will be priced closer to each other. In categories where consumers have higher SB familiarity, reflected in higher purchase frequency and/or more volume purchased per shopping trip, retailers will price corresponding SBLs lower. Retailers tend to compete on the price of an SBL more closely with an opponent SBL characterised with a larger volume purchased per shopping trip. Retailers with stronger market power in a given category seem to price their SBLs relatively lower, and compete on the price of SBL more closely to the rival SBL produced by retailers with stronger market power rather than compete with those from weaker retailers. The concentration ratio of SBs is not only associated with higher SBL prices in the category but also with wider price gaps between SBLs in the category.

The analysis of the third question adds to the existing literature in three ways. First, it sets out a clear distinction between in-store competition and cross-store competition. As such, it shows the strategic importance of SBs in assisting retailers to win the cross-store competition that determines whether a retailer can obtain any profit from a given shopping list (i.e. a consumer decides to visit the retail store) or not when the consumer shops elsewhere. Second, it shows how the packaging similarity of the SBs to the common targeted NB impact the price battle among these competing SBs. Third, it also highlights the necessity of considering the influence of several frequently mentioned marketing performance indicators in this price competing process and these moderate or accentuate the packaging similarity effect.

To summarise, the research in this thesis revealed how antecedents affect the similarity perception process and how packaging similarity affects retailers' pricing policies. The analysis showed that whether consumers perceive an SB to be a lookalike is initially derived from the physical similarity of its packaging, which is primarily determined by the colour, size & shape, and image. How consumers make use of the physically similar packaging of the SBL to generate a final similarity perception depends on these consumers' degree of brand loyalty, brand familiarity, and the retailers' store image. Furthermore, the perceived packaging similarity of SBs

will affect price competition between the SBs and those NBs they imitate, as well as among competing SBs. All these effects were tested in numerous product categories from various leading grocery retailers in UK, which adds a degree of reassurance about the generality of the studies conducted in this thesis.

6.3 Strategic implications for various stakeholders

The research results reported in this thesis have practical and strategic implications for various stakeholders involved. The results suggest that how manufacturers of SBLs (usually the retailers) can develop SBLs to attain different degrees of packaging similarity and how manufacturers of leading NBs can design their packaging distinctively against imitation. In addition, the results demonstrate the effects of packaging similarity on pricing policies of both the SBs and the NBs, and on the price competition between SBs and NBs and among SBs. The effects of several commonly introduced marketing indicators in relevant studies, including market strength of the NBs and the SBs, brand familiarity of the NBs and SBs, relative power of the brand manufacturers and retailers, and concentration ratio in the NB market and the SB market, were also considered in the price competition between SBs and NBs and amongst SBs. These results suggest that some beliefs about the pricing influence of SBs need to be reconsidered.

6.3.1 Some recommendations for retailers

The results suggest SBL designers can focus primarily on three key packaging elements to manipulate the similarity of the SBLs to the NB they intend to mimic. Retailers introduce lookalike packaging features from NBs for their SBLs either with the purpose of taking advantage of the NB's product investment or to enhance their negotiation power over the NB suppliers. It is evident that whether the lookalike strategy leads to loss or gain greatly depends on the shopping context (van Horen and Pieters 2012a, 2012b; van Horen and Pieters 2013). In a non-comparative or an uncertain shopping situation, blatant or high similar lookalikes are evaluated more positively and preferred by consumers, while in a comparative or familiar shopping circumstance, moderate similar lookalikes seemed to be more profitable strategy. Thus it is of great importance for retailers to manipulate the packaging similarity of

their SBLs to the competing NBs properly according to their strategic target. Retailers should focus on manipulating the three key packaging elements, namely the colour, size & shape, and image to meet the positioning strategy. Amongst these three elements, colour has the most significant effect in establishing similarity perception between SBLs and the targeted NBs. Retailers therefore should give priority to colour in developing SBLs. Also, given the positive link between good store image and improved similarity perception, retailers should make every effort to establish a better store image if they are targeting at closely positioning their SBs to the NBs to gain a pricing advantage.

The findings show that the introduction of lookalike packaging on SBs enables the retailer to price the competitive NB lower. The high price transparency of the NBs makes the lower NB price an attractive lever to boost store traffic. The lower retail price of the targeted NB does not necessarily mean a lower retail margin as it may be based on lower wholesales price if the retailer's bargaining leverage over the NB producer is enhanced by the presence of a strong SBL. In this case, the enhanced retailer bargaining power can push down the wholesale price and still allow for a healthy margin with a lower retail price on the NB. Even if the gain on bargaining power is modest and the retailer cuts its margin on selling the NB, then there might be compensation by higher sales volumes if the lower price boost store traffic, especially when the additional footfall serves to boost the sales of other, complementary products as well that go into the shopper's basket.

However, the retailers should take careful consideration in choosing a proper packaging position for the SBLs. Though higher packaging similarity can support a higher retail price and constrains the price of the targeted NB, it also triggers consumers to pay closer attention in comparing the two goods. If the consumption experience of the SBL failed to match the expectations for a "switcher" consumer, with the expectations influenced by a narrower price gap between the two, then it could actually harm the store image of the retailer. The results also show that a retailer with a strong consumer base tends to set the price of SBL closer to the targeted NB, thus leaving a narrower price gap between the two. However, this may take away the price advantage of the SBL and undermine switchers' value perception

correspondingly. Instead, if the retailer is confident with the quality of an SB, it could be better off packaging the SB distinctively to avoid direct comparison with the NB.

From a within-store competition perspective, one of the roles of SBLs is customer segmentation, as long as the price does not exceed their reservation price, switchers will still choose the SBLs rather than the NBs. From this point of view, retailers will be better off positioning SBLs close to NBs. But this strategy is not a one-size-fits-all rule. In categories that feature higher purchase frequency and/or higher purchase volume per shopping trip, consumers are less uncertain about the products then the packaging similarity of the SBLs may serve as a trigger for comparison. Because it is common practice that NBs are sold at premium prices over SBs, where consumers to be more 'picky' and price sensitive about SBs, retailers have no other choice but to widen the price gap between the two goods as an incentive to purchase the SBLs. Thus, it can be less beneficial to apply a close positioning strategy for SBs in highly familiar categories. As it is easier for stronger retailers to achieve economies of scale, they are able to decrease their cost of producing SBLs and sell them at lower prices. This might afford them an advantage in cross-store competition, boosting store traffic. Yet, in categories that market share of the SBs are highly concentrated among dominant retailers, the retailers tend to price SBLs higher. This may be partly because the higher market share that dominant retailers enjoy then the less competing force they need to deal with from other retailers, and so then the more flexible they can be to set higher prices for their SBLs to achieve a higher profit. Higher market share also means a larger consumer base. This can then allow the retailer to target their SBLs at different consumers rather than having the NB and SB competing intensely against with each other for the same set of consumers. In contrast, for product categories where the market shares is more evenly distributed among various retail competitors, such that the market is less concentrated, there might be less benefit from following a close position strategy (i.e. introducing very similar SBLs).

The findings show that in categories where the concentration ratio in the NB's product market is high (i.e. market shares across the different products are high and/or skewed), retailers will follow an intense competing strategy by pricing the SBLs and the targeted NB (usually a leading NB in the category) closer. However, such a

strategy requires careful consideration depending on whether such categories are well developed or less mature. In mature categories, where the market is well developed and consumer needs are either less distinctive or fully catered for, such as long established products with little innovation or new product development over time, retailers will be better off pricing the SBLs and the targeted NB closer if the concentration ratio is high. The narrower price gap will cut down the importance of the NB in composing the categorical profit to the retailer thus to constrain the NB manufacturer's channel power¹¹. However, in a less mature markets where consumer needs are still forming or not fully served, then a high concentration ratio may arise from a small overall market size as well as when there are limited manufactures present in the product market. The retailer should endeavour to fulfil consumers' potential demand through developing qualified SB products with distinctive packaging, which enables them to price the SB higher but avoid direct comparison with the NBs.

6.3.2 Some recommendations for national brand manufacturers

First, as NB manufacturers may endeavour to maintain distinction in their packaging from being imitated by SBs, their manipulation focus should be on the three key packaging elements studied, but most importantly the theme colour of the packaging. Brand loyalty is seen as a powerful factor that leads consumers to follow a contrastive path and focus more on those distinctive aspects when facing SBLs. Thus it is of critical importance for the NB managers to invest in establishing and enhancing consumer loyalty. Furthermore, as consumers tend to be more brand-loyal when they become more familiar with the NB, the increased brand loyalty in turn leads to lower similarity perception on SBLs. Thus, NB managers should also work on improving consumers' brand familiarity through various ways (e.g. advertising, free sample trials, coupons for repeat purchases, etc.).

Second, NB manufacturers should prioritise fighting against the most similar SBLs, since it is these types of SBs that have the strongest effect in constraining the retail

¹¹ If the narrower price gap is due to higher retail price of the SBL, it brings the retailer higher margin from the SB. Alternatively, if the narrower price gap is due to lower price of the targeted NB, then it means lower margin can be obtained from the NB. Both situations decrease the importance of NB in contributing the categorical profit for the retailer, thus constrain the NB's channel power.

prices of the NBs sold by the retailer. Lower NB retail prices encourage the retailer to put added pressure on manufacturers to lower wholesale prices and, if they concede, shrink their profits. Lower NB retail prices, in addition, can be read as sign of degraded quality, thus deteriorating the brand equity of the NB in the long run. Due to free riding on the well-established brand image, NBs with a strong market presence, reflected by a high market share or with strong sales growth, are likely to be the most common targets for the SBLs. In order to induce the “switchers” from choosing the NBs to considering the SBLs as acceptable substitutes, retailers would be willing to sacrifice more on the prices of those SBLs targeting the strong NB competitors, leaving a wider price gap between the SBLs and the NBs to highlight the price advantage of the SBLs.

Third, NB manufacturers should closely monitor SBLs and be prepared to take legal action against SBLs produced by stronger retailers to protect their intellectual property rights. Given its strong consumer base and wide market penetration, it is more harmful if a stronger retailer launches an SBL rival to a NB product. Such a retailer may enjoy a lower cost through scale economies compared to its smaller retailer rivals, so can afford to run with a lower SB price and leave a wider price gap compared to the NB product. The price advantage makes it easier to persuade more switchers to choose SBLs and take more profits away from NB manufacturers. Therefore, NB manufacturers should pay particular attention to monitor and be prepared to strike back against any SBLs from stronger retailers, even if these retailers represent their most important retail customers for the sake of the long-term profitability and viability of the NB producer.

Fourth, NB manufactures should work on improving consumers’ brand familiarity in regards of price competition between them and the SBLs. In categories where consumers’ brand familiarity is high, the packaging similarity of SBLs can cause consumers to be price sensitive. This pushes retailers to lower the price the corresponding SBLs, leaving a lower margin for the retailers. The loss of profit may prevent retailers from introducing SBLs in the category in the first place. From this angle, NB manufacturers should put more effort into advertising and promoting their brands to improve consumers’ familiarity and ensure that there is always a perceived

difference between the NB and any SB.

6.3.3 Some recommendation for policy makers

This thesis raises important insights for public policy, highlighting the need to strengthen intellectual property rights (“IPRs”) relating to the different packaging elements. Given the continuous presence and persistence of SBLs and evidence showing possible harm to consumers from confusion, it appears that the present legal protection is insufficient (Johnson *et al.* 2013; Dobson and Zhou 2014; Rafiq and Collins 1996). The empirical results of this thesis show that though the three packaging elements studied all show positive impact on consumers’ similarity perception when facing SBLs, while the effect of colour is significantly more important than the other two. This suggests that policy makers should give special attention to this particular factor in considering IPRs. This involves a balancing act with appropriate freedom to manipulate these packaging elements in the product design, so as not to restrain effective competition but sufficient restriction to stop harmful intentional imitation.

Besides IPR protection, a further and more controversial policy would be to allow the NB manufacturers to have some control on the retail prices of their own products to deal with the SBL challenge. The results in this thesis show that the adoption of lookalike packaging in SBLs could allow retailers to deliberately mark up the SBLs but push down the prices of the competing NBs. The cost in offering the NBs at lower retail prices may be transferred to the NB manufacturers given the great buyer power of modern retailers. Moreover, the lower price of a NB in one retailer is likely to influence the prices of the same NB sold by other retailers. As response, those retailers may cut the retail price of this NB accordingly (to meet the cross-store competition). This in turn will further hurt the NB manufacturers, potentially to a level which undermines their investments in product design. By allowing NB manufacturers to set or influence their own product prices, say through enforceable resale price maintenance (RPM), then they might at least restrict behaviour by retailers that undermines their price position.

Nevertheless, such a policy measure would represent a significant policy turnaround

where in the last fifty years or so most competition authorities have fought against RPM, seeing it as a vertical restraint which directly prevents intra-brand price competition and with the potential to soften inter-brand competition and perhaps support dealer cartels. However, perhaps times have sufficiently changed, where NB manufacturer power is now more greatly constrained and held in check by retailer buyer power to such an extent that there is less risk to competition from allowing NB producers having the ability to directly influence the retail prices of their own products when retailers might otherwise seek to manipulate retail prices in such a way as to undermine competition (Dobson and Chakraborty 2015).

6.4 Limitations and future research

While the thesis makes academic and managerial contributions, there are several limitations of this thesis which need to be acknowledged. The first limitation lies in the research context, given that all studies in this thesis were conducted in the UK market. Though the results relate to the basis of numerous common FMCG products from the most representative leading retailers in UK, it is not clear whether these results would apply in different markets. It would be worthwhile to test the same framework in a different market (e.g. different country contexts). For example, regarding the packaging elements determining the physical similarity, it would be interesting to see if consumers in different cultural or ethnic backgrounds would react differently in the change of three packaging elements.

Another limitation is the choice of research instrument. In this thesis, all the instruments introduced in those primary surveys were product pictures. Though this can represent the online shopping environment scenario quite well, it is quite distinct from real shopping circumstance where consumers can feel and handle as well as see the products from different angles. Also referring to the reality that living in an era of information overload, it is normal to see consumers make purchase decisions within seconds without careful inspection, in online or real in-store shopping contexts. The research methods used are then justifiable to meet our current research scenario, but best considered in an online context. However, future research could introduce real products as stimuli to see if handling products or viewing them from different angles

makes a difference.

A third limitation is that the primary data collected are based on self-report questionnaires. Future research might consider introducing objective techniques, for example, the functional magnetic resonance imaging (fMRI) that has been applied in neuron-marketing, to assess consumer perceived similarity from the three packaging aspects, as well as test consumer loyalty and brand familiarity objectively. Although such approach may also suffer from subjective bias such as that caused by the dialogues interpreting the tasks for the participants. Even so, such an approach has the potential to offer a valuable complementary approach to the questionnaire data collected here and could provide illuminating results on consumer's thinking and processing of images of lookalikes.

A fourth limitation recognised also regards the data used in this research. The analyses on price competition between SBLs and NBs and among SBLs are sourced from the same datasets. The datasets were combined by a primary data collected through survey and two secondary datasets provided by independent market investigation authorities. Though the data covers a wide range of product categories, consisting of 75 grocery product types in four representative retailers in the UK, the three datasets are all cross-sectional data that provide only a snapshot of the product packaging, their matched prices and marketing performance. The current research with such data offers only static answers for all questions explored. Future research could extend this research by introducing time-series data monitoring on SBLs, to consider changes in their design and/how similarity perceptions shift over time.

A fifth limitation regarding the price competition between SBLs and NBs lies in it included only the degree of packaging similarity when considering the product characteristics. This is reasonable as we are now at the very beginning of investigating the marketing outcome of the introduction of SBLs (to our knowledge, this study is the first that addresses the price influence of the lookalike phenomenon), and it is the lookalike packaging of the SBLs that has caused the long lasting legal battle between the owners of the lookalikes (the retailers) and their "sufferers" – usually the NB leaders. However, future research can expand on the current model by including

another key dimension of product characteristics – quality. It is repeated purchases that sustain the existence of lookalikes, and only when switchers' post-purchase consumption experience meets their quality expectation would they choose to buy them again and again. To this end, it is interesting to investigate how the three key factors of the marketing mix, namely the lookalike packaging, the quality and the price, interact with each other in the competition between retailers and NB manufacturers around SBLs.

In this thesis, several important issues relating the SBL phenomenon have been studied, but there are some unexplored aspects worth developing to expand on this interesting topic.

First, there is scope for future research to include other packaging elements and extra consumer characteristics or contextual factors into the model to test how the combined effect would influence the similarity perception. Second, the focus of the present study is essentially about vertical differentiation on a quality or similarity scale, rather than horizontal differentiation about positioning differences amongst the set of products. In this study, the benchmark for all SBLs is the leading NB. All three SBLs in the same category with the same packaging similarity score, say 4 out of 7, might give the impression that they all look alike, but they may actually differ in various ways from the NB (e.g. one might have the same colour, another the same shape, and yet another a similar logo/name but in other respects be different). This could mean that the products are 'horizontally differentiated' but not 'vertically differentiated' from each other, where the latter implies a rank order in terms of quality shared by consumers, whereas the former implies that different consumers prefer different products (with no overall quality ranking). What would be interesting for future studies to test is whether the price gap is wider with vertical differentiation than with horizontal differentiation. In addition, if there is a price gap with horizontal differentiation (i.e. where the degrees of similarity are all very close for the product type), then it might be interesting to see why. For example, one of the key differentiating attributes could be an element that consumers might pay more for, e.g. colour, shape, image, etc., relative to the NB. If so, then there could offer interesting management implications for designing products that have a strong feature that

consumers would be prepared to pay more for in a horizontal differentiation sense. However, for horizontal differentiation, it might be the overall distinctiveness or uniqueness of the SB, as a unique and difficult to define combination, that matters for pricing and so examining whether it is one or multiple elements that appeal to different consumers in different ways might be an interesting research avenue to explore.

Third, in terms of consumer characteristics, store loyalty might be an important indicator influencing pricing strategy and price competition around SBLs, as SBs are exclusively sold and only available in stores under the name of the specific retailer. Consumers with higher store loyalty usually show higher loyalty to the SBs sold by these retailers as well. The exclusivity of SBs precludes direct price competition from other SBs, which makes the “store loyals” become less price sensitive and might finally justify the mark-up of SBLs in the given store. Further research should explore this factor and the possibilities of the relationship that hypothesised in this study. Another dimension worth considering is the quality of SBLs. By introducing similar packaging to a well-known NB, retailers aim to signal comparable intrinsic quality to that of the NB. Does this indeed occur? Future research is needed to offer answers to this question.

Fourth, future research could expand the current model by including another key dimension of product characteristics – intrinsic product quality (e.g. the physical composition, ingredients and formula used to make up the product). Although the lookalike packaging of SBLs are criticised as being an important source of consumer confusion, packaging alone cannot be the sole cause of their success and sustaining sales to consumers. Repeated purchases validates the fact that the SBLs and the leading brand, although similar to different extent, still show clear difference to avoid consumer confusion (Warlop and Alba 2004; Szymanowski 2009). Even though a consumer might be confused by the lookalike packaging of an SBL for the first purchase, it is unlikely to happen repeatedly as this consumer would take a lesson from any previous mistake and correct his/her behaviour in the subsequent shopping trips. In most circumstances, consumers deliberately select SBLs from time to time. It is repeated purchases that sustain the existence of lookalikes, and only when

switchers' post-purchase consumption experience meets their quality expectation would they choose to buy them again and again. To this end, it would be interesting to investigate how the three key factors of the marketing mix, namely the lookalike packaging, the intrinsic product quality and the price, interact with each other in the competition between retailers and NB manufacturers around SBLs. This requires separating consumers' perceptions of packaging quality from tests on intrinsic product quality aspects (e.g. determined by blind taste/use tests) and how these relate to price adopted by retailers. This is not an easy matter when packaging perceptions might well influence taste perceptions through the framing effect the packaging look gives the consumer before the actual consumption take place, but it provides a very interesting avenue for research because it might have provide some deep insights into what packaging suits a particular product and how adjusting that packaging might influence product quality perceptions when consumers come to use/consume the product. Indeed, perhaps SBLs not just look better than non-lookalikes but are perceived to taste better, so reinforcing the likelihood of repeated purchases. If so, then gives a further reason why retailers might seek to position their SBLs very similar to leading NBs.

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Appendices

Appendix 1 Product packaging produced as the experiment stimuli

Leading Brand						
Manipulation	Colour	Size & shape	Image	Colour	Size & shape	Image
Level 0: No manipulation (the original packaging)						
Level 1: manipulation is made on respective packaging elements						

Appendix 2 Mplus code

CFA Model

TITLE: CFA model

DATA:

File is 'data file path';

VARIABLE:

Names are

id p_id
pl
bf_know bf_info bf_fami bf_expe
bl_abse bl_sale bl_loya
si_price si_qual si_serv si_conv si_imag
age gender gi edu shopper ;

Missing are . ;

CLUSTER = p_id;

USEVARIABLES ARE

bf_info bf_fami bf_expe
bl_abse bl_sale
si_price si_qual si_serv;

ANALYSIS:

TYPE=COMPLEX;

MODEL:

bf by bf_info bf_fami bf_expe;
bl by bl_abse bl_sale;
si by si_price si_qual si_serv;
bf_expe with bf_info bf_fami

OUTPUT:

SAMPSTAT
MODINDICES
TECH2 TECH3 TECH4
STANDARDIZED (STDYX);

M0 (mediation but not moderation)

Data:

File is 'data file path';

Names are

id p_id
pl

```

    bf_know      bf_info      bf_fami      bf_expe
    bl_abse      bl_sale      bl_loya
si_price      si_qual      si_serv      si_conv      si_imag
age      gender      gi      edu      shopper ;
    Missing are . ;
    CLUSTER = p_id;
USEVARIABLES ARE
    pl
    bf_know      bf_info      bf_fami      bf_expe
        bl_abse      bl_sale
        si_price      si_qual      si_serv;
ANALYSIS:
ESTIMATOR=MLR;
TYPE=COMPLEX;
MODEL:
    !measurement structure
    bf by  bf_info      bf_fami      bf_expe;
    bl by  bl_abse      bl_sale ;
    si by  si_price      si_qual      si_serv;
    !correlations
    bf_expe with bf_info bf_fami;
    !pths
    bl on bf;
    pl on bf;
    pl on bl;
    pl on si;
    !variances (according to the default setting, as the following latent variables all
indicate to a second-order latent variable –“pl”, their residual variance are fixed at 0.
Then, the following three statements mean that the residual variances are free
parameters to be estimated using default starting values, similar manipulation can also
be found in Maslowsky, Jager and Hemken (2014)).
    bf;
    bl;
    si;
OUTPUT: SAMPSTAT
        MODINDICES
        TECH1 TECH4
        RESIDUAL
        STANDARDIZED(STDYX);

```

PLOT:

TYPE is PLOT3;

MI (both mediation and moderation)

Data:

File is 'data file path';

Names are

id p_id
pl
bf_know bf_info bf_fami bf_expe
bl_abse bl_sale bl_loya
si_price si_qual si_serv si_conv si_imag
age gender gi edu shopper ;

Missing are . ;

CLUSTER = p_id;

USEVARIABLES ARE

pl
bf_info bf_fami bf_expe
bl_abse bl_sale
si_price si_qual si_serv;

DEFINE:

STANDARDIZE (As standardized regression coefficients are not provided by Mplus for latent moderating structural modeling. Following suggestions by Klein and Moosbrugger (2000) as well as Maslowsky, Jager and Hemken (2014), we standardized the data prior to the analysis, then the beta coefficients obtained latter were standardized results we were after.)

pl
bf_info bf_fami bf_expe
bl_abse bl_sale
si_price si_qual si_serv;

ANALYSIS:

ESTIMATOR=MLR;

TYPE=COMPLEX RANDOM;

ALGORITHM=INTEGRATION;

MODEL:

!measurement structure

bf by bf_info bf_fami bf_expe;
bl by bl_abse bl_sale ;

```

si by si_price si_qual si_serv;
!correlations
bf_expe with bf_info bf_fami;
!pths
bl on bf;
pl on bl (b1);
pl on bf (b2);
bf_1 | bf XWITH bl;
pl on bf_1 (b3);
pl on si;
!variances
bf;
bl;
si;

```

```

OUTPUT: SAMPSTAT
      MODINDICES
      TECH1 TECH4
      RESIDUAL
      TECH1 TECH8;

```

Plot:

```
type = plot2;
```

M2 (Control variables included based on M0)

Data:

File is 'data file path';

Names are

```

id          p_id
pl
bf_know     bf_info     bf_fami     bf_expe
bl_abse     bl_sale     bl_loya
si_price    si_qual     si_serv     si_conv     si_imag
age         gender      gi          edu          shopper ;

```

Missing are . ;

CLUSTER = p_id;

USEVARIABLES ARE

```

pl
bf_info     bf_fami     bf_expe
bl_abse     bl_sale

```

```

si_price    si_qual    si_serv
age gender  gi  edu    shopper;
DEFINE:
  STANDARDIZE
    pl
    bf_info  bf_fami  bf_expe
    bl_abse  bl_sale
    si_price  si_qual si_serv;
ANALYSIS:
ESTIMATOR=MLR;
TYPE=COMPLEX;
MODEL:
  !measurement structure
  bf by  bf_info    bf_fami    bf_expe;
  bl by  bl_abse    bl_sale ;
  si by  si_price    si_qual    si_serv;
  !correlations
  bf_expe with bf_info bf_fami;
  !pths
  bl on bf;
  pl on bf;
  pl on bl;
pl on si;
  pl on age  gender  gi  edu    shopper;
  !variances
  bf;
  bl;
  si;
OUTPUT: SAMPSTAT
        MODINDICES
        TECH1 TECH4
        RESIDUAL
        STANDARDIZED(STDYX);
PLOT:
  TYPE is PLOT3;

```

Appendix 3 The 75 brands identified for the online survey

No.	Brand name	Product name	Group
1	Coca-Cola	Coca Cola (2L)	0*
2	Heinz Beanz	Heinz Reduced Sugar and Salt Baked Beanz in Tomato Sauce (415g)	0*
3	Persil	Persil Small and Mighty Biological Colour Liquid 2x Concentrated - 18 Washes	0*
4	Hovis	Hovis Medium Sliced Wholemeal Bread (800g)	1
5	Nescafé	Nescafe Gold Blend Decaffeinated (200g)	1
6	Lucozade	Lucozade Energy Orange (1L)	1
7	Robinsons	Robinsons Fruit Orange Squash (1L)	1
8	Ariel	Ariel Actilift Biological Excel Gel - 24 Washes (888ml)	1
9	Princes Fish	Princes Tuna Chunks in Brine (160g)	1
10	Cravendale	Cravendale Skimmed Milk (2L)	1
11	Dolmio	Dolmio Bolognese Sauce - Original (500g)	1
12	McVitie's Digestives	McVitie's Digestive Biscuits (500g)	1
13	Haribo	Haribo Jelly Babies (150g)	1
14	Magnum	Wall's Magnum Classic (3x110ml)	1
15	Pot Noodle	Pot Noodle Chicken and Mushroom Flavour (90g)	1
16	Heinz Soup	Heinz Classic Cream of Tomato Soup (400g)	2
17	Galaxy	McVitie's Galaxy Caramel Cake Bars (5)	2
18	Young's frozen fish	Young's Chip Shop Large Haddock Fillets in Crisp Bubbly Batter (4 per pack - 480g)	2
19	Mr Kipling	Mr Kipling Bramley Apple Pies (6)	2
20	Doritos	Walkers Doritos Cool Original (225g)	2
21	Ribena	Ribena Blackcurrant Drink (1L)	2
22	Bold	Bold 2in1 Gel Lavender and Camomile Concentrated - 24 Washes (888ml)	2
23	Heinz Tomato Ketchup	Heinz Top Down Tomato Ketchup (570g)	2
24	Glade	Glade Aerosol Essence of Nature Clean Linen (300ml)	2
25	Aunt Bessie's potatoes	Aunt Bessie's Homestyle Roast Potatoes (907g)	2
26	McVitie's biscuits	McVitie's Classic Rich Tea Biscuits (300g)	2
27	Dettol	Dettol Power and Pure Bathroom Spray (750ml)	2
28	Warburtons	Warburtons Crumpets (6)	3
29	Walkers Crisps	Walkers Baked Cheese and Onion (6x25g)	3
30	Andrex	Andrex Washlets Cotton Fresh Moistened Toilet Tissue Wipes Refill (42)	3

31	Birds Eye frozen fish	Birds Eye Simply Breaded Large Haddock Fillets (4 per pack - 480g)	3
32	Finish	Finish All in 1 Powerball Dishwasher TABLEts (26)	3
33	Schweppes	Schweppes Lemonade (2L)	3
34	Fairy laundry	Fairy Fabric Softener Concentrate - 21 Washes (750ml)	3
35	Birds Eye frozen vegetable	Birds Eye Field Fresh Garden Peas (800g)	3
36	Aero	Nestle Aero Biscuits (7)	3
37	Cif	Cif Bathroom Spray (750ml)	3
38	Red Bull	Red Bull Energy Drink (355ml)	3
39	Douwe Egberts	Douwe Egberts Pure Decaffeinated Medium Roast Coffee (95g)	3
40	Kingsmill	Kingsmill 50/50 Pancakes (6)	4
41	Tropicana	Tropicana Pure Premium Smooth No Bits Orange Juice (1L)	4
42	McCain	McCain Home Roasts (907g)	4
43	Müller Corner	Muller Amore Luxury Strawberry Yogurt (150g)	4
44	Fairy liquid	Fairy Washing up Liquid Lemon (870ml)	4
45	Birds Eye poultry	Birds Eye Steak Pies (4 per pack - 620g)	4
46	Bisto	Bisto for Chicken Gravy Granules (170g)	4
47	Rowntree's	Rowntree's Jelly Tots (42g)	4
48	Mars	Mars Bar (7x58g)	4
49	Kellogg's Crunchy Nut	Kellogg's Crunchy Nut Cornflakes (500g)	4
50	Heinz Weight Watchers	Weight Watchers Tortillas Nacho Cheese (5x18g)	4
51	Jaffa Cakes	McVitie's Jaffa Cakes (12 per pack - 150g)	4
52	Parozone	Parozone Thick Bleach Original (750ml)	5
53	John West	John West Tuna Chunks in Brine (185g)	5
54	Uncle Ben's	Uncle Ben's Tikka Masala (500g)	5
55	Comfort	Comfort Concentrate Fabric Conditioner Lavender - 21 Washes (750ml)	5
56	Velvet	Velvet Soft Moistened Tissue Tub Wipes (42)	5
57	Air Wick	Air Wick Aerosol Lavender (240ml)	5
58	Surf	Surf Essential Oils Powder Lavender and Jasmine - 25 Washes (2Kg)	5
59	Dr Pepper	Dr Pepper (2L)	5
60	Snickers	Snickers Bar (7x58g)	5
61	Pizza Express	Pizza Express Honey and Mustard Dressing (235ml)	5
62	Twix	Twix Biscuit Fingers (9x23g)	5
63	Birds Eye meals	Birds Eye Chicken Curry with Rice (400g)	6
64	Canderel	Canderel Spoonful Granulated Sweetener (75g)	6

65	Stone's original Ginger wine	Stone's Original Green Ginger Wine (700ml)	6
66	Pepsi	Pepsi Diet (2L)	6
67	Heinz Pasta	Heinz Spaghetti Hoops in Tomato Sauce (400g)	6
68	Kellogg's Corn Flakes	Kellogg's Corn Flakes (1Kg)	6
69	Vimto	Vimto Original Cordial (1L)	6
70	Lenor	Lenor Pure Care Sensitive - 21 Washes (750ml)	6
71	Fanta	Fanta Z Orange Zero Added Sugar (2L)	6
72	Hellmann's mayonnaise	Hellmann's Light Mayonnaise Squeezy (750ml)	6
73	Onken Biopot	Onken Biopot Natural Set Yogurt (500g)	6
74	Jacob's Crackers	Jacob's Cream Crackers (300g)	6
75	Persil	Persil Lemon Burst Washing up Liquid (500ml)	6

Note: 0* means the product is commonly used in all six groups.

Appendix 4 Questionnaire example used in the online survey

Stage 1/3: Familiarity Judgment



How familiar are you with this brand?

	1 (Not at all)	2 (A little)	3 (Quite)	4 (Moderately)	5 (Very)	6 (Really)	7 (Totally)
A	<input type="checkbox"/>						
B	<input type="checkbox"/>						
C	<input type="checkbox"/>						
D	<input type="checkbox"/>						
E	<input type="checkbox"/>						

How often do you purchase these products above?

Daily	Several times a week	Weekly	Up to 3 times per week	Monthly	Less often	Never
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Stage 2/3: Similarity Judgment



How similar do you feel?

	1	2	3	4	5	6	7	
	(Not	at	(A	(Quite	(Moderately	(Very)	(Really)	(Totally)
	all)		little)					
B looks like A	<input type="checkbox"/>							
C looks like A	<input type="checkbox"/>							
D looks like A	<input type="checkbox"/>							
E looks like A	<input type="checkbox"/>							

For this type of product, do you buy a retailer brand/store brand?

- Never
- Seldom
- Occasionally
- Frequently
- Always

Stage 3/3: About You

Age	Under 20 <input type="checkbox"/>	20-29 <input type="checkbox"/>	30-39 <input type="checkbox"/>
	40-49 <input type="checkbox"/>	50-59 <input type="checkbox"/>	60 or over <input type="checkbox"/>
Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>	
Marital status	Single <input type="checkbox"/>	Married <input type="checkbox"/>	Divorced/Separated <input type="checkbox"/>
	Widowed <input type="checkbox"/>	Co-habiting <input type="checkbox"/>	
Your household gross income	Under £9,999 <input type="checkbox"/>	£10,000-19,999 <input type="checkbox"/>	
	£20,000-29,999 <input type="checkbox"/>	£30,000-39,999 <input type="checkbox"/>	£40,000-49,999 <input type="checkbox"/>
	£50,000-59,999 <input type="checkbox"/>	£60,000 or above <input type="checkbox"/>	Don't know <input type="checkbox"/>
			Do not want to tell <input type="checkbox"/>
Your education (up to)	GCSE (or school leaver at 16) up to age 18 <input type="checkbox"/>	A-level(or equivalent College Diploma/award) <input type="checkbox"/>	
	Undergraduate (BA/BSc) degree or higher degree/award <input type="checkbox"/>	Post-graduate or higher degree/award <input type="checkbox"/>	
Are you the primary shopper in your family	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
How many times do you typically go to a supermarket per month	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>
	3 <input type="checkbox"/>	4 <input type="checkbox"/>	or more <input type="checkbox"/>