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Always on your mind? – investigating consideration sets and private labels at the retailer and category level

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ABSTRACT

The consideration set has been widely studied as a consumer tool to simplify purchase decisions. However, important questions remain about how a retailer's private label strategy may impact consumers' consideration sets. In the present study, we employ the Associative Network Theory of Memory as a theoretical foundation and examine how private label consideration at the retailer level may affect consumers' decision-making at the product category level. Results from two empirical studies indicate that a higher number of private labels considered at the retailer level enhances consideration set heterogeneity at the category level. Critically, this stimulated heterogeneity further increases the purchase probability of private labels in consumers' consideration sets. This chain of effect also adds explanatory power to the impact of private label attitude on private label purchase probability through serial mediation. Consequently, retailers are encouraged to dilute consumers' consideration sets by constructing and communicating a diverse private label portfolio.

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Consideration set; private labels; associative network theory of memory; consideration set heterogeneity; attitude

Introduction

Private labels have become a dominant force in the fast-moving consumer goods (FMCG) industry. In the U.S. private label sales range around 20%, reaching a record level for the first half of 2023 (PLMA 2023a), while in Europe, private label brands wield even more influence and a recent consumer study covering multiple countries indicated that consumers are purchasing more private labels than ever with a tendency for further growth in future years (PLMA 2022). Specifically, European private label market shares in grocery retailing range between 52% (e.g. Switzerland) and 23% (e.g. Greece), further underscoring the significance of private labels in the marketplace (PLMA 2023b). Consequently, the study of private label brands has been of interest to marketing managers and research, covering areas such as retailers' assortment and branding decisions (Geyskens, Gielens, and Gijsbrechts 2010; Keller, Dekimpe, and Geyskens 2016), competition with national brands (Fornari, Grandi, and Fornari 2011; Lybeck,

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Holmlund-Rytkönen, and Sääksjärvi 2006; Tran et al. 2020), or consumers' attitudes and purchase decisions (Gómez and Rubio 2010; Miquel et al. 2017). The extant literature has often described consumer product purchase decisions as a two-stage process. In the first step, consumers evaluate all available brand alternatives and for simplification purposes mentally summarize those relevant to their decision in a consideration set (Hauser and Wernerfelt 1990). Consideration sets can encompass similar or dissimilar brands, resulting in rather homogeneous or heterogeneous sets (Ghiassaleh, Kocher, and Czellar 2020). Ultimately, consumers make their final selection from this consideration set, marking the second stage of the decision-making process (Hauser and Wernerfelt 1990).

Interestingly, however, studies on private labels and the first step of brand consideration remain scarce. The existing body of research on consideration sets has either focused exclusively on national brands or has simply failed to distinguish between national brands and private labels. To the best of our knowledge, our research is the first to explicitly address private labels in the context of consideration sets.

Seeking to fill this gap in the current literature, our study aims to explore the importance of private labels in grocery shoppers' consideration sets and their subsequent impact on their propensity to purchase private labels. We posit that private labels warrant distinct attention in the context of consideration sets. Extant work has predominantly explored consideration sets at the product category level (Andrews and Srinivasan 1995; Herrmann et al. 2014; Nedungadi 1990). In the context of this study, the category level refers to consumers' brand associations, considerations, and evaluations made within a particular product category. In contrast, we argue for additional contemplation of the retailer level, due to the unique nature of private labels in terms of branding, positioning, and distribution. In that regard, the retailer level refers to consumers' brand associations, considerations, and evaluations at a particular retailer, independent of the product category. More specifically, in this study, we account for the retailer level by focusing on the number of private labels considered at a particular retailer. Furthermore, we scrutinize its influence on consumer decision-making at the product category level through its impact on consideration set heterogeneity and private label purchase probabilities.

We base this distinction between retailer and category level on branding strategies in the grocery retailing industry. Large manufacturing companies in the FMCG industry mainly rely on mono-brand strategies, branding all products in their portfolio separately. Such a strategy aims at a precise category-specific positioning in consumers' minds (Laforet 2015). Over time, retailers have progressively added premium and niche-targeting private labels to their typical economy and value-based offering, resulting in rather diverse private label portfolios (Gielens et al. 2021). However, mostly following an umbrella-branding approach, private labels may often shape a retailer's assortment across multiple categories (Amrouche, Rhouma, and Zaccour 2014; Erdem and Chang 2012). Yet, due to the absence of category-specific positioning, we expect that such umbrella branding may prompt private label consideration at the retailer level. In addition, retailers frequently place their corporate brand in the brand names of their private labels (Geyskens et al. 2018), further facilitating the cognitive association between private labels and retailers rather than private labels and product categories. These arguments also align with the Associative Network Theory of Memory, which we employ as a theoretical foundation for our retailer-specific understanding of consideration sets. Furthermore,

we empirically strengthen this distinction between retailer and category level in our pre-study.

This further leads us to the examination of consumers' consideration of private labels at a particular retailer, a concept that we term the 'retailer consideration set'. Similar to a category-specific interpretation, we propose the consideration set size as a variable of interest at the retailer level. Past studies indicate that consideration set sizes for FMCGs tend to be small and range around three brands per product category (Desai and Trivedi 2014; Narayana and Markin 1975). But how many private labels does the average consumer consider for purchase at a particular retailer? And how does this further translate to the category level, where the particular purchase decisions are being made? Consequently, this raises questions about how private label consideration at the retailer level affects the formation and composition of consideration sets at the category level. Consistent with the two-stage process of consumers' decision-making, we also scrutinize the impact of these variables on consumers' purchase probabilities. A substantial string of literature identifies private label attitude as a main driver of purchase intentions toward private labels (Muruganantham and Priyadharshini 2017). We aim to shed new light on this relationship by exploring private labels in consideration sets at both the retailer and category levels.

The current research comprehensively addresses these research gaps and questions theoretically and empirically through two separate studies. This contributes to academic literature in several ways. Both consideration sets and private labels have been major research topics for several decades. However, to the best of our knowledge, no extant work has addressed these topics simultaneously, meaning our work fills a major research gap in consumers' grocery decision-making. Furthermore, the current study emphasizes that private labels not only account for considerable shares of consumers' shopping baskets but also play a substantial role in consumers' minds. Consideration of private labels at the retailer level affects consumers' decision-making at the category level, manifesting in more heterogeneous consideration sets and, subsequently, intensifying private label purchase likelihood. Critically, these findings encourage retailers to diversify their private label portfolio and seek niche positions, going beyond the usual economy and premium private labels. Such measures have the potential to further enhance their private label sales through more diverse consideration sets at the category level.

Next, we examine the theoretical background and discuss a set of formal hypotheses and methodology employed as well as current findings and their implications for theory, practice, and avenues for future research.

Theoretical background

Private labels

The emergence of private labels has significantly changed the grocery retailing landscape over the last decades. Starting with low-priced offerings and national brand copycats, growing consumer demand has prompted retailers to further expand their portfolios with premium and niche private label tiers (Fornari et al. 2021; Gielens et al. 2021). Ultimately, these developments may pose a threat to national brands' listings on grocery shelves, as

prosperous private label portfolios facilitate retailers' independence (Draganska, Klapper, and Villas-Boas 2010). Further, the uniqueness of retailer-owned brands enables differentiation and proliferation against the competition (Ailawadi, Pauwels, and Steenkamp 2008).

Successfully establishing multiple private label tiers demands a profound understanding of consumer behavior to identify those prone to private label purchases (Wu, Yang, and Wu 2021). Initial findings underscored that conventional private label buyers exhibited a propensity towards price and value consciousness (Burton et al. 1998). As retailers progressed through diversified private label portfolios and consumer needs grew more fragmented, various customer segments have become prone to purchasing private labels, complicating the definition of their prototypical buyer (Gielens et al. 2021). Nevertheless, a consistent view throughout the literature is the pivotal role of the general attitude towards private labels in steering purchase intentions. Shaped by consumers' cross-category experiences (Burton et al. 1998), private label attitude is largely based on learning and can evolve over time. Moreover, consumer characteristics such as socio-demographics or value and price orientation influence private label attitudes (Anchor and Kouřilová 2009; Manzur et al. 2011). Product-category- and retailer-related variables further affect how private label attitudes translate into actual purchases (Garretson, Fisher, and Burton 2002; Muruganatham and Priyadharshini 2017).

Responding to and building these attitudes surrounding private labels simultaneously involves managing costs and communication efforts, countering national brands, and establishing differentiation from direct competitors. This necessitates strategic planning of branding and positioning of a retailer's private label offering (Gielens et al. 2021).

Branding strategies allow retailers to manage positive and negative spillover effects from the private label level to the corporate level. Regarding brand name choice, the stand-alone strategy avoids the connection between the private label and the retail brand, whereas the store-banner strategy communicates retailer ownership by including the retailer's name, or logo in the private label branding (Keller, Dekimpe, and Geyskens 2016).

Another important decision is the choice of branding architecture for private label products. Regularly, retailers use an umbrella branding approach, extending a private label brand name across several categories (Nenycz-Thiel and Romaniuk 2019). Initially applied in national brand extensions to mitigate perceived risk and leverage spillover effects (Erdem 1998), positive spillover effects are also observed in a private label context (Erdem and Chang 2012; Simmering et al. 2015). Beyond inter-category effects, private label umbrella branding fosters store loyalty (Rubio, Villaseñor, and Yagüe 2017) and potentially reduces communications costs (Amrouche, Rhouma, and Zaccour 2014). However, this approach does not allow for precise positioning in a category, especially when extending a private label over the majority of the assortment. Therefore, these brands are positioned on general attributes like price or quality, as indicated by the aforementioned private label tiers in retailers' assortments (Geyskens et al. 2018).

In contrast, some retailers rely on category-specific private labels. This strategy enables the development of category-specific associations in consumers' minds (Keller, Geyskens, and Dekimpe 2020). A closer connection between private labels and product categories may ultimately enable the retailer to manifest expertise in specific categories and achieve higher private label brand equity (Nenycz-Thiel et al. 2010). Still, a switch from a category-

specific to an umbrella-branded portfolio is supported by research, as cost savings and efficiency improvements enhance retailers' performance (Keller, Geyskens, and Dekimpe 2020).

Umbrella branding is not entirely unusual for national brands either, particularly in consumption-related categories (Erdem and Chang 2012). However, large FMCG corporations typically use a mono-brand strategy, which enables accurate positioning in consumers' minds (Laforet 2015). Ultimately, this results in consumers mentally associating mono-branded products with particular product categories (Laforet and Saunders 2005).

In sum, both umbrella and category-specific branding seem to exist with private labels and national brands. However, most private labels are umbrella-branded, whereas most national brands emphasize a strong positioning with a category-specific approach. A recent study supports retailers' shift towards umbrella branding (Keller, Geyskens, and Dekimpe 2020). But when it comes to the formation of consideration sets, what remains unknown is how these different approaches affect brand structure in consumers' minds.

Consideration set

Branding strategies may ultimately affect consumers' pre-purchase mental processes (He et al. 2016). Cognitive summary and evaluation of brands help consumers to simplify their purchase decisions. In this regard, the consideration set, referring to all seriously considered brands, is a well-documented tool in marketing research, even before the main literature on private labels had emerged (Howard and Sheth 1969; Narayana and Markin 1975; Shocker et al. 1991). This preliminary aggregation of acceptable brands is an integral first step in a two-stage decision-making process, in which the ultimate brand choice represents the second step. Such cognitive pre-selection of brands eases consumers' final purchase decision by enhancing cognitive relief during shopping (Nedungadi 1990).

A tradeoff between evaluation costs and benefits of variety determines the consideration set size, which is dynamic over time (Hauser et al. 2010). Extant literature indicates that consumers prefer manageable consideration set sizes, typically containing two to seven brands (Barone, Fedorikhin, and Hansen 2017; Narayana and Markin 1975; Schamp, Heitmann, and Katzenstein 2019). When planning grocery purchases consumers tend to limit their consideration sets to two to four brands per category (Filho et al. 2020; Reilly and Parkinson 1985). This aligns with the simplification function of consideration sets. Further research even indicates that large consideration sets increase decision complexity (Goodman et al. 2013).

Consideration sets exert influence on purchase decisions beyond their size, further exemplified by the composition of brands within. Particularly, consideration sets can be composed of closely aligned or distinctively dissimilar products/brands (Roberts and Lattin 1991). This variance has been denoted as consideration set heterogeneity and hinges on multiple determinants, including the number of attributes and the distinctions inherent among these attributes (Draganska and Klapper 2011; Ghiassaleh, Kocher, and Czellar 2020). A more heterogeneous consideration set signifies heightened disparities between the options, thereby intensifying the evaluation process. Consequently, this impacts consumers' decision-making through higher choice uncertainty and less choice commitment (Ghiassaleh, Kocher, and Czellar 2020). Empirical evidence derived from choice modeling underscores that consideration set heterogeneity enhances the

importance of the marketing mix on the final purchase probability (Chiang, Chib, and Narasimhan 1998). Both concepts of consideration set size and heterogeneity are interpreted within the confines of product categories, a perspective consistently reflected in existing literature definitions.

According to Hauser and Wernerfelt (1990, p. 393), the consideration set is 'those brands that the consumer considers seriously when making a purchase and/or consumption decision'. Mehta, Rajiv, and Srinivasan (2003, p. 60) see it as 'a subset of all the brands available in the product category', and even the pioneers of literature on consideration sets, Howard and Sheth (1969, p. 416), interpret it 'as those brands the buyer considers when he (or she) contemplates purchasing a unit of the product class'. These definitions underscore the interpretation of consideration sets at the category level. Thus, while planning or being on a shopping trip, consumers will cognitively come up with a consideration set for several product categories.

This category-specific understanding also stands out in the measurement. Consideration sets are measured using a memory-based (Desai and Hoyer 2000; Nedungadi 1990; Punj and Brookes 2001) or stimulus-based approach (Desai and Trivedi 2014; Nordfält et al. 2004), while both usually rely on a product category as an anchor. Nevertheless, some exceptions exist, where consideration sets were treated on a more general level – e.g. choosing a dish, a fast-food restaurant, or a gift item (Desai and Hoyer 2000; Nedungadi 1990; Pham and Chang 2010).

Private labels in the context of consideration sets

Nenycz-Thiel et al. (2010) found that consumers retrieve national brands from memory through their connection with categories, whereas private labels lack this association and require other cues like low prices for retrieval. Furthermore, private labels typically rely on umbrella branding. Due to the broad positioning of umbrella brands across categories, consumers are less likely to associate umbrella brands with categories and instead, possess stronger mental associations at a higher abstract level (Dacin and Smith 1994; Sayman and Raju 2004). This raises concern about private labels' fit with the typical interpretation of the consideration set at the category level. In the context of the underlying work, this level comprises consumers' brand associations, considerations, and evaluations made within a particular product category. A higher abstract level, though, is the retailer level, which we interpret as consumers' brand associations, considerations, and evaluations with a particular retailer, independent of the product category. Moreover, the brand naming strategy may enforce these mental processes due to usually close connections between private labels and retailers' corporate brands. Hence, we argue that instead of the category level consumers' main mental aggregation of private labels occurs at the retailer level.

To explain the lack of association between private labels and product categories in consumers' minds and instead emphasize the connection between private labels and the retailer, we employ the Associative Network Theory of Memory, which describes human memory as a network of nodes and links. Nodes contain information (e.g. a brand or a product category) and can be interpreted as retrieval cues. Links tie these pieces of information together and these vary, depending on the strength of the relationship between the two nodes (Anderson 1983). Once a node is activated, memory retrieval

from other nodes may be triggered. The stronger the link between nodes, the more likely an activated node will further activate a connected node (Teichert and Schöntag 2010).

The broad positioning approach of private labels is characterized by a diluted link between the brand and the product category. Consumers associate umbrella brands with higher abstract nodes (Dacin and Smith 1994; Sayman and Raju 2004). Such a node operating one level above the product category could be the retailer or the retail brand. Hence, we anticipate a strong link between the retailer node and private label node in consumers' memory, leading to private label consideration at the retailer level rather than at the category level.

Drawing upon the discussed private label characteristics and our inferences derived from the Associative Network Theory of Memory, we advocate for the incorporation of the retailer level when assessing consideration sets in the context of private labels. Particularly, we posit that regardless of the product category, consumers consider a particular set of private labels for purchase at a particular retailer, a concept that we call the 'retailer consideration set'.

Ultimately, the final purchase decision occurs at the category level, where private labels compete with national brands for space in consumers' consideration sets and shopping baskets. Thus, we posit that a comprehensive view of purchase decisions in the grocery sector necessitates the inclusion of both brand consideration at retailer and category levels.

In the next section, we further elaborate on our argumentation for the retailer consideration set by formulating a hypothesis. Building on that, we conceptualize a model that aims to shed new light on how consideration sets at the retailer level affect consumers' purchase decisions at the category level in grocery retailing.

Hypotheses

Consumers' diluted mental association between private labels and product categories

Drawing upon the Associative Network Theory of Memory, we anticipate consumers to predominantly associate private labels with retailers rather than specific categories. Typical strategic private label characteristics such as umbrella branding lead to consumers shaping their perceptions of private labels across categories. We expect this propensity toward a diluted 'brand-category-association' to also manifest in consideration set measurements. Within the domain consideration set research, two predominant measurement approaches prevail. The stimulus-based approach involves presenting respondents with a list of brands, from which they identify those seriously considered for purchase (Barone, Fedorikhin, and Hansen 2017). In contrast, the memory-based approach relies on respondents recalling the seriously considered brands from their memory (Lee 2002). Both approaches pivot around the product category as a reference point. By comparing these approaches, we aim to strengthen our theoretical arguments about consumers' diluted mental connection between private labels and product categories. The memory-based approach is expected to disfavor private labels, as the free recall mechanism fails to align with their umbrella branding strategy. Thus, we posit the following hypothesis:

H1: Memory-based measurement leads to fewer private labels in consumers' consideration sets, compared with stimulus-based measurement.

The role of the retailer consideration set in consumers' decision-making

Concerning general purchase behavior, it is widely acknowledged that attitudes are major drivers of purchase intentions and, in turn, actual purchases (Rozenkowska 2023). This holds not only for products and brands in a general context but also gains particular relevance in the scope of private labels. Burton et al. (1998, p. 298) specifically defined the construct of private label attitude (PLA) as 'a predisposition to respond in a favorable or unfavorable manner due to product evaluations, purchase evaluations, and/or self-evaluations associated with private label grocery products'. Since then, an array of studies has consistently revealed its positive impact on private label purchase intentions (e.g. Gómez-Suárez, Quinones, and Yagüe 2016; Lacoeylthe et al. 2021; Miquel et al. 2017). Building upon this foundation, we anticipate a positive relationship when assessing private label purchase probability (PLPP) in consumers' consideration sets and formulate the following hypothesis:

H2: Private label attitude increases the private label purchase probability in consumers' consideration sets at the product category level.

Nonetheless, preceding the examination of private label consideration at the category level and their associated purchase probabilities, we contend that they necessitate consideration at the retailer level. Rooted in private labels' usual umbrella branding (Nenycz-Thiel and Romaniuk 2019), an innate mental association is formed at a higher abstract level (Dacin and Smith 1994), specifically the retailer level. As retailers' private label portfolios span across various categories, we expect consumers to generally consider a particular set of private labels for purchase at a retailer. This results in, as we term, the 'retailer consideration set' (RCS), which mirrors the counterpart to consideration sets at the category level. Similarly to the dynamics observed at the category level, we analogously expect an influential role of private label attitude. Consumers with a more favorable private label attitude should be predisposed to consider a higher number of private labels at the retailer level (i.e. a larger retailer consideration set). Thus, we articulate the following hypothesis:

H3: Private label attitude increases the size of the retailer consideration set.

When buying groceries, consumers are confronted with purchase decisions spanning over several product categories. Literature on umbrella brands accentuates the existence of spillover effects across product categories (Erdem and Chang 2012). Experiences accumulated with an umbrella brand across categories contribute to the formation of a holistic umbrella brand image at a higher abstract level (Sayman and Raju 2004). In the same vein, the overarching consideration of private labels at a retailer – in the form of a retailer consideration set – should affect the purchase decision and consideration set formation at the category level.

Nowadays, retailers offer a diverse private label portfolio designed to target numerous attributes. These brands range from budget-friendly economy and value-oriented standard offerings to exclusive premium brands positioned in distinct niches such as fair-trade, organic, or vegetarian (Gielens et al. 2021). Consequently, consumers considering multiple heterogeneous private labels at the retailer level are covering a variety of needs. We posit that this rather heterogeneous brand consideration also translates to the category level. More private labels considered at the retailer level should manifest in larger and thus higher consideration set heterogeneity (CSH) at the category level. In light of these premises, we posit the ensuing hypothesis:

H4: The size of the retailer consideration set increases consideration set heterogeneity at the category level.

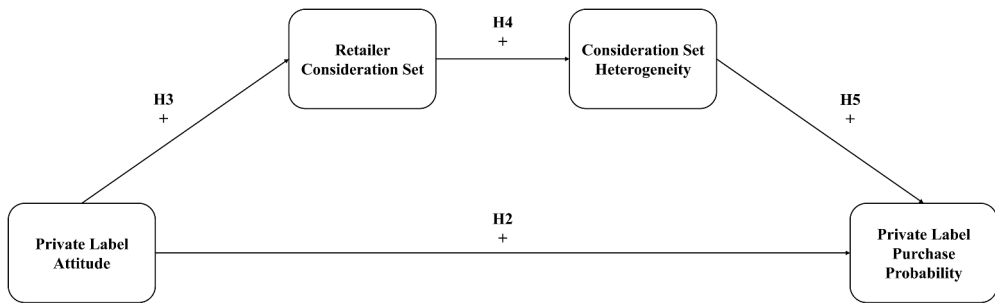
Growing consideration set heterogeneity at the category level results in an evaluation process that might demand heightened cognitive effort (Goodman et al. 2013). This increasing complexity of decision-making has the potential to yield diminished brand commitment (Ghiassaleh, Kocher, and Czellar 2020). Extant research indicates that brand commitment and loyalty are strongly related constructs (Kim, Morris, and Swait 2008; Ramaseshan and Stein 2014). Moreover, consumers exhibiting lower brand loyalty within particular categories display an increased propensity towards private label purchases in those categories (Ailawadi, Neslin, and Gedenk 2001; Burton et al. 1998). In these instances, private labels might be more appealing to consumers due to their advantages in affordability. If not through price, attributes targeting current market trends such as organic production or sustainability might be deciding in cases of low brand commitment and loyalty. These attributes are an area where retailers increasingly place focus on brands and can thrive compared with national brands (Gielens et al. 2021). Thus, a heterogeneous consideration set, through lower brand commitment and loyalty at the category level, might favor private labels. In addition, prior research has identified that the shopping baskets of variety-seeking consumers tend to have higher private label shares (Noormann and Tillmanns 2017). A large and heterogeneous consideration set might be a mechanism to meet such a need for variety. Considering these premises, we propose a positive relationship between consideration set heterogeneity and private label purchase probability.

H5: Consideration set heterogeneity increases the private label purchase probability in consumers' consideration sets at the product category level.

Following the logic of our previous hypotheses, we expect the further existence of a serial mediation. Consequently, we posit the ensuing hypothesis:

H6: The size of the retailer consideration set and consideration set heterogeneity at the category level sequentially mediate the effect of private label attitude on the private label purchase probability in consumers' consideration sets at the product category level.

As a brief recap, [Figure 1](#) visualizes our conceptual framework. Next, we discuss how we test these proposed hypotheses in two empirical studies.



Note: This figure visualizes our main study and therefore, does not include H1, which we examine in our pre-study.

Figure 1. Conceptual framework of main study.

Empirical studies

Pre-study

The pre-study's primary objective was to bolster our case for a retailer consideration set and thereby test H1.

Study design

For the purpose of our pre-study, we crafted a survey study aimed at comparing different consideration set measurement approaches at the category level. The overarching goal was to underscore the diluted association between private labels and product categories in consumers' memory. Specifically, we contrasted two measurement approaches: the memory-based and the stimulus-based approach. In the memory-based approach, respondents were tasked with freely recalling all brands seriously considered in a given product category (Nordfält et al. 2004). Subsequently, participants were presented with a list of the assortment of the largest national grocery retailer in a Western European country in the same product category and were instructed to mark all seriously considered brands. This procedure reflects the stimulus-based approach (Desai and Trivedi 2014).

In a quest for appropriate product categories, we sought characteristics such as frequent consumer demand, competitiveness, and a variety of offered national brands as well as private labels. We opted for two typical product categories within the grocery sector: noodles and chocolate. To mitigate any potential learning effect while still enabling the evaluation of two distinct categories, respondents were assigned to reveal their consideration sets within either the noodles or the chocolate category.

We distributed an online survey through participants of a university course, where each course participant had to organize survey respondents based on criteria such as age or gender. This resulted in 229 completed surveys and after the removal of 10 unusable cases, we garnered consideration set information from 219 regular shoppers of these two categories (female = 68%; mean age = 38.8 years). The respondents were evenly distributed across the two product categories, with 107 and 112 participants revealing their consideration sets for noodles and chocolate, respectively. Further characteristics of the sample are presented in Table 1.

Table 1. Respondent characteristics.

	Pre-study (n = 219)	Main study (n = 287)
Gender		
Female	68%	66.9%
Male	31.1%	31.7%
No Answer	1%	1.3%
Age		
18–24	18.7%	18.8%
25–34	34.2%	27.5%
35–44	10.5%	10.1%
45–54	11.4%	24.7%
55–64	17.4%	15.3%
65 and older	6.4%	2.1%
No Answer	1.4%	1.4%
Occupation		
Blue-collar	5.5%	8.7%
White-collar	52.5%	58.5%
Self-employed	1.8%	8%
Student	25.6%	16%
Retired	10.5%	4.5%
Unemployed	0.9%	0.7%
Other	3.2%	3.5%

Results

We tallied all private labels in the respondents' consideration sets, both under the memory-based and stimulus-based approaches. Subsequently, we employed these counts to compute the private label shares within their consideration sets.

In the case of noodles, our results revealed an average private label share of 16.3% when consideration sets were assessed through the memory-based approach. In stark contrast, the stimulus-based approach yielded an average private label share of 37.9%. This descriptive analysis is visualized in [Table 2](#) and illustrates private labels' underrepresentation in free recall scenarios, which is further supported by a highly significant mean difference ($T(106) = 7.812$; $p < 0.001$).

A comparable trend emerged in the chocolate category, albeit at a slightly lower magnitude. Here, the average memory-based private label share stood at 3.6%, as opposed to 18.4% under the stimulus-based approach. Once again, these mean differences were highly significant ($T(111) = 5.943$; $p < 0.001$).

Taken collectively, these findings lend support to H1, thereby empirically highlighting consumers' rather diluted mental association between private labels and product categories. This aligns with and further strengthens our previous argumentation for studying private label consideration at the retailer level.

Main study

In order to assess the concept of a retailer consideration set within a framework of structured hypotheses and evaluate its impact on consideration sets and decision-making at the category level, we conducted an online survey.

Table 2. Stimulus- vs. memory-based measurement of private label shares.

	Stimulus-based measurement		Memory-based measurement	
	Consideration Set Size	Private Label Share	Consideration Set Size	Private Label Share
Noodles	3.60	37.9%	2.37	16.3%
Chocolate	3.08	18.4%	3.18	3.6%

Study design

Consistent with the methodology in our pre-study, we once again leveraged the assortment of the largest grocery retailer in a Western European country. The focal retailer boasts an expansive private label portfolio spanning over multiple quality tiers, rendering it a suitable choice for our study. Similar to our pre-study, we collected data in two different product categories that are frequently demanded by grocery shoppers (i.e. noodles and potato chips). Again, the rationale behind selecting these categories lies in their competitive nature and their diversity in terms of national and private label brands. In contrast to our pre-study, we decided to study the product category potato chips instead of chocolate. The private label shares that we found in consumers' consideration sets in the pre-study were rather small, indicating that the product category does not reflect the desired competitive environment between private labels and national brands. Consequently, we opted for a different snack category, namely potato chips.

As part of a research seminar, the participants provided us with individuals who were potentially willing to participate in our survey. This way, we distributed a link to the survey to 500 consumers, with 464 individuals accessing the link. In the end, a set of 347 participants completed the survey. We removed 34 respondents based on certain criteria for exclusion (e.g. never shopping for groceries on their own). Further, we eliminated 18 respondents for failing an attention check ('Please click on 5 = strongly agree'), resulting in a total of 287 usable cases. After excluding participants due to missing answers and never purchasing noodles or potato chips, we ended up with final sample sizes of 269 for the product category noodles (female = 67.7%; $M_{age} = 39.5$ years) and 236 for potato chips (female = 68.4%; $M_{age} = 38.5$ years). As for the pre-study, further sample characteristics are visualized in [Table 1](#).

For measuring the retailer consideration set – i.e. the number of private labels considered at a specific retailer, we drew from the existing literature on consideration sets. We implemented a stimulus-based approach (Desai and Trivedi 2014), wherein respondents were presented with a list of the focal retailer's private label portfolio. Next, they were asked to indicate which of these brands they would seriously consider purchasing when shopping at that retailer, irrespective of the product category. Ultimately, the number of selected private labels represents the size of the retailer consideration set.

Given the insights from the pre-study, a memory-based approach underestimates private labels in consideration sets. Therefore, we also employed the stimulus-based measurement at the category level by presenting respondents with the focal retailers' assortment in the categories of interest (i.e. noodles and potato chips), encompassing both private labels and national brands.

The consideration set measurement at the category level served as the foundation for computing consideration set heterogeneity. This was achieved by applying a formula used by Ghiassaleh et al. (2020), which computes the H_{Index} as follows:

$$H_{Index} = \frac{N_{Set}}{N_T} \times F \quad (1)$$

N_{Set} denotes the number of brand types featured in the consideration set. We based the brand types on literature from private label research, that differentiates economy, standard, and premium private labels (Keller, Dekimpe, and Geyskens 2022; Rubio, Villaseñor, and Yagüe 2020). Correspondingly, we categorized all national brands in this threefold

manner (i.e. economy, standard, premium). This yielded six potential types of brands in respondents' consideration sets, which are represented by N_T . Lastly, F denotes the fraction of all cross-category pairwise combinations among the alternatives in the consideration set (Ratneshwar, Pechmann, and Shocker 1996). An illustrative example following the method proposed by Ghiassaleh et al. (2020) is provided in the appendix.

Subsequently, we operationalized respondents' purchase probabilities toward all brands in their consideration sets. Acknowledging that grocery shoppers typically consider multiple brands per category (Narayana and Markin 1975; Schamp, Heitmann, and Katzenstein 2019), adopting multi-item measurements of purchase intention would result in extensive item repetition and potential respondent fatigue – a concern highlighted in previous research (Bergkvist 2015). Moreover, a body of literature suggests that single-item measures are appropriate for double concrete constructs. These are constructs with a simple, clear object and single-meaning attribute (Diamantopoulos et al. 2012; Lars and Rossiter 2007). Bergkvist and Rossiter (2009) specifically identify a brand's purchase probability as an exemplar of such a double concrete construct. Consequently, we utilized a single-item measurement on a visual analog scale ranging from 0 to 100 (i.e. please specify the probability of buying brand X on a scale from 0% to 100%) to operationalize respondents' purchase probabilities toward each brand in their consideration set, similar to a measurement by Van Den Bergh et al. (2011). Ultimately, we realized the highest purchase probability toward any private label, as a final measure for private label purchase probability.

We relied on a six-item scale from Burton et al. (1998) to operationalize respondents' private label attitudes ($\alpha = 0.836$). Utilizing a five-point Likert scale with anchors '1 = strongly disagree' and '5 = strongly agree', all items went through a carefully conducted process of double translation. Before the final data collection, we conducted a pre-test with seminar participants to ensure clarity of questions and items. Next, we discuss the analysis and results.

Results

A descriptive analysis of the number of private labels considered revealed an average retailer consideration set size of 4.85 brands. This indicates that respondents consider nearly five private labels when planning a shopping trip to the particular retailer in our study.

Table 3 visualizes the correlations between our variables of interest for both product categories. We used Process Model 6 to evaluate all formal hypotheses, further allowing us to test for the serial mediation hypothesized in H6 (Hayes 2022). We applied bootstrapping with 5,000 samples and ran our analysis across both product categories (i.e.; noodles and potato chips). The results, summarized in Tables 4 and 5, aligned with our hypothesized relationships.

As anticipated, respondents' private label attitude exhibited a positive influence on their private label purchase probability in consideration sets at the category level, thus supporting H2 ($\beta_{\text{Noodles}} = 0.18, p < 0.01$; $\beta_{\text{Potato Chips}} = 0.22, p < 0.01$). The results further lend support for H3 ($\beta_{\text{Noodles}} = 0.24, p < 0.01$; $\beta_{\text{Potato Chips}} = 0.17, p < 0.01$), which posits a positive impact of private label attitude on the number of private labels considered at

Table 3. Correlation matrix for both product categories.

	Variable	Product category noodles				Product category potato chips			
		1	2	3	4	1	2	3	4
1	PLA	1				1			
2	RCS	0.22	1			0.15	1		
3	CSH	0.12	0.41	1		0.02	0.28	1	
4	PLPP	0.24	0.24	0.47	1	0.23	0.13	0.44	1

Table 4. Structural paths.

	Structural path		Product category	β	S.E.	t	p	
H2	PLA	→	PLPP	Noodles	0.18	2.89	3.25	<0.01
				Potato Chips	0.22	3.08	3.76	<0.01
H3	PLA	→	RCS	Noodles	0.24	0.19	4.05	<0.01
				Potato Chips	0.17	0.21	2.71	<0.01
H4	RCS	→	CSH	Noodles	0.40	0.01	6.97	<0.001
				Potato Chips	0.29	0.01	4.57	<0.001
H5	CSH	→	PLPP	Noodles	0.44	8.13	7.50	<0.001
				Potato Chips	0.45	10.58	7.62	<0.001

Notes: The number of bootstrap samples is 5,000; β coefficients are standardized; $N_{\text{Noodles}} = 269$; $N_{\text{Potato Chips}} = 236$.

the retailer level (i.e. the retailer consideration set). Next, we investigated the interrelation of private label consideration at the retailer level and consideration set formation in product categories. The size of the retailer consideration set significantly enhances consideration set heterogeneity at the category level, indicating the support of H4 ($\beta_{\text{Noodles}} = 0.40$, $p < 0.001$; $\beta_{\text{Potato Chips}} = 0.29$, $p < 0.001$). In turn, consideration set heterogeneity significantly increases the private label purchase probability in consideration sets at the category level, aligning with H5 ($\beta_{\text{Noodles}} = 0.44$, $p < 0.001$; $\beta_{\text{Potato Chips}} = 0.45$, $p = 0.001$). Finally, the mediation analysis supports our hypothesized serial mediation of private label attitude on private purchase probability via the retailer consideration set and consideration set heterogeneity at the category level. The results visualized in Table 5 demonstrate a significant total, direct, and, most importantly, indirect effect, which is in line with H6 ($\beta_{\text{Noodles}} = 0.04$; $LLCI_{\text{Noodles}} = 0.02$, $ULCI_{\text{Noodles}} = 0.07$; $\beta_{\text{Potato Chips}} = 0.02$; $LLCI_{\text{Potato Chips}} = 0.01$, $ULCI_{\text{Potato Chips}} = 0.05$). In sum, our empirical findings indicate support for all our hypothesized relationships. Next, we delve into a detailed interpretation of these findings and explore their theoretical and managerial implications.

Table 5. Mediation analysis – standardized indirect, direct, and total effects.

Type of effect	Product category	Effect	S.E.	LLCI	ULCI
H6: PLA → RCS → CSH → PLPP					
Indirect effect	Noodles	0.04	0.01	0.02	0.07
	Potato Chips	0.02	0.01	0.01	0.05
Direct effect	Noodles	0.18	0.06	0.07	0.29
	Potato Chips	0.23	0.06	0.11	0.35
Total effect	Noodles	0.25	0.06	0.13	0.37
	Potato Chips	0.22	0.07	0.09	0.35

Notes: The number of bootstrap samples is 5,000; LLCI refers to 'Lower-Level Confidence Interval', and ULCI refers to 'Upper-Level Confidence Interval', $N_{\text{Noodles}} = 269$; $N_{\text{Potato Chips}} = 236$.

Discussion and conclusions

This study explores the extent to which private labels play a distinctive role in consumers' consideration sets. Specifically, we offer a novel approach to differentiating between the retailer and category levels. Beyond the confines of each specific product category, we expect consumers to mentally summarize seriously considered private labels when patronizing a retailer, a concept we termed as the retailer consideration set.

This approach is founded in a twofold manner. First, private labels stand apart from national brands. Their usage of umbrella branding diminishes consumers' chances of forming mental associations between private labels and product categories. Instead, in alignment with the Associative Network Theory of Mind, consumers are more inclined to associate private labels with the retailer. Second, our pre-study findings underline consumers' diluted mental association between private labels and categories. Notably, consideration sets derived solely from memory retrieval exhibited significantly lower shares of private labels compared to those retrieved from a predefined list.

Descriptive results indicate that respondents, on average, considered nearly five private labels when contemplating a shopping trip to the focal retailer of our main study, which reflects a solid amount of private label consideration at the retailer level. In line with existing research highlighting the influential role of private label attitude, our findings unveiled a significant effect of private label attitude on the purchase probability toward private labels at the product category level. Moreover, it impacts the retailer level as well, indicated by a significant influence on the size of the retailer consideration set. Specifically, consumers with higher private label attitudes are predisposed to consider a large number of private labels when visiting a particular retailer.

More critically, the size of consumers' retailer consideration sets reverberates within their decision-making processes at the category level. An increased number of considered private labels at the retailer level allows consumers to fulfill different needs and quality requirements across various categories. Our empirical findings from two categories (i.e. noodles and potato chips) support this expectation. Consumers with a large retailer consideration set possess more heterogeneous consideration sets at the category level. Therefore, these category-level consideration sets contain rather dissimilar brands, ranging from economy private labels to premium national brands.

In turn, this enhanced consideration set heterogeneity affects the purchase decision. Crucially, consideration set heterogeneity is favorable for retailers, as it increases private label purchase probability. Consideration set heterogeneity implies that consumers have mentally formed a diverse subset of all available brands that they seriously consider for purchase. This includes the consideration of dissimilar private labels (e.g. economy and premium private labels) but also contrastively positioned national brands (e.g. economy and premium national brands) at the same time. Such diverse consideration sets offer consumers variety in terms of price, quality, and other attributes. Past research has indicated that in cases of variety seeking and low brand loyalty consumers favor private labels (Ailawadi, Neslin, and Gedenk 2001; Noormann and Tillmanns 2017). Consideration set heterogeneity may reflect these constructs, which might offer a further explanation for its effect on private label purchase probability.

Echoing the findings of extant literature, our study reaffirms the positive impact of private label attitude on private label purchase probability. More importantly, our study elucidates that this effect is mediated by consideration sets at both retailer and category levels. Serial mediation analysis indicates a significant indirect effect of private label attitude on private label purchase probability, facilitated through its impact on the retailer consideration set and consideration set heterogeneity. In sum, our investigation enhances the comprehension of the decision-making process of private label-prone consumers.

Theoretical implications

Our research makes several noteworthy contributions to academic marketing literature. First, we fill a critical gap in the literature by addressing private labels in the consideration set context. Much of the existing consideration set literature emerged in times when private labels did not occupy a prominent role. However, even more recent work tends to ignore this aspect. Only studies in adjacent areas, such as brand recall graze private labels (Nenycz-Thiel et al. 2010). To the best of our knowledge, we are the first to specifically examine private labels in consumers' consideration sets. Thereby, we accentuate their importance in consumers' minds, complementing their well-established presence in consumers' shopping baskets.

Second, we extend the literature on the Associative Network Theory of Memory by highlighting private labels' structurally different positions in consumers' minds. We posit, from a theoretical standpoint, that private labels are connected to different mental cues than typical national brands. Predominantly characterized by umbrella branding, they lack an intense cognitive association with categories. This assertion finds empirical support in our pre-study. In contrast, we propose a more powerful mental link with the retailer's corporate brand. Hence, the corporate brand much rather activates private labels in consumers' minds than product categories would. This led us to account for private label consideration at the retailer level, which we termed the retailer consideration set.

Third, we add to the literature on consideration sets by assessing their heterogeneity. Recent literature indicates that consideration set heterogeneity can amplify decision complexity and ultimately reduce commitment (Ghiassaleh, Kocher, and Czellar 2020). We add to this discourse by differentiating between private labels and national brands at different quality tiers. Critically, our findings showcase that in situations where consumers choose their groceries from rather heterogeneous consideration sets, they exhibit an increased likelihood of purchasing private labels.

Fourth, we add explanatory power to the interrelation between consumers' private label attitude and their private label purchase probability, as this relationship is mediated by brand consideration at the retailer and category level. This offers novel insights into consumers' decision-making in the realm of grocery retailing.

Managerial implications

Grocery retailers can leverage the insights from our study in several ways. First, managers should further promote the benefits of their private label portfolio's variety. Advertising campaigns that emphasize variety across different quality segments should also stress the flexibility within categories, demonstrating to consumers the availability of premium and

niche private labels, particularly in categories with higher involvement and quality importance. Collectively, such communication efforts become especially relevant for consumers already exhibiting a higher private label attitude. This would facilitate their portfolio knowledge, reinforce their attitude, and, as our findings demonstrate, lead to the consideration of more private labels.

Furthermore, retailers can benefit from the facilitation of private label consideration at the category level. Larger retailer consideration sets diversify consideration sets at the category level, which, in turn, bolsters the probability of consumers choosing private labels. Therefore, our findings encourage retailers to implement subtle measures to diversify consumers' consideration sets at the category level. Retailers regularly run limited category-specific price reductions. Communication of such promotional activities could further highlight a retailer's brand diversity in these categories. Additionally, when making assortment decisions concerning national brands, retailers could try to list rather dissimilar national brands on their shelves, especially concerning tier-two or tier-three national brands. This may ultimately facilitate more heterogeneous consideration sets and, as our results suggest, heighten the likelihood of private labels landing in consumers' shopping baskets.

Lastly, management should also be aware that consumers possess a diluted mental association between private labels and product categories. This is where large manufacturing firms thrive through mono-branding, as this establishes precise category-specific positioning in consumers' minds. These firms manage various brands for virtually every product category, communicating category expertise, which manifests itself in consumers' memory. As a counter, we recommend a thorough analysis of food and non-food categories to identify strong and weak categories for each private label in retailers' portfolios. Based on this breakdown, retailers can strategically promote the category expertise of their private labels. Crafting communication messages that emphasize category expertise could improve consumer awareness and knowledge about the portfolio, potentially strengthen their mental association between certain private labels and product categories, and further stimulate demand for private labels.

Limitations and future research

Since our investigation of the retailer consideration set only included private labels at a particular grocery retailer, the exclusion of umbrella national brands may be considered a limitation. However, large manufacturing firms in this industry mostly rely on mono-branding and we believe that it is rather unlikely that consumers actively consider the corresponding corporate brand (e.g. Nestlé or Procter & Gamble). In addition, our conceptual model does account for national brands through the measurement of consideration set heterogeneity. Another shortcoming of our study and potential topic for future research may be the lack of empirical evidence for the supposed stronger mental association between private labels and retailers in consumers' minds. Instead, results from our pre-study illustrate consumers' diluted mental association between private labels and product categories. In our main study, we focused on two frequently demanded categories in grocery retailing, noodles and potato chips. We acknowledge that this is a limitation, as it represents only a small portion of grocery retailers' assortments. In addition, the presented implications of our research are based on empirical

findings from two rather small samples of respondents. Even though the mean age of the respondents ranges around 40 years, both studies could further benefit from a more diverse sample. Consequently, future studies scrutinizing additional product categories using larger samples could add generalizability to our findings. Finally, as private label portfolios are also growing in other retail industries, an expansion to a different context may be worth seeking.

As we conclude this study, we acknowledge the dynamics at play in the consumer's mind when it comes to grocery shopping and private labels. The highlighted interplay between brand consideration at the retailer level and category level represents a step forward in understanding the nuanced factors that drive consumers' grocery purchase decisions. Retailers, cognizant of this complexity, can strategically leverage the insights from this study to refine their private label offerings, optimize their national brand assortment, and ultimately enhance their competitiveness in the market.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix A: computing consideration set heterogeneity

Note: The formula as well as the explanation is based on the work by Ghiassaleh et al. (2020).

$$H_{\text{Index}} = \frac{N_{\text{Set}}}{N_T} \times F \quad (1)$$

As elaborated in the main text, we differentiate between six brand types. First, a brand can be classified as either a private label or a national brand. Secondly, brands within these types are positioned differently in terms of price and quality, leading to a differentiation between economy, standard, and premium brands. Collectively, this results in N_T is equal to 6. These different brand types may contain more than one product. For example, a retailer may offer three premium private labels (PPL1, PPL2, PPL3) and three standard national brands (SNB1, SNB2, SNB3).

Let us assume that a consumer's consideration set consists of (PPL1, PPL2, SNB1, SNB2, SNB3). This means N_{Set} equals 2. Meanwhile this gives us the following pairwise combinations: (PPL1, PPL2), (PPL1, SNB1), (PPL1, SNB2), (PPL1, SNB3), (PPL2, SNB1), (PPL2, SNB2), (PPL2, SNB3), (SNB1, SNB2), (SNB1, SNB3), and (SNB2, SNB3). This equals 10 pairwise combinations.

Furthermore, this gives us 6 across-category pairwise combinations: (PPL1, SNB1), (PPL1, SNB2), (PPL1, SNB3), (PPL2, SNB1), (PPL2, SNB2), and (PPL2, SNB3). The coefficient F reflects the fraction of across-category pairwise combinations to the total number of pairwise combinations. In our particular case, $6/10$, which leads us to an H_{Index} :

$$H_{\text{Index}} = \frac{2}{6} \times \frac{6}{10} = 0.2 \quad (2)$$