

Factors affecting the purchase of private label food products

Private label
food products

Marcello Sansone

Economics and Law, University of Cassino and Southern Lazio, Cassino, Italy

Fabio Musso

Economics, Society and Politics, University of Urbino Carlo Bo, Urbino, Italy, and

Annarita Colamatteo and Maria Anna Pagnanelli

Economics and Law, University of Cassino and Southern Lazio, Cassino, Italy

Received 20 January 2020

Revised 13 May 2020

1 July 2020

16 August 2020

Accepted 30 September 2020

Abstract

Purpose – This research paper aims to understand which factors influence the purchase of private label food products, by measuring the importance of 14 variables for purchasing frequency.

Design/methodology/approach – Data were collected through questionnaires to a sample of consumers. They have been analysed according to the extra tree classifier methodology, which allows providing a more reliable classification – compared to previous studies – of factors affecting consumers' choices of private label products.

Findings – Results show that consumers' choices related to private label food products are influenced by groups of heterogeneous variables related to their perception on products, satisfaction of post-consumption, store's role and trust built over time by retailers.

Research limitations/implications – Data have been collected through an online survey, which could generate the bias of self-selection; the sampling method is non-probabilistic.

Practical implications – The study provides useful indications on the role of private labels in retailer management policies and on marketing competences and skills that are necessary for managing retailers' assortments.

Originality/value – The existing literature lacks clarity on the factors that influence the frequency of purchasing private label food products. By considering a higher number of variables than previous studies, it has been possible to classify and measure the importance of each variable included in the analysis framework adopted, also in case of correlation between variables.

Keywords Private label, Purchase frequency, Food products, Consumer behaviour

Paper type Research paper

1. Introduction

Products manufactured by a third-party company and sold under a retailer brand name (private label products) gained over the years an increasing relevance in consumers' preferences and management policies of retailers. Indeed, the most recent data of the Private Label Manufacturers Association, reported in the PLMA's 2019 International Private Label Yearbook, show that in 17 European countries, the market share of private labels stands on average at 30%. The importance of the private label in Europe is even greater if we focus on the food sector (market share ~ 44.8%). Moreover, data from the European market suggest that market shares and purchasing propensity of private label products differ significantly across Europe since choices to purchase private label products are influenced by the context, micro and macro environment variables as well as by country-specific cultural aspects.

Accordingly, the interest of scholars to study the role of the private label in retail management (Ailawadi and Keller, 2004; Aribarg *et al.*, 2014) is aimed on the one hand to justify the growth of private labels market share and their impact on supply chains (Lamey *et al.*, 2007; Sethuraman and Gielens, 2014); on the other hand, to understand motivations and factors that influence consumer choices in their buying behaviour (Ailawadi, 2001; Dolekoglu *et al.*, 2008).



Within the line of research focused on the reasons for purchasing private label, some models aim at identifying the influencing variables on consumers' choices. These models consider one or few factors (on average 4) analysing them in depth (Sinha and Batra, 1999; Wells *et al.*, 2007; Ailawadi *et al.*, 2008; Karray and Martín-Herrán, 2008). More recently, Calvo Porral and Lang (2015) and Calvo Porral and Levy-Mangin (2016) suggested that a more integrated and holistic approach should be necessary for better analysing the main influencing variables of private label products choices.

Based on these premises, two research questions have been identified for this study:

RQ1. What factors influence the purchase frequency of private label food products?

RQ2. What factors are most relevant for the purchase frequency of private label food products?

The objective of this paper is to propose and test a comprehensive analysis framework on the factors affecting the choice of private label food products by consumers, which includes a higher number of variables than previous studies. The extra tree classification method adopted for data treatment allows to highlight how all the variables act systemically, thus, integrating the literature, which frequently focuses on single factors.

The results – which underline how consumers' choices are influenced by groups of heterogeneous variables related to products, the store's role and trust built over time by retailers – suggest useful insights for scholars and managers, by providing a framework that allows to measure the weight of each variable and compare different contexts, retailers and types of private labels.

The paper is organized as follows: after the introduction, the literature review is proposed in Section 2, including the selection of factors for the analysis framework. The methodology follows presenting the extra tree classification method. Results are described in section four and discussed in section five. The final section presents conclusions, theoretical and managerial implications, limitations and future researches directions.

2. Theoretical background

2.1 Consumer behaviour and purchasing preferences of private label products

The American Marketing Association defined private label as “a brand name or label name attached to or used in the marketing of a product other than by the product manufacturers, usually by a retailer” (American Marketing Association, 2014). Over time, the literature proposed different definitions of private label depending on the changes of its role in management policies of retailers and on consumer dynamics (Kumar and Steenkamp, 2007; Castaldo *et al.*, 2013).

Among the different perspectives by which this topic has been analysed, a relevant research stream concerns consumer behaviour, purchasing preferences and the factors that influence consumer choices of private label products. About this, one of the first studies was that by Bettman (1974), who analysed the variables that affect the choice of private label products, focussing the attention on three aspects: quality perceived by consumers, risk – in terms of different degree of guarantees offered, compared to industrial brand products – and familiarity with private label products.

Later on, some authors (Richardson *et al.*, 1996) examined the relative importance of the extrinsic and intrinsic features of private label products in consumers' perceptions, and further studies correlated the attitude of consumers to their perceptions, promotions from manufacturers and retailers and perceived value for money (Burton *et al.*, 1998). Similarly, Apfelbaum *et al.* (2003) underlined the need to offer high-quality private label products combined with lower prices, in order to increase retailers' differentiation and horizontal competitiveness.

Sprott and Shimp (2004) stressed the importance of in-store promotion and De Wulf *et al.* (2005) underlined the role of the store (recreational, emotional and social) on private label purchasing. Other studies further investigated the personality traits of consumers, as well as the hedonistic and playful aspects linked to private label products consumption (Ailawadi *et al.*, 2001).

With the evolution of the concept of private label, purchasing motivations leading consumers towards private label products evolved, as well as the factor affecting motivations. A study conducted by Jin and Gu Suh (2005) – based on the main research contributions until that moment – classified the factors of influence into three categories: socio-economic, perceptive and psychographic. The first category refers to consumers' socio-economic conditions (Fan *et al.*, 2012). The second category includes consumers' perceptions about price (Baltras, 1997; Garretson *et al.*, 2002; Olbrich *et al.*, 2017), value of products (Burton *et al.*, 1998; Fall Diallo *et al.*, 2013), risk (Sinha and Batra, 1999; Dursun *et al.*, 2011), brand (Baltras, 1997; Gendel-Guterman and Levy, 2013) and opportunity for smart shopping (Baltras, 1997; Manzur *et al.*, 2011). The psychographic variables refer to consumers' attitudes or preferences, such as attitude towards advertising (Gómez-Suàrez *et al.*, 2017), propensity to innovation (Ailawadi *et al.*, 2001; Musso, 2010; Fan *et al.*, 2012), impulsiveness (Burton *et al.*, 1998; Fan *et al.*, 2012) and propensity to search for variety (Baltras, 1997).

A more recent review of the literature (Sansone *et al.*, 2018) showed that most of the studies on the reasons for purchasing private label products focus on a limited number of variables, producing different results depending on the type of products, the type of retailers' strategy and the context. The most frequently analysed factors are: price (Dolekoglu *et al.*, 2008; Danziger *et al.*, 2014), quality (Dolekoglu *et al.*, 2008; Ailawadi *et al.*, 2008), packaging (Wells *et al.*, 2007; Kuvykaite *et al.*, 2009) and brand (Aribarg *et al.*, 2014; Sansone, 2014). Such analyses generally excluded the role of the other factors and the correlation with them.

2.2 Factors affecting private label purchasing

In the light of previous studies, and according to a recent literature review which analysed the factors affecting consumers' choice of private label (Sansone and Colamatteo, 2019), 14 factors have been identified, as follows.

- (1) *Quality*. Although being a topic widely discussed by the literature, the definition of quality is still complex due to the multidimensionality of the characteristics and attributes of each product (Baker and Crompton, 2000). Quality seems to be linked to factors related to customer satisfaction that determine the decision to buy or not, going beyond the intrinsic or technical characteristics of products. Therefore, quality cannot be analysed only through an objective dimension but through a connection between objective and subjective variables (My *et al.*, 2018; Kumar and Kapoor, 2017).
- (2) *Price*. Companies try to summarize the value built for customers through price. From the point of view of consumers, price is a major factor of impact on buying choices that also influences decisions in store (Dolekoglu *et al.*, 2008). Perceived price is what consumers are willing to sacrifice for acquiring a product. Studies on price and willingness to pay for food products can be divided in two streams: the econometric tradition and the consumer behavioural tradition (Ghvanidze *et al.*, 2017; Kumar and Kapoor, 2017), with the latter offering a subjective view on price and price perceptions.
- (3) *Quality-price ratio*. Value for money includes more considerations by consumers than quality perception and price perception alone (Markovina *et al.*, 2011; Bergès-Sennou *et al.*, 2007). This is because consumers use price also as an indicator of the

level of quality. Therefore, a joint comparison of quality and price can overcome possible distortions.

-
- (4) *Sales promotions.* Sales promotions aim to act primarily on the behavioural dimension of customers' buying choices. Promotions are closely linked to price and they have an effect on purchasing (Gedenk and Neslin, 2000; Dolekoglu *et al.*, 2008; Nochai and Nochai, 2011), especially in periods where consumers are more looking for affordability. Their effects depend on the kind of consumer, and they change according to the type of product, the positioning and the context. However, it is important to understand and measure how consumers perceive the promotional pressure and how that perception affects purchases.
 - (5) *Packaging.* The role of packaging as a communication tool able to influence consumers choices is highlighted in various researches in the food sector (Silayoi and Speece, 2004; Bland, 2004; Ribeiro *et al.*, 2018). The communicative function of packaging and labelling can be analysed from different perspectives, and the value perceived by consumers is based on a set of intangible features: brand, information (advice for preparing and using products, ingredients, etc.) and service (recyclability or possibility of reuse of packaging, single portion packs, etc.). In this context, packaging allows a multi-sensorial and bi-directional communication between an issuer and a receiver.
 - (6) *Store assortment.* The whole store assortment plays a key role not only in satisfying consumers' needs but also in influencing their wants and preferences (Simonson, 1999; Kahn *et al.*, 2014; Gao and Simonson, 2016). Because of its importance, store assortment stimulated an increasing interest across different research domains. The main issues relate to how assortments can affect buyers' preferences and purchasing decisions, how consumers perceive the variety of an assortment, how they choose an item within an assortment and how they choose among assortments.
 - (7) *Visual merchandising.* The importance of space allocation and visual merchandising is well established in research, and studies on how changes in shelf positions cause variations in sales are now consolidated (Kerfoot *et al.*, 2003; Ravazzi, 2016). For most product categories, visual merchandising can capture consumers' attention inside the store and affect their purchasing preferences.
 - (8) *Similarity with national brands.* Logo, colours, packaging, position on the shelves and pricing policies show that private label products tend to imitate national brands or market leaders. More specifically, there is a type of private labels which bases its competitiveness on this factor: the copycat brand (Van Horen and Pieters, 2012). While not referring only to copycat brands – but to all types of private labels – consumers may tend to buy private label because they recognize physical characteristics and intrinsic qualities comparable to those of market leaders (Collins-Dodd and Lynne Zaichowsky, 1999; Aribarg *et al.*, 2014; Lin and Jie, 2010).
 - (9) *Communication and advertising.* About private label, communication has long been debated because of its relevant role in the relationships between manufacturers and retailers and for its influence on consumers' choices (Karray and Martín-Herrán, 2008; Ter Braak *et al.*, 2014). Advertising and communication strategies have evolved over time and private labels have only recently started to be subject of communication, similarly typical of national brands.
 - (10) *Customer satisfaction.* Customer satisfaction is a dynamic and individual phenomenon that mainly depends on the relationship between expectations and

results, both of which are subjective and variable over time (Mittal and Kamakura, 2001; Espejel and Fandos, 2009). The level of satisfaction obtained stimulates the customer to act retroactively at different stages of the purchasing process, confirming or changing previous behaviour.

- (11) *Store loyalty*. Over the years, retailers have gained consumer confidence and loyalty, leading them in choosing the store prior than products (Vahie and Paswan, 2006; Koschate-Fischer *et al.*, 2014; Godderidge *et al.*, 2016). This mechanism affects the choice of products, which have the retailer's brand name: store atmosphere, confidence, front office staff and shop experience are elements that influence decisions of buying private label food products.
- (12) *Availability of alternative packaging and formats*. In consumers' choices, the availability of different products format and size have been studied (Dolekoglu *et al.*, 2008; Koutsimanis *et al.*, 2012). This aspect satisfies a more utilitarian dimension of buying decisions because it is based on the consideration that consumers' choices are influenced by the variety of each "product". Depending on the product category, consumers have increasingly diversified needs, expecting specific responses from retailers.
- (13) *Health*. The perception of health about food is wide and can be approached from various perspectives, including psychological, social, nutritional and medical point of view. For consumers, health includes two main dimensions: eating healthily and refusing harmful food. The first dimension is related to nutritional aspects such as diets, functional foods, less oily foods and other issues related to health and nutrition. The second dimension concerns food security. Therefore, consumer perceptions about healthy food are highly subjective and depend on consumers' needs and wants (Migliore *et al.*, 2015; Rodrigues *et al.*, 2018; Sobhanifard, 2018).
- (14) *Taste*. In the case of food, one of the factors influencing the purchase/repurchase decisions of products is taste, as the flavour of products perceived by consumer. Even in this case, it is not an objective dimension of intrinsic attributes or organoleptic characteristics of products but a subjective dimension linked to the perceptions of the individual consumer (Brunsø *et al.*, 2002; Rodrigues *et al.*, 2018; Tirelli and Pilar Martinez-Ruiz, 2014).

3. Methodology

3.1 Analysis framework

For the aim of this study, an empirical research has been carried out through a survey on a sample of consumers. The research design has been based on a framework of analysis containing the factors of influence identified by previous literature, presented in the previous paragraph. For each factor, the corresponding sources have been reported (Table 1).

3.2 The survey

Based on the selected variables, a questionnaire was built to detect consumers' perceptions about private label food products. The answers were built on a Likert scale of agreement 1–5. In the processing of data, the extreme one (corresponding to consumers who declare that they never purchased private label products) was excluded. In addition, the high purchase frequencies four and five were merged to reduce the unbalance on the score frequencies (Joshi *et al.*, 2015; Boone and Boone, 2012) and being relevant to detect the over average scores. The decision to merge scores four and five was the result of data tests, which showed that the

Table 1.
Factors included in the
analysis framework

| N. | Factors | Main references |
|-----|--|--|
| 1. | Quality | Espejel and Fandos (2009), Dolekoglu <i>et al.</i> (2008), Ailawadi <i>et al.</i> , (2008), My <i>et al.</i> (2018), Kumar and Kapoor (2017) |
| 2. | Price | Dolekoglu <i>et al.</i> (2008), Ailawadi <i>et al.</i> (2008), Kumar and Kapoor (2017) |
| 3. | Quality-price ratio | Markovina <i>et al.</i> (2011), Bergès-Sennou <i>et al.</i> (2007) |
| 4. | Sales promotions | Gedenk and Neslin (2000), Dolekoglu <i>et al.</i> , (2008), Nochai and Nochai (2011) |
| 5. | Packaging | Silayoi and Speece (2004), Bland (2004), Ribeiro <i>et al.</i> (2018) |
| 6. | Store assortment | Simonson (1999), Kahn <i>et al.</i> (2014), Gao and Simonson (2016) |
| 7. | Visual merchandising | Kerfoot <i>et al.</i> (2003), Ravazzi (2016) |
| 8. | Similarity with national brands | Collins-Dodd and Lynne Zaichkowsky (1999), Aribarg <i>et al.</i> (2014), Lin and Jie (2010) |
| 9. | Communication and advertising | Karray and Martín-Herrán (2008), Ter Braak <i>et al.</i> (2014) |
| 10. | Customer satisfaction | Mittal and Kamakura (2001), Espejel and Fandos (2009), Baker and Crompton (2000) |
| 11. | Store loyalty | Vahie and Paswan (2006), Koschate-Fischer <i>et al.</i> (2014), Godderidg <i>et al.</i> , 2016 |
| 12. | Availability alternative packaging and formats | Dolekoglu <i>et al.</i> (2008), Koutsimanis <i>et al.</i> (2012) |
| 13. | Healthy | Rodrigues <i>et al.</i> (2018), Sobhanifard (2018), Migliore <i>et al.</i> (2015) |
| 14. | Taste | Brunso <i>et al.</i> (2002), Markovina <i>et al.</i> (2011), Rodrigues <i>et al.</i> (2018), Tirelli and Pilar Martinez-Ruiz (2014) |

performance of the analysis with this type of pre-processing is higher than treating separately the two classes. Joining 4–5 scores also makes sense from a conceptual point of view, as it is as if we had grouped the last two classes into a single “high agreement” class, consistent with the aim of understanding which factors have a greater impact on the purchase frequency.

On the basis of the questionnaire, a survey was conducted from June to July 2019, using the convenience sampling method (also known as availability sampling) (Kitchenham and Pfleeger, 2002; Baltar and Brunet, 2012) through on-line questionnaires administered to a sample of final consumers in Italy. The convenience sampling method is increasingly widespread for online surveys (Leiner, 2016). Many researchers adopt this method because it is inexpensive, fast and respondents are readily available (Schmidt and Hollensen, 2006; Wright, 2005). In this case, we chose to collect data using the main Italian consumers’ issues-related pages of the social network Facebook. Selection of respondents has been fixed on having made purchases of food products at least once in the previous six months.

The questionnaire has been administered online, and consumers were accompanied by images and photos of products to facilitate the understanding of each question.

The valid answers collected and analysed are 587.

3.3 Methodology for data analysis

In keeping the objective of increasing the number of variables usually involved in this type of analysis, it was necessary to identify an adequate data analysis methodology. The goal was to use a method able to grasp the complex relationship between each of the variables and the purchase frequency declared by consumers, also considering the correlation between factors.

For this purpose, the decision tree methodology was adopted. This methodology has been used in previous studies on food consumption (wine and organic food) to establish which factors influence the consumer preference and, therefore, the purchasing choices (Jovanović *et al.*, 2017; Vindigni *et al.*, 2002). Decision tree is a methodology generally used

to classify data based on multiple covariates or to develop prediction algorithms for a target variable (Breiman *et al.*, 1984). There are several advantages of this tool, as the facilitation of the complex relationship between variables by dividing them into significant subgroups. Again, it allows an easily management of missing values and skewed data without needing to resort to imputation and data transformation. Finally, it is robust to outliers (Song and Ying, 2015; De Ona *et al.*, 2012).

This method also has disadvantages: the main problem is that it can be subjected to overfitting and under fitting, limiting the generalizability and robustness of the results (Song and Ying, 2015). In order to avoid this problem, some methods that aggregate the results of different trees, to obtain a forest of predictions, are available. The aggregate methods combine hundreds or thousands (or even more) of decision trees, trained on a slightly different set of observations (e.g. random forest) considering only a subsample of features and/or considering a subsample of splitting values (e.g. extra trees method).

Among the different aggregate methods of tree classification, we have chosen the extra tree classifier, which seems to give best performance and helps reducing variance and overfitting, especially for noise and correlated data (Geurts *et al.*, 2006). The main difference between the more common random forests and extra trees lies in the fact that, instead of computing the locally optimal feature/split combination (for the random forest), for each feature under consideration, a random value is selected for the split (for the extra trees). Moreover, the extra tree classifier uses the complete dataset in all the trees, whereas in the random forest each tree is trained only in a subsample of it.

Considering the research questions, descriptive statistics methodologies based on frequency analysis did not seem to be adequate to provide robust and synthetic results on the role of each of the 14 variables considered in this analysis framework. For example, compared to the linear regression that was tested in the data analysis phase, the chosen method showed better ability to explain the relationships between variables, as a non-linear method. Furthermore, the extra tree classifier seems to be the most suitable as an ensemble learning method since the combination of different tree classifiers allows overcoming the problem of correlation of variables by emphasizing the feature selection and measuring the percentage weight of each variable in the classification.

4. Results

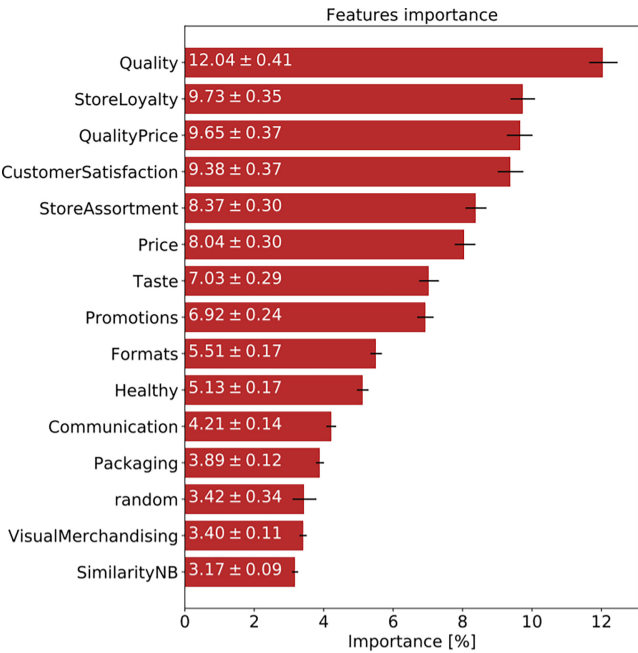
Data have been analysed according to the extra tree classifier methodology. The dependent variable for which the importance of each feature was estimated is the purchase frequency. The importance of each feature was estimated as the “mean decrease impurity” as reported in the Breiman *et al.* (1984) “Classification and regression trees”.

The analysis included the 14 selected variables; however, in order to consider the possibility that results were influenced by the noise of the dataset, we introduced a random variable that has been used to have a reference level for the importance value. All the features with an importance value lower or similar to the random variable have been considered not significant.

Figure 1 presents the results of the analysis in terms of percentage importance of each variable on the purchase frequency. The importance is not measured by considering the mere distribution of frequency of responses but taking into account the role of each factor in relation to the others, providing comprehensive data on the hierarchy of the variables used in the model. The methodology, therefore, compared to linear methods, has a greater ability to consider the relationships between variables.

So, on each line of the histogram it is possible to read the percentage weight of each factor in consumers purchasing decisions. In order to estimate the uncertainty in the feature importance, we repeated the extra tree classification analysis 1,000 times. The plot reports the

Figure 1.
Percentage weight of
each factor in
consumers purchasing
decisions



median of the importance estimated for each feature (red bar) and the 16h and 84th percentile of their distribution (black lines).

The correlation matrix (Figure 2) shows that the 14 variables have some positive correlations. This is the case of quality and taste, price and quality/price, store loyalty and store assortment, customer satisfaction and taste, all with a correlation index greater than 0.5. Therefore, it can be noted that the factors included in the analysis are in some cases reciprocally influencing and do not act individually.

5. Discussion

The extra tree classification allows classifying the features and measuring the weight of each variable (Geurts *et al.*, 2006) which has influence on the purchasing frequency of private label food products.

The first important finding of the survey is that, although no more important variables than others emerge, quality is the first priority (12.04%), in line with the results of previous research (Calvo Porral and Levy-Mangin, 2016; Erdem *et al.*, 2004). This is a less obvious result than it appears: in general, the literature has shown the importance of perceived quality on the purchase of food products (Brečić *et al.*, 2017), but for private label products it is different. Indeed, for a long time, the positioning of private label products put price, promotions and price at the first place among the drivers of consumers' choice (Baltras, 1997; Sinha and Batra, 1999).

Our results reveal that the relevance of quality measures the trading up of the private label offer of Italian retailers and the consequent perception of the final demand (Martinelli, 2018). According to this, the sample does not reveal preference for private label products because of their price (8.04%) or for sale promotions (6.92%). First and foremost, consumers perceive the quality of products and raw materials more important than price-related features, and this is

| | | | | | | | | | | | | | | |
|----------------------|---------|-------|---------|-----------|---------------|------------|--------------|--------------|---------------------|----------------------|-----------------|--------------|---------|-------|
| Quality | 1,00 | 0,37 | 0,38 | 0,32 | 0,42 | 0,28 | 0,15 | 0,42 | 0,24 | 0,54 | 0,34 | 0,46 | 0,51 | 0,62 |
| Price | 0,37 | 1,00 | 0,27 | 0,17 | 0,27 | 0,49 | 0,24 | 0,65 | 0,21 | 0,42 | 0,28 | 0,30 | 0,28 | 0,43 |
| Formats | 0,38 | 0,27 | 1,00 | 0,48 | 0,37 | 0,24 | 0,23 | 0,30 | 0,42 | 0,31 | 0,40 | 0,41 | 0,37 | 0,37 |
| Packaging | 0,32 | 0,17 | 0,48 | 1,00 | 0,48 | 0,19 | 0,23 | 0,18 | 0,47 | 0,26 | 0,37 | 0,37 | 0,39 | 0,31 |
| Communication | 0,42 | 0,27 | 0,37 | 0,48 | 1,00 | 0,34 | 0,30 | 0,30 | 0,44 | 0,42 | 0,35 | 0,46 | 0,52 | 0,40 |
| Promotions | 0,28 | 0,49 | 0,24 | 0,19 | 0,34 | 1,00 | 0,35 | 0,45 | 0,30 | 0,38 | 0,32 | 0,29 | 0,31 | 0,37 |
| SimilarityNB | 0,15 | 0,24 | 0,23 | 0,23 | 0,30 | 0,35 | 1,00 | 0,20 | 0,32 | 0,18 | 0,23 | 0,18 | 0,19 | 0,19 |
| QualityPrice | 0,42 | 0,65 | 0,30 | 0,18 | 0,30 | 0,45 | 0,20 | 1,00 | 0,22 | 0,57 | 0,35 | 0,42 | 0,35 | 0,49 |
| VisualMerchandising | 0,24 | 0,21 | 0,42 | 0,47 | 0,44 | 0,30 | 0,32 | 0,22 | 1,00 | 0,32 | 0,43 | 0,42 | 0,34 | 0,29 |
| CustomerSatisfaction | 0,54 | 0,42 | 0,31 | 0,26 | 0,42 | 0,38 | 0,18 | 0,57 | 0,32 | 1,00 | 0,53 | 0,54 | 0,44 | 0,66 |
| StoreAssortment | 0,34 | 0,28 | 0,40 | 0,37 | 0,35 | 0,32 | 0,23 | 0,35 | 0,43 | 0,53 | 1,00 | 0,59 | 0,42 | 0,47 |
| StoreLoyalty | 0,46 | 0,30 | 0,41 | 0,37 | 0,46 | 0,29 | 0,18 | 0,42 | 0,42 | 0,54 | 0,59 | 1,00 | 0,51 | 0,50 |
| Healthy | 0,51 | 0,28 | 0,37 | 0,39 | 0,52 | 0,31 | 0,19 | 0,33 | 0,34 | 0,44 | 0,42 | 0,51 | 1,00 | 0,48 |
| Taste | 0,62 | 0,43 | 0,37 | 0,31 | 0,40 | 0,37 | 0,19 | 0,49 | 0,29 | 0,66 | 0,47 | 0,50 | 0,48 | 1,00 |
| | Quality | Price | Formats | Packaging | Communication | Promotions | SimilarityNB | QualityPrice | VisualMerchandising | CustomerSatisfaction | StoreAssortment | StoreLoyalty | Healthy | Taste |

Private label
food products

Figure 2.
Correlation matrix

also asserted by the recent literature (Vo and Nguyen, 2015; My *et al.*, 2018). Even when consumers entrust greater importance to price, they do not do so just in relation to quality: consequently, the quality/price factor resulted at the third place in importance (9.65%).

Store loyalty follows, with 9.65% weight on the frequency of purchase, highlighting the strategic role of private labels for retailers and confirming what Ailawadi *et al.* (2008) and Koschate-Fischer *et al.* (2014) stated. Moreover, it is in accordance with previous research showing that consumer confidence is influenced by the retailer's fascia capacity (Bao *et al.*, 2011), and consumers use the store image and corporate reputation to reduce the perceived risk when buying private labels products (Purohit and Srivastava, 2001).

The retailer's influence is greater for products whose brand name corresponds to the retailer's name since consumers tend to choose familiar brands, making the recognition/familiarity a key variable in their decision-making process (McNeill and Wyeth, 2011). About this, Godderidge *et al.* (2016) highlighted the difficulty of measuring the product-store relationship and the transfer of trust from the physical store to the product with the retailer's name, although this is a concept frequently outlined by practitioners as an element of evolution of the private label. The link between the level of trust built by the retailer over time, the store atmosphere, the front office staff behaviour and the choice of private label products is important and worth to be further investigated.

The role of retailers can also be found for another variable: store assortment (8.37%). Data seem to confirm what was assumed in previous studies (Gázquez-Abad Martínez-Lopez, 2015): the overall store assortment that is usually frequented by consumers and the satisfaction they derive directly affects the purchasing frequency of the retailer's branded products.

In order to obtain a clearer picture, the observed variables have been classified into groups, depending on their importance. A first group (importance larger than ~7%) is composed by eight variables of heterogeneous nature: product-related variables (quality and taste), store-related variables (store loyalty and store assortment), price-related variables (quality/price, price and promotions) and variables related to post-consume satisfaction that determines the buy-back (customer satisfaction). It is not possible to identify an item or a category of variables as the main driver of private label food choice. The purchasing decision seems to be the result of a process influenced by a mixture of different variables that influence themselves (confirmed by the correlation matrix, Figure 2).

These considerations are supported by the second group of variables (importance between ~4% and ~5%); formats and health. The availability of different formats, tastes and healthy features seem to have a moderate importance for consumers. This result seems to validate what stated by [Dolekoglu et al. \(2008\)](#) and [Koutsimanis et al. \(2012\)](#) and is consistent with the strategies of Italian retailers. Indeed, in recent years, retailers' branding strategies are moving towards increasing product differentiation, widening the range in terms of variety and diversity of formats. Furthermore, there are growing trends in healthy products (organic, healthy and free from) assessed by the growing attention of consumers to this topic ([Euromonitor, 2019](#)).

Finally, the last group of factors is composed of variables that weigh as the random variable (communication, packaging, similarity with national brand and visual merchandising). In this case, these variables do not exert any influence on the frequency of purchase. The motivation could be linked to the specific sample and data noise. However, it can be affirmed that the lack of significant impact of these variables is consistent with what happens in the evolving scenario of the private label in Italy. Communication, advertising, well-designed packaging and ad hoc visual merchandising strategies for private labels seem to be part of retailers' policies only recently and just for the most marketing-oriented companies, as different studies highlighted ([Ravazzi, 2016](#); [Ter Braak et al., 2014](#)).

Finally, the similarity with leader brands that are well established in the market did not emerge as a factor of influence. This result is consistent with previous research ([Aribarg et al., 2014](#)) showing that similarity with national brands has a positive effect on the frequency of purchase only for retailers who do not have well-known private label product lines. Imitation strategies (e.g. copycat brands) seem to be overcome in the Italian market. Furthermore, the drivers of choice for private label food products start from the perception of quality and range, to factors linked to production and consumer satisfaction, store-related factors, trust built over time and go well beyond the products' similarity with national brands.

6. Conclusion

This study aimed at understanding which factors have influence on the purchase frequency of private label food products. A survey was conducted in Italy on a sample of final consumers based on an analysis framework, which included 14 variables, providing an overall view on the main factors affecting consumers' choices. The results of the research show that although a group of heterogeneous variables resulted with a relevant influence on consumers' buying decisions, quality emerged as the most important variable, together with factors related to the perception about products. This indicates a significant change in consumers' perception about private label products, which are no more associated to lower prices and promotions and which result connected, in addition to quality, with the role of the store and the trust built over time by the retailer, as the analysis using the extra tree methodology pointed out.

The variables linked to communication and the similarity with national brand products, consistently with what has been discussed so far, resulted as not very relevant.

This study puts in light that consumers who claim to buy private label evaluate a series of factors in an integrated way, as a result of a process that has been stratified over time and includes the trust built by the store and transferred to the store brand. At the theoretical level, the originality of the research lies in the adoption of a wider perspective of analysis compared to previous studies, with the latter considering only few factors of influence in consumers' decisions related to private label products. In this research, 14 variables have been measured, also analysing the reciprocal influence between them. Therefore, this paper integrates the literature with a methodology that widens the field of analysis, thanks to a higher number of factors considered.

The discussion about the effects of the variables considered can be useful to both scholars and practitioners to better understand the role of private labels in management policies of retailers.

The practical implications of this research are mainly related to the role that consumers attribute to quality in the choice of private label products. As a consequence, assortments decisions, as regards private labels, leave room for an increase in the weight of premium price products, with significant benefits on the profitability of the retailer's assortments. Furthermore, since the evaluation on quality is associated with that on the retailer's image and its brand – as emerged from the research – a clear indication emerges as regards the naming and branding policies for premium price private label product lines.

Moreover, the link between the retailer's brand, its products and the management of a private label requires, on one hand, full integration of marketing choices in the retailing process and, on the other, to establish long-lasting supply relationships with highly qualified, more stable and reliable producers.

This work has some limitations: first, the sampling method is of a non-probabilistic nature (convenience sampling) and the administration of the questionnaire has been carried out online, generating possible distortions in the formation of the sample of interviewees and the bias of self-selection. Second, the study may have been affected by the level of development of private labels in the country analysed, therefore managerial implications should be referred only to countries/contexts with similar level of development.

Future studies adopting the same analysis framework could be conducted through *ex ante* selection of respondents, in order to ensure the representativeness of the sample. Furthermore, in order to validate – or not – the results of the research, it could be increased the number of respondents and replicate the analysis in other markets with different levels of private label development.

References

- Ailawadi, K.L. (2001), "The retail power-performance conundrum: what have we learned?", *Journal of Retailing*, Vol. 77 No. 3, pp. 299-318.
- Ailawadi, K.L. and Keller, K.L. (2004), "Understanding retail branding: conceptual insights and research priorities", *Journal of Retailing*, Vol. 80 No. 4, pp. 331-342.
- Ailawadi, K.L., Pauwels, K. and Steenkamp, J.B.E. (2008), "Private-label use and store loyalty", *Journal of Marketing*, Vol. 72 No. 6, pp. 19-30.
- American Marketing Association (2014), "Private label", available at : <https://www.ama.org/resources/Pages/Dictionary.aspx?dLetter=P&dLetter=P> (accessed 15 April 2014).
- Apelbaum, E., Gerstner, E. and Naik, P. (2003), "The effects of expert quality evaluations versus brand name on price premiums", *The Journal of Product and Brand Management*, Vol. 12 No. 3, pp. 154-165.
- Aribarg, A., Arora, N., Henderson, T. and Kim, Y. (2014), "Private label imitation of a national brand: implications for consumer choice and law", *Journal of Marketing Research*, Vol. 51 No. 6, pp. 657-675.
- Baker, D.A. and Crompton, J.L. (2000), "Quality, satisfaction and behavioral intentions", *Annals of Tourism Research*, Vol. 27 No. 3, pp. 785-804.
- Baltar, F. and Brunet, I. (2012), "Social research 2.0: virtual snowball sampling method using facebook", *Internet Research*, Vol. 22 No. 1, pp. 57-74.
- Baltras, G. (1997), "Determinants of store brand choice: a behavioral analysis", *The Journal of Product and Brand Management*, Vol. 6 No. 5, pp. 315-324.
- Bao, Y., Bao, Y. and Sheng, S. (2011), "Motivating purchase of private brands: effects of store image, product signatureness, and quality variation", *Journal of Business Research*, Vol. 64 No. 2, pp. 220-226.

- Bergès-Sennou, F., Hassan, D., Monier-Dilhan, S. and Raynal, H. (2007), "Consumers' decision between private labels and national brands in a retailer's store: a mixed multinomial logit application", *103rd Seminar, April 23–25, 2007*, European Association of Agricultural Economists, Barcelona, Spain No. 9407.
- Bettman, J.R. (1974), "Relationship of information-processing attitude structures to private brand purchasing behavior", *Journal of Applied Psychology*, Vol. 59 No. 1, p. 79.
- Bland, D. (2004), "Hey, over here, look at me!", *Wine Industry Journal*, Vol. 19 No. 2, pp. 49-50.
- Boone, H.N. and Boone, D.A. (2012), "Analyzing likert data", *Journal of Extension*, Vol. 50 No. 2, pp. 1-5.
- Brečić, R., Mesić, Ž. and Cerjak, M. (2017), "Importance of intrinsic and extrinsic quality food characteristics by different consumer segments", *British Food Journal*, Vol. 119 No. 4, pp. 845-862.
- Breiman, L., Friedman, J., Stone, C.J. and Olshen, R.A. (1984), *Classification and Regression Trees*, CRC Press, Taylor and Francis Group, Boca Raton, FL.
- Brunso, K., Fjord, T.A. and Grunert, K.G. (2002), *Consumers' Food Choice and Quality Perception*, The Aarhus School of Business Pub, Aarhus, Denmark.
- Burton, S., Lichtenstein, D.R., Netemeyer, R.G. and Garretson, J.A. (1998), "A scale for measuring attitude toward private label products and an examination of its psychological and behavioral correlates", *Journal of the Academy of Marketing Science*, Vol. 26 No.4, p. 293.
- Calvo Porral, C. and Lang, M. (2015), "Private labels: the role of manufacturer identification, brand loyalty and image on purchase intention", *British Food Journal*, Vol. 117 No. 2, pp. 506-522.
- Calvo Porral, C. and Levy-Mangin, J. (2016), "Food private label brands: the role of consumer trust on loyalty and purchase intention", *British Food Journal*, Vol. 118 No. 3, pp. 679-696.
- Castaldo, S., Grosso, M. and Premazzi, K. (2013), *Retail and Channel Marketing*, Edward Elgar Publishing, Cheltenham.
- Collins-Dodd, C. and Lynne Zaichkowsky, J. (1999), "National brand responses to brand imitation: retailers versus other manufacturers", *The Journal of Product and Brand Management*, Vol. 8 No. 2, pp. 96-105.
- Danziger, S., Hadar, L. and Morwitz, V.G. (2014), "Retailer pricing strategy and consumer choice under price uncertainty", *Journal of Consumer Research*, Vol. 41 No. 3, pp. 761-774.
- De Wulf, K., Odekerken-Schröder, G., Goedertier, F. and Van Ossel, G. (2005), "Consumer perceptions of store brands versus national brands", *Journal of Consumer Marketing*, Vol. 22, pp. 223-232.
- Dolekoglu, C.O., Albayrak, M., Kara, A. and Keskin, G. (2008), "Analysis of consumer perceptions and preferences of store brands versus national brands: an exploratory study in an emerging market", *Journal of Euromarketing*, Vol. 17 No. 2, pp. 109-125.
- Dursun, I., Kabadayi, E.T., Alan, A.K. and Sezen, B. (2011), "Store brand purchase intention: effects of risk, quality, familiarity and store brand shelf space", *Procedia-Social and Behavioral Sciences*, Vol. 24, pp. 1190-1200.
- Erdem, T., Zhao, Y. and Valenzuela, A. (2004), "Performance of store brands: a cross-country analysis of consumer store-brand preferences, perceptions, and risk", *Journal of Marketing Research*, Vol. 41 No. 1, pp. 86-100.
- Espejel, J. and Fandos, C. (2009), "Wine marketing strategies in Spain: a structural equation approach to consumer response to protected designations of origin (PDOs)", *International Journal of Wine Business Research*, Vol. 21 No. 3, pp. 267-288.
- Euromonitor (2019), "Health and wellness in Italy", available at: www.euromonitor.com (accessed 17 October 2019).
- Fall Diallo, M., Chandon, J.L., Cliquet, G. and Philippe, J. (2013), "Factors influencing consumer behaviour towards store brands: evidence from the French market", *International Journal of Retail and Distribution Management*, Vol. 41 No. 6, pp. 422-441.

- Fan, X., Qian, Y. and Huang, P. (2012), "Factors influencing consumer behaviour towards store brand—a meta-analysis", *International Journal of Market Research*, Vol. 54 No. 3, pp. 407-430.
- Gao, L. and Simonson, I. (2016), "The positive effect of assortment size on purchase likelihood: the moderating influence of decision order", *Journal of Consumer Psychology*, Vol. 26 No. 4, pp. 542-549.
- Garretson, J.A., Fisher, D. and Burton, S. (2002), "Antecedents of private label attitude and national brand promotion attitude: similarities and differences", *Journal of Retailing*, Vol. 78 No. 2, pp. 91-99.
- Gedenk, K. and Neslin, S.A. (2000), "Die wirkung von preis-und nicht-preis-promotions auf die markenloyalität", *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung*, Vol. 52 No. 4, pp. 370-392.
- Gendel-Guterman, H. and Levy, S. (2013), "Does consumers' personal involvement have an influence on store brand buying proneness?", *Journal of Consumer Marketing*, Vol. 30 No. 7, pp. 553-562.
- Geurts, P., Ernst, D. and Wehenkel, L. (2006), "Extremely randomized trees", *Machine Learning*, Vol. 63 No. 1, pp. 3-42.
- Ghvanidze, S., Velikova, N., Dodd, T. and Oldewage-Theron, W. (2017), "A discrete choice experiment of the impact of consumers' environmental values, ethical concerns, and health consciousness on food choices: a cross-cultural analysis", *British Food Journal*, Vol. 119 No. 4, pp. 863-881.
- Gómez-Suárez, M., Quiñones, M. and Yagüe-Guillén, M.J. (2017), "Private label research: a review of consumer purchase decision models", *Advances in National Brand and Private Label Marketing*, Springer, Cham, pp. 165-172.
- Godderidge, P., Johansson, N. and Larsson, L. (2016), *Private Labels and Generation Dislo (Y) Al-The Impact of Private Labels on Store Loyalty within the Swedish Grocery Retail Industry*, in Cerne, A. (Ed.), Lund University, School of Economics and Management, Lund.
- Jin, B. and Gu Suh, Y. (2005), "Integrating effect of consumer perception factors in predicting private brand purchase in a Korean discount store context", *Journal of Consumer Marketing*, Vol. 22 Nos 2/3, pp. 62-71.
- Joshi, A., Kale, S., Chandel, S. and Pal, D.K. (2015), "Likert scale: explored and explained", *British Journal of Applied Science and Technology*, Vol. 7 No. 4, pp. 396-403, doi: [10.9734/BJAST/2015/14975](https://doi.org/10.9734/BJAST/2015/14975).
- Jovanović, M.M., Kaščelan, L., Joksimović, M. and Kaščelan, V. (2017), "Decision tree analysis of wine consumers' preferences: evidence from an emerging market", *British Food Journal*, Vol. 119 No. 6, pp. 1349-1361.
- Kahn, B.E., Chernev, A., Böckenholt, U., Bundorf, K., Draganska, M., Hamilton, R. and Wertenbroch, K. (2014), "Consumer and managerial goals in assortment choice and design", *Marketing Letters*, Vol. 25 No. 3, pp. 293-303.
- Karray, S. and Martín-Herrán, G. (2008), "Investigating the relationship between advertising and pricing in a channel with private label offering: a theoretic model", *Review of Marketing Science*, Vol. 6 No. 1, pp. 1-39.
- Kerfoot, S., Davies, B. and Ward, P. (2003), "Visual merchandising and the creation of discernible retail brands", *International Journal of Retail and Distribution Management*, Vol. 31 No. 3, pp. 143-152.
- Kitchenham, B. and Pfleeger, S.L. (2002), "Principles of survey research. Part 5: populations and samples", *Software Engineering Notes*, Vol. 25 No. 5, pp. 17-20.
- Koschate-Fischer, N., Cramer, J. and Hoyer, W.D. (2014), "Moderating effects of the relationship between private label share and store loyalty", *Journal of Marketing*, Vol. 78 No. 2, pp. 69-82.
- Koutsimanis, G., Getter, K., Behe, B., Harte, J. and Almenar, E. (2012), "Influences of packaging attributes on consumer purchase decisions for fresh produce", *Appetite*, Vol. 59 No. 2, pp. 270-280.
- Kumar, N. and Kapoor, S. (2017), "Do labels influence purchase decisions of food products? Study of young consumers of an emerging market", *British Food Journal*, Vol. 119 No. 2, pp. 218-229.

-
- Kumar, N. and Steenkamp, J.B.E. (2007), "Brand versus brand", *International Commerce Review*, Vol. 7 No. 1, pp. 46-53.
- Kuvykaite, R., Dovaliene, A. and Navickiene, L. (2009), "Impact of package elements on consumer's purchase decision", *Economics and Management*, Vol. 14, pp. 441-447.
- Lamey, L., Deleersnyder, B., Dekimpe, M.G. and Steenkamp, J.B.E. (2007), "How business cycles contribute to private-label success: evidence from the United States and Europe", *Journal of Marketing*, Vol. 71 No. 1, pp. 1-15.
- Leiner, D.J. (2016), "Our research's breadth lives on convenience samples—a case study of the online respondent pool 'SoSci panel'", *Studies in Communication Media (SCM)*, Vol. 5 No. 4, pp. 367-396.
- Lin, J.I.A.N.G. and Jie, H. (2010), "The effect of brand similarity on perceived quality of private brand: comparison between private brand and national brand based on external clue", *Journal of Capital University of Economics and Business*, Vol. 4, pp. 63-71.
- Manzur, E., Olavarrieta, S., Hidalgo, P., Farías, P. and Uribe, R. (2011), "Store brand and national brand promotion attitudes antecedents", *Journal of Business Research*, Vol. 64 No. 3, pp. 286-291.
- Markovina, J., Čačić, J., Gajdoš Kljusurić, J. and Kovačić, D. (2011), "Young consumers' perception of functional foods in Croatia", *British Food Journal*, Vol. 113 No. 1, pp. 7-16.
- Martinelli, E. (2018), *Marca del Distributore. Premium Private Label, Ticipità e Fedeltà*, Aracne, pp. 1-128.
- McNeill, L. and Wyeth, E. (2011), "The private label grocery choice: consumer drivers to purchase", *International Review of Retail Distribution and Consumer Research*, Vol. 21 No. 1, pp. 95-109.
- Migliore, G., Schifani, G. and Cembalo, L. (2015), "Opening the black box of food quality in the short supply chain: effects of conventions of quality on consumer choice", *Food Quality and Preference*, Vol. 39, pp. 141-146.
- Mittal, V. and Kamakura, W.A. (2001), "Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effect of customer characteristics", *Journal of Marketing Research*, Vol. 38 No. 1, pp. 131-142.
- Musso, F. (2010), "Innovation in marketing channels: relationships, technology, channel structure", *Symphonya: Emerging Issues in Management*, Vol. 1, pp. 23-42.
- My, N.H., Van Loo, E.J., Rutsaert, P., Tuan, T.H. and Verbeke, W. (2018), "Consumer valuation of quality rice attributes in a developing economy: evidence from a choice experiment in Vietnam", *British Food Journal*, Vol. 120 No. 5, pp. 1059-1072.
- Nochai, R. and Nochai, T. (2011), "The influence of sale promotion factors on purchase decisions: a case study of portable Pcs in Thailand", *International Proceedings of Economics Development and Research*, Vol. 11, pp. 130-134.
- Olbrich, R., Jansen, H.C. and Hundt, M. (2017), "Effects of pricing strategies and product quality on private label and national brand performance", *Journal of Retailing and Consumer Services*, Vol. 34, pp. 294-301.
- Purohit, D. and Srivastava, J. (2001), "Effect of manufacturer reputation, retailer reputation, and product warranty on consumer judgments of product quality: a cue diagnosticity framework", *Journal of Consumer Psychology*, Vol. 10 No. 3, pp. 123-134.
- Ravazzi, C. (2016), *Visual Merchandising: Per Sviluppare la Vendita Visiva Nei Punti di Vendita di Ogni Tipo e Dimensione*, FrancoAngeli, Milano, Vol. 34.
- Ribeiro, A.P.L., Carneiro, J.D.D.S., De Melo Ramos, T., Patterson, L. and Pinto, S.M. (2018), "Determining how packaging and labeling of Requeijão cheese affects the purchase behavior of consumers of different age groups", *British Food Journal*, Vol. 120 No. 6, pp. 1183-1194.
- Richardson, P.S., Jain, A.K. and Dick, A. (1996), "Household store brand proneness: a framework", *Journal of Retailing*, Vol. 72 No. 2, pp. 159-185.

- Rodrigues, D.M., Rodrigues, J.F., Souza, V.R.D., Carneiro, J.D.D.S. and Borges, S.V. (2018), "Consumer preferences for cerrado fruit preserves: a study using conjoint analysis", *British Food Journal*, Vol. 120 No. 4, pp. 827-838.
- Sansone, M. (2014), "Evolving trends in store brand strategy: reflections on literature review and some conceptual considerations", *International Journal of Management Sciences and Business Research*, Vol. 3 No. 4, pp. 22-28.
- Sansone, M. and Colamatteo, A. (2019), "La marca del distributore nelle dinamiche di consumo", *Micro and Macro Marketing*, Vol. 28 No. 2, pp. 313-334.
- Sansone, M., Colamatteo, A. and Pagnanelli, M.A. (2018), "A bibliometric analysis of the private label literature", *Advances in National Brand and Private Label Marketing*, Springer, Cham, pp. 169-176.
- Schmidt, M.J. and Hollensen, S. (2006), *Marketing Research. An International Approach*, Prentice Hall, Harlow.
- Sethuraman, R. and Gielens, K. (2014), "Determinants of store brand share", *Journal of Retailing*, Vol. 90 No. 2, pp. 141-153.
- Silayoi, P. and Speece, M. (2004), "Packaging and purchase decisions: an exploratory study on the impact of involvement level and time pressure", *British Food Journal*, Vol. 106 No. 8, pp. 607-628.
- Simonson, I. (1999), "The effect of product assortment on buyer preference", *Journal of Retailing*, Vol. 75 No. 3, pp. 347-370.
- Sinha, I. and Batra, R. (1999), "The effect of consumer price consciousness on private label purchase", *International Journal of Research in Marketing*, Vol. 16 No. 3, pp. 237-251.
- Sobhanifard, Y. (2018), "Hybrid modelling of the consumption of organic foods in Iran using exploratory factor analysis and an artificial neural network", *British Food Journal*, Vol. 120 No. 1, pp. 44-58.
- Sprott, D.E. and Shimp, T.A. (2004), "Using product sampling to augment the perceived quality of store brands", *Journal of Retailing*, Vol. 80 No. 4, pp. 305-315.
- Ter Braak, A., Geyskens, I. and Dekimpe, M.G. (2014), "Taking private labels upmarket: empirical generalizations on category drivers of premium private label introductions", *Journal of Retailing*, Vol. 90 No. 2, pp. 125-140.
- Tirelli, C. and Pilar Martinez-Ruiz, M. (2014), "Influences of product attributes on sojourners' food purchase decisions", *British Food Journal*, Vol. 116 No. 2, pp. 251-271.
- Vahie, A. and Paswan, A. (2006), "Private label brand image: its relationship with store image and national brand", *International Journal of Retail and Distribution Management*, Vol. 34 No. 1, pp. 67-84.
- Van Horen, F. and Pieters, R. (2012), "Consumer evaluation of copycat brands: the effect of imitation type", *International Journal of Research in Marketing*, Vol. 29 No. 3, pp. 246-255.
- Vindigni, G., Janssen, M.A. and Jager, W. (2002), "Organic food consumption: a multitheoretical framework of consumer decision making", *British Food Journal*, Vol. 104 No. 8, pp. 624-642.
- Vo, T.T. and Nguyen, C.T. (2015), "Factors influencing customer perceived quality and purchase intention toward private labels in the Vietnam market: the moderating effects of store image", *International Journal of Marketing Studies*, Vol. 7 No. 4, p. 51.
- Wells, L.E., Farley, H. and Armstrong, G.A. (2007), "The importance of packaging design for own-label food brands", *International Journal of Retail and Distribution Management*, Vol. 35 No. 9, pp. 677-690.
- Wright, K.B. (2005), "Researching internet-based populations: advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services", *Journal of Computer-Mediated Communication*, Vol. 10 No. 3, pp. 229-232.

Further reading

- De Ona, J., De Ona, R. and Calvo, F.J. (2012), "A classification tree approach to identify key factors of transit service quality", *Expert Systems with Applications*, Vol. 39 No. 12, pp. 11164-11171.
- Gázquez-Abad, J.C. and Martínez-López, F.J. (2015), "The relationship between assortment size and category sales: a panel data analysis on national brands and private labels", *Advances in National Brand and Private Label Marketing*, Springer, Cham, pp. 71-81.
- Giraud-Héraud, E., Rouached, L. and Soler, L.G. (2003), *Minimum Quality Standard and Premium Private Labels*, Cahier n° 2003-008, pp. 1-24.
- Song, Y.Y. and Ying, L.U. (2015), "Decision tree methods: applications for classification and prediction", *Shanghai Archives of Psychiatry*, Vol. 27 No. 2, p. 130.

Corresponding author

Annarita Colamatteo can be contacted at: a.colamatteo@unicas.it