SUSTAINABILITY TRENDS AND CONSUMER PERCEIVED RISKS TOWARDS PRIVATE LABELS

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Abstract. The present paper explores differences between perceiving consumer risk towards products under private labels (PPLs) versus products under manufacture brands (PMBs) on Russian metropolitan markets (St. Petersburg, namely). The research model (Model RFID) designed taking into account the direct and indirect influence on the said risks from a set of factors relevant to buying decisions. The theoretical and practical consistency of the model tested by relevant statistical tools. Some limitations of the research are presented, as well as recommendations for brand managers aimed at overcoming traditional and strong (though decreasing) PPL risks among Russian consumers. It has been hypothesized that as the private brand phenomenon continues to evolve, a further change in branding strategy should be greening private brands to make them more competitive. Directions and goals for future research concerning the relationship between private labels understood as sustainable brands formulated in brief.

Keywords: consumer perceived risk; FMCG, green brand; manufacturer brand; perceived value, private label, sustainable brand, retailer image


JEL Classifications: M310
1. Introduction

The rapid ramification of products under private labels (PPL) on fast-moving consumer goods (FMCG) markets inspires a growing interest in private labels all over the world. Nowadays the shares of PPLs in the total number of products sold by FMCG retailers show significant differences by countries. However, among many national differences, there is an appreciable general trend: permanently increasing numbers of PPLs in a permanently increasing number of countries. So, according to Nielsen/PLMA 2016 Year-book in such countries as Spain, United Kingdom, Portugal, and Germany the PPL market shares were 49%, 47%, 43%, and 41% respectively (PLMA, 2016). The Nielsen 2019 data (Private label…, 2019) demonstrated that market share for PPLs increased in 17 European countries’ market share for private labels stands at 30% or more. Spain, Switzerland, and the United Kingdom lead the way with the highest market shares at above 50% of the 20 countries studied by Nielsen; the same indicator in Germany, Belgium, and Portugal is more than 40%. Even more inspirational figures concerning private label applications are now in the Russian market. In 2016, the total turnover of PPLs in Russia accounted for more than 10 bln. RUR, with a trend for further growth. Retailers operating in the Russian FMCG market have recognized the opportunity and started introducing their own private labels. This indicates that there is significant room for introducing additional PPLs on the Russian market where their share in retail sales is still much lower than in developed countries.

Previously, the focus of FMCG markets academic research was mainly on products under manufacturer brands – PMBs (Buck, 1993; Lambin et al., 2007; Turner, Grant, 2011). However, a significant change in the research focus took place in the last decade. Numerous papers on different aspects of the PPL phenomenon appeared (The private…, 2011; Manikandan, 2012; Trends…, 2015), including those on the Russian FMCG market. According to the study carried out by the Advanter Group (Private label…, 2018), 75% of the customers living in Russian cities having more than one million inhabitants preferred to buy PPLs (Moscow – 78%; Saint Petersburg - 88%). Despite the general economic recession and the corresponding decline of purchasing power in Russia (partly resulted from anti-Russian sanctions, partly by COVID-19 pandemic), there are signals of economic recovery but with the lower buying power of the population. Therefore, one may forecast competition growth between PMBs and PPLs in favor of the last in the near future.

The first reason to carry out the present research is a shortage of conceptual and empirical works on the subject whereas in practice an active development of Russian PPLs takes place. The way of PPL application in Russia usually follows the western one – in good conformity with the lead-lag analysis (Hollensen, 2014, p.180) – and thus ignores the need to take into account economic and psychological portrait of Russian consumers and their perceptions of PPLs, as well as the unique features of the post-Soviet Russian FMCG market. Up to 2002, the special and severe all-Russia standards inherited from the Soviet era (GOST standards) existed. They applied to FMCG products (especially to foodstuff category) and were obligatory to respect. Later the Federal law on technical regulation mainly replaced GOSTs standards by “technical rules” developed and approved at the manufacturer level, with a sort of rather weak federal/regional supervising. Such a weakening in state regulation led to the obvious deterioration of FMCG products’ quality control. Russian media were overwhelmed with information on low quality and different falsifications in the FMCG market. As a result, Russian consumers had to look for a criterion (and a sign) of the quality/safety of FMCG products. For example, the contemporary worldwide popularity of halal products (Wilson, Liu, 2010) takes now a place also in Russia (Galiulina et al., 2016; Cherenkov, Mamedova, 2019; Chefenkov, Tanichev, 2020). It is noteworthy that these products are popular not only among Muslims. This can serve as an example of specific consumer behavior in search of guaranteed quality and safety, with the use of such non-government and formerly exotic symbols as halal and kosher. Such guarantees are very important in the times of the modernist economy when consumers have to choose not products but rather brands that factually are simulacra (Cherenkov et al., 2020).
The second reason is a pursuit to show that consumers feel a difference in perceived risks associated with PPLs versus PMBs. It was definitely found (Glynn, Chen, 2009; Nenycz-Thiel, Romaniuk, 2011; Beneke, 2012) that this difference influences negatively the consumers’ intention to buy PPLs (Glynn and Chen 2009; Walsh, Mitchell, 2010; Nenycz-Thiel, Romaniuk, 2011; Beneke et al., 2012). Despite the fact that retail chains invest heavily in improving the quality of PPLs, consumers count such products as «low-cost or tolerable products at a low price». This perception anchors rather deeply in the minds of many buyers (Valaskova et al., 2018). Therefore, buying such goods, as compared to purchasing well-known PMBs, implies a certain perceived risk for consumers (Lin et al., 2009; Dursun et al., 2011; Rubio et al., 2014). This stereotype of perceiving PPL quality (Cumar, Kothari, 2015) roots mainly in the fact that consumers are not sufficiently aware of benefits got as a result of purchasing these products. In some cases, they even have no idea that the products they prefer and purchase systematically belong to the PPL category. This lack of knowledge about PPLs and their attractive points is largely due to the cost-saving specificity in retailers' branding strategies. As a rule, there is no sufficient attention to media advertising costs that — along with the impact of other factors, such as saving logistics costs, gaining from active and lean sales promotion, — allow to reduce the PPLs' prices significantly (up to 25-30% in comparison with the prices for similar PMBs). Therefore, perceived consumer risk should be taken into account while developing a PPL branding strategy (Giovannini et al., 2017), and it should be appropriately managed.

Besides, there is a lack of research unveiling how to manage or manipulate the perceived consumer risk of buying PPLs. One of the approaches to managing perceived consumer risk regarding buying PPLs aims to explain what factors influence and how they influence the said risk, and thus to give understanding for private label managers in retail chains how to reduce this negative perception (Peter, Ryan, 1976; Arslan, 2013; Lukasik, Schivinsky, 2015). This topic attracts also the attention of Russian scholars (Starov, Kiriykov, 2016; Starov et al., 2020) but the number of papers is scarce. Therefore, the main goal of this paper is to develop a model including the factors defining the difference between consumer perceptions of risks towards PPLs versus PMBs, and explaining the influence of these factors.

Finally, as was said above, the green sign of halal plays a role as the guaranty of quality/safety but not only. Greening private labels (brands) make them stronger. Hence, some retailers take into account religious beliefs in their own brand politics by offering a range of halal food under their private label (Own brands…, 2010). One can say the same about kosher marked products (Kamins, Marks, 1991). However, the religious affiliation of private labels constitutes only a small part of what can increase the perceived private brand value by greening it and turning it into a sustainable brand. Target markets served by retailers that are owners of private brands are changing due to eco-seeking consumers or “Neo-Greens” (Lewis, Loker, 2010) that can be described as “eco-chic”, “eco-radical” and “see-me” environmentalists. They are looking for visible signs of style and sustainability in the products they purchase. Taking one of the “sustainable brand building” recipes, namely “How to build a sustainable brand” (Fransen, 2020), we can reveal the following ingredients: (1) show distinctly how a private brand product fits into the sustainability space; (2) monitor advertently what the target audience is thinking about sustainable products; (3) search for sustainable suppliers; (4) include sustainability messages into retailer’s integrated marketing communications; (5) permanently measure the building sustainable brand process effectiveness and efficiency. In principle, this is “the alphabet” of branding, but with an emphasis on the concept of sustainability.

The rest of the paper is organized as follows. Section 2 presents the theoretical background of the present research and comprises the literature review on the issues of consumer risk perception while purchasing PPLs as compared to PBLs, with the focus on applicable methods and research tools to be used during our empirical study. Section 3 is mainly concentrated on the consumer risks perception dissimilarities while purchasing PPLs versus PBLs. In Section 4, we discover and justify the method, the proposed research model including the factors influencing the difference between consumer risk perception while purchasing PPLs or PMBs (RFID-model), and provide
research hypotheses. In Section 4, the analysis of research results and directions for future research concerning greening private labels presented. Finally, we point out research limitations and give final considerations on sustainability contribution in formatting the consumer's risk perception while purchasing PPLs.

2. Theoretical Background

The concept of perceived risk has been emerged and begun to quickly develop in the 1960s (Bauer, 1960; Łukasik. Schivinsky, 2015) and occupied a significant place in marketing. The concept is based on the suggestion that any buying action involves some risk. At first, consumers meet an uncertainty regarding purchasing subject; then, there may be unpleasant consequences that he or she can not exactly anticipate (Cunningam, 1967; Vo, Nguyen, 2015). There is some consumer discomfort in both these dimensions of the buying process because consumer is able to find out all the pluses and minuses of purchase only after transaction. Before purchase, consumers have to make their decision in the face of uncertainty (Mitchell, 1998). The concept of perceived risk is widely recognized because it mirrors, in good accordance with reality, what happens with a consumer’s mood or wallet when he or she is not aware of the purchasing subject and doubts the consequences of this purchasing (Sheau-Fen et al., 2012).

Starting from the works of Sir John Maynard Keynes who inspired the research in the field by risk study in the probability theory (Gilies, 2003), the range of relevant definitions became very wide and varied. This is quite understandable since the concept of risk itself is very complex and has not only mathematical but also psychological dimension. One of the simplest definitions is the following: perceived risk is the expected negative utility associated with the purchase of a particular product or brand (Dunn et al., 1986; Manikandan, 2012). This lapidary definition is not much detailed but is a rather precise one. It contains a very simple and clear idea that perceived risk is not objective but is something that exists in the consumer mind and has a subjective nature. Based on the said definition, one can argue that: (1) different consumers could have different levels of perceived risk referred to the same object; (2) the real risk of purchase (if any) could be very different from the one in the consumer mind (to be higher or lower). However, the “real risk” is rather philosophical than economic or marketing notion; it cannot be assessed before the corresponding risky event occurs. Nevertheless, these considerations are important while analyzing how the perceived risk level can influence consumer behavior: consumers tend usually to be risk-averse when talking about buying any product or brand (Batra, Sinha, 2000; Glynn, Chen, 2009).

The only item adding a certain bias to the said definition is the term utility used mainly as a fundamental notion of orthodox (mostly neoclassical) economics. This term has a less psychological dimension than it should be for marketing purposes since there is no conventional metric for utility. However, the term utility is generally understood as a bundle of preferences supplying consumer satisfaction. In consumer behavior, the perceived risk is not the unique factor that influences consumer preferences (Havlena, DeSarbo, 1991); it is only one among the range of factors. Therefore, it is much more useful to understand utility as a consumer satisfaction level that can be got from purchase. Taking into account this semantic uncertainty of the utility notion, one can suggest the use of perceived risk as a peculiar “anti-substitute” for the utility. Although this paper focuses rather on perceived risk than on consumer choice, the above logic can be used to incorporate perceived risk into a utility/choice model. As Dowling and Staelin (1994) considered, the perceived risk consists of two components: (1) uncertainty and (2) adverse consequences. Taking into account this consideration, we propose to understand perceived risk as consumer risk representing uncertainty and expected negative consequences associated with the purchase of a particular product (brand). This definition has advantages of simplicity and is free from difficulties stemmed from a misunderstanding of the term utility.
To define place for perceived risks in different risk classifications, it is necessary to construct firstly a short typology of risks relevant to consumer perception and consumer choice of brands. A number of academic research (Mitchell, 1998; Mitchell, 1999; Sheau-Fen et al., 2012) while conceptualizing perceived risk considered a mix of seven types of risk, representing this risk as a multidimensional phenomenon. Many relevant studies reveal the lack of conformity regarding the conceptualization and operationalization of perceived risk (Conchar et al., 2004; Ganzach et al., 2008; Burt and Sparks, 2016). As to conceptualization and operationalization of perceived consumer risks towards PPLs, it is necessary to say it is an even more sophisticated task. Branding in retail has a wider goal than simply show a “name on a product”, especially when we are talking about the greening of PPLs. Names of retailers used as brands go beyond a simple “product label” by positioning the retailer (as PPL owner) for consumers and suppliers/manufacturers. Retailers as owners of private labels take responsibility for the quality and safety of PPLs. Hence, they have to control manufacturers/suppliers in accordance with their standards. Therefore, consumers receive new alternatives due to a new range of PPLs offered (The impact…, 2011). However, consumers might be confused by seeing on PPLs the retailers' names, not the manufacturers’ ones. Such an alternative could lead to an increase in consumer perceived risk regarding PPLs due to uncertainty and expectation of negative consequences of buying them in comparison with buying well-known national brands (the PMBs). Ultimately, the multidimensionality of the phenomenon of consumer perceived purchasing risk towards PMBs versus PPLs complicates the task of this study.

The main dimensions necessary to take into account while conceptualizing the perceived risk have been earlier defined as “financial, social, psychological, and last, physical” (Ross, 1975). In some later studies, only three dimensions were used (Glynn and Chen, 2009): financial, performance, and social ones. Besides, the integrated approach framework treated perceived risk as a single variable. On the way to conceptualize perceived risks, Mitchell (1999) proposed to make a distinction between inherent and handled risk. The inherent risk is the latent risk that a product category holds for a consumer, as the innate degree of conflict the product class arouses in the consumer mind. The handled risk is the amount of conflict a product class engendered when a buyer chooses a brand from that product category in the usual buying situation. Since the subject of the present study depends on the buyer choice, we are interested in his or her choice between PPLs and PMBs from a viewpoint of consumer perceived purchasing risk. Therefore, the handled risk should be in the focus along with different factors determining consumer choice between products under consideration.

3. Research methodology and research hypotheses

At first, it was necessary to justify an application of perceived risk concept to the case of choosing PPLs by customers (Rastogi, 2013). The idea that perceived risk can influence the PPL success introduced in the second half of the XX century. Thereafter many studies done in the field confirm the real and noticeable difference in the risk perception of buying PPLs versus PMBs. The comparison of the said risks has shown that the latter risk was lower (Richardson et al., 1996; Batra, Sinha, 2000; Erdem et al., 2004; Mieres et al., 2006; Glynn, Chen, 2009; Nenycz-Thie, Romaniuk, 2011; Beneke, 2012; Zain, Saidu, 2016).

Our previous study on the consumer perceived risk towards PPLs (Starov et al, 2016) leads to the conclusion that there are two main research questions to further investigate in the frame of present research:

→ Whether consumers perceive PBLs as riskier to buy in comparison with buying PMBs?
→ Whether higher perceived risk towards private labels inhibits consumer intention to buy PBLs?

A number of empirical studies (Mieres et al., 2006; Glynn, Chen, 2009; Chaniotakis et al., 2010; Nair, 2011; Wang, Lee, 2016) show that there are positive answers on both questions above. It turned out to be true even for the case of national innovative PMBs (Martos-Partal, 2012). Consumers feel the difference between the perceived risk towards PPLs versus PMBs, and this difference influences negatively the consumers’ proneness to buy PPLs. This means that one should take into account perceived risks when developing branding strategies relied on launching PPLs and these strategies should be appropriately managed in order to develop PPLs successfully.
There is a certain shortage of relevant studies concerning Russian FMCG markets devoted to investigating how to manage consumer perceived risks towards PPLs. One of the approaches to managing the said risks is to identify the most influential factors (Rastogi, 2013) and clarify how they influence consumer perceived risk (Lumpkin, Dunn, 1990). Such knowledge should give private label managers an understanding of how to reduce the said perceived risk. Therefore, to arrange the present research on Russian FMCG markets, the first step is to develop a research RFID model (Fig. 1) describing the relationship between factors, influencing the difference in perceived risk towards PPLs versus PMBs. The basis for the model under consideration is borrowed from (Mierez et al., 2006) where the suitable prototype has been included under the title «Antecedents of the difference in perceived risk between store brands and national brands». We use the said model herein to define both direct and indirect effects caused by variables related to the purchasing behavior such as perceived quality, experience with the product category, familiarity with the store brands, specific self-confidence and reliance on the extrinsic product attributes. However, the relevant literature analysis shows that there is another factor to be included in the proposed RFID model (Fig. 1). Namely, “retailer brand image” (Vahie, Paswan, 2006) offered as an additional variable having, form our point of view, a significant impact on the difference in risk perception toward PPLs versus PMBs in Russia. We assume that this variable can substantially improve the model and better explain the said differences in consumer perception. It should become possible to find a strong correlation between the said additional variable and the country-of-origin effect expected to reveal in the case of comparing international and domestic brands (PPLs and PMBs comparing included). This “made in ...” effect, highly popular in international marketing, is a psychological effect defining consumers' attitudes, perceptions, and purchasing decisions that arise from the country-of-origin labeling.

Figure 1. Research model of relationship between factors influencing the difference in risk perception towards private labels, versus manufacturer brands (Model RFID)

Legend: post reprehendo data, rates of path analysis are taken into account: H1a = +0,46*; H2a = -0,21; H2b = -0,42*; H3a = -0,24*; H3b = -0,18*; H4a = -0,18; H4b = +0,58*; H4c = -0,18; H4d = +0,62*; H5a = -0,19*; H5b = -0,21; H5c = -0,21; H5d = -0,21; H5e = -0,21; H5f = -0,21; H5g = -0,21; H5h = -0,21; H5i = -0,21; H5j = -0,21; H5k = -0,21; H5l = -0,21; H5m = -0,21; H5n = -0,21; H5o = -0,21; H5p = -0,21; H5q = -0,21; H5r = -0,21; H5s = -0,21; H5t = -0,21; H5u = -0,21; H5v = -0,21; H5w = -0,21; H5x = -0,21; H5y = -0,21; H5z = -0,21; H5aa = -0,21; H5ab = -0,21; H5ac = -0,21; H5ad = -0,21; H5ae = -0,21; H5af = -0,21; H5ag = -0,21; H5ah = -0,21; H5ai = -0,21; H5aj = -0,21; H5ak = -0,21; H5al = -0,21; H5am = -0,21; H5an = -0,21; H5ao = -0,21; H5ap = -0,21; H5aq = -0,21; H5ar = -0,21; H5as = -0,21; H5at = -0,21; H5au = -0,21; H5av = -0,21; H5aw = -0,21; H5ax = -0,21; H5ay = -0,21; H5az = -0,21; H5ba = -0,21; H5bb = -0,21; H5bc = -0,21; H5bd = -0,21; H5be = -0,21; H5bf = -0,21; H5bg = -0,21; H5bh = -0,21; H5bi = -0,21; H5bj = -0,21; H5bk = -0,21; H5bl = -0,21; H5bm = -0,21; H5bn = -0,21; H5bo = -0,21; H5bp = -0,21; H5bq = -0,21; H5br = -0,21; H5bs = -0,21; H5bt = -0,21; H5bu = -0,21; H5bv = -0,21; H5bw = -0,21; H5bx = -0,21; H5by = -0,21; H5bz = -0,21; H5ca = -0,21; H5cb = -0,21; H5cc = -0,21; H5cd = -0,21; H5ce = -0,21; H5cf = -0,21; H5cg = -0,21; H5ch = -0,21; H5ci = -0,21; H5cj = -0,21; H5ck = -0,21; H5cl = -0,21; H5cm = -0,21; H5cn = -0,21; H5co = -0,21; H5cp = -0,21; H5cq = -0,21; H5cr = -0,21; H5cs = -0,21; H5ct = -0,21; H5cu = -0,21; H5cv = -0,21; H5cw = -0,21; H5cx = -0,21; H5cy = -0,21; H5cz = -0,21; H5da = -0,21; H5db = -0,21; H5dc = -0,21; H5dd = -0,21; H5de = -0,21; H5df = -0,21; H5dg = -0,21; H5dh = -0,21; H5di = -0,21; H5dj = -0,21; H5dk = -0,21; H5dl = -0,21; H5dm = -0,21; H5dn = -0,21; H5do = -0,21; H5dp = -0,21; H5dq = -0,21; H5dr = -0,21; H5ds = -0,21; H5dt = -0,21; H5du = -0,21; H5dv = -0,21; H5dw = -0,21; H5dx = -0,21; H5dy = -0,21; H5dz = -0,21; H5ea = -0,21; H5eb = -0,21; H5ec = -0,21; H5ed = -0,21; H5ee = -0,21; H5ef = -0,21; H5eg = -0,21; H5eh = -0,21; H5ei = -0,21; H5ej = -0,21; H5ek = -0,21; H5el = -0,21; H5em = -0,21; H5en = -0,21; H5eo = -0,21; H5ep = -0,21; H5eq = -0,21; H5er = -0,21; H5es = -0,21; H5et = -0,21; H5eu = -0,21; H5ev = -0,21; H5ew = -0,21; H5ex = -0,21; H5ey = -0,21; H5ez = -0,21; H5fa = -0,21; H5fb = -0,21; H5fc = -0,21; H5fd = -0,21; H5fe = -0,21; H5ff = -0,21; H5fg = -0,21; H5fh = -0,21; H5fi = -0,21; H5fj = -0,21; H5fk = -0,21; H5fl = -0,21; H5fm = -0,21; H5fn = -0,21; H5fo = -0,21; H5fp = -0,21; H5fq = -0,21; H5fr = -0,21; H5fs = -0,21; H5ft = -0,21; H5fu = -0,21; H5fv = -0,21; H5fw = -0,21; H5fx = -0,21; H5fy = -0,21; H5fz = -0,21.

Source: redesigned and computed by the authors on the basis of (Starov et al., 2016)

To understand better a set of relationships in the said model explanatory descriptions are presented in Table 1.
### Table 1. Explanatory description of the RFID model

<table>
<thead>
<tr>
<th>Influence factors</th>
<th>Items for Measurements</th>
<th>Elaborated research hypotheses</th>
<th>References</th>
</tr>
</thead>
</table>
| **Reliance on the extrinsic attributes of a product (REAP)**  
  `extr_1,2,3`  
  `{ 0,787 }` | 1 – The more expensive the product, the better the quality (`extr_1`); 2 – The better-known the brand name, the better the quality (`extr_2`); 3 – The more attractive and appealing the packaging, the better the quality (`extr_3`) | **H1a** – while evaluating the product, the REAP has a positive and direct influence on a difference between perceived risks toward PPLs vs PMBs. | Richardson et al., 1996. |
| **Specific self-confidence (SSC)**  
  `conf_1, 2, 3`  
  `{ 0,795 }` | 1 – I consider myself capable of choosing a good product (`conf_1`); 2 – I feel quite satisfied with choosing my preferable brands (`conf_2`); 3 – When deciding on a brand, I feel confident of my choice (`conf_3`). | **H2** – the SSC of a consumer has:  
  **H2a** – a direct influence on a difference between perceived risk toward PPLs vs PMBs due to the REAP;  
  **H2b** – the same but resulted in indirect influence. | Schaninger, Sciglimpaglia, 1981; Mierez et al., 2006. |
| **Familiarity with private labels (FPL)**  
  `PL_know_1,2,3`  
  `{ 0,875 }` | 1 – I know what the private label is (`PL_know_1`); 2 – I know several private labels of several retail chains (`PL_know_2`); 3 – I bought earlier or buy now private labels of several retailers (`PL_know_3`). | **H3** – the FPL has:  
  **H3a** – a direct influence on a difference between perceived risk toward PPLs vs PMBs due to the REAP;  
  **H3b** – the same as in the case of the H3a but resulted in an indirect influence. | Alba, Hutchinson, 1987; Richardson, et al., 1996; Jayasankaraprasad, Sakshi, 2017. |
| **Experience with the product category (EPG)**  
  `categ_1,2,3`  
  `{ 0,832 }` | 1 – I am well-informed about products in this product category (`categ_1`); 2 – I know the different available brands well (`categ_2`); 3 – I often buy products from this product category (`categ_3`). | **H4** – the EPG has different influences on the difference between perceived risk toward PLs vs MBs:  
  **H4a** – a direct one due to the REAP;  
  **H4b** – a negative and indirect one resulted from the FPL;  
  **H4c** – a negative and indirect one due to the REAP;  
  **H4d** – a negative and indirect one due to the SSC. | Roselius, 1971; Delgado-Ballester, Munuera-Aleman, 2000; Mierez et al., 2006 |
| **Retailer (store) brand image (RBI)**  
  `image_1,2,3`  
  `{ 0,820 }` | 1 – I like shopping in Auchan / Lenta stores (`image_1`); 2 – There is a good assortment in Auchan / Lenta stores (`image_2`); 3 – There is a good price/quality ration in Auchan / Lenta stores (`image_3`). | **H5** – the RBI has a direct influence on the difference between perceived risk of PLs versus MBs. | Doyle, Fenwick, 1974; Lindquist, 1974; James et al., 1976; Marks, 1976; Bearden, 1977; Bloemer, De Ruyter, 1998; Collins-Dodd, Lindley, 2003; Semeijn, J. et al., 2004; Vahie, Paswan, 2006; Kremer, Viot, 2011. |
| **Perceived risk toward PPL / PMB**  
  `risk_PL_1,2,3`  
  `{ 0,853 }`  
  `{ 0,753 }` | 1 – Are you suspicious of the PMB / PBL quality? 2 – Are you worried that it is not worth the money spent for PPL / PMB? 3 – Does it make you doubt whether you were right in buying PPL / PMB? | Perceived risk toward PPL / PMB = PR/PPL / PR/PMB | Mierez et al., 2006. |

*Source:* developed by the authors
The RFID model (Fig.1) and the hypotheses formulated for the study (Table 1) were useful to find out how and to what extent the set of independent variables in the model affects the desired dependent variable (the difference in the perceived risk of purchasing products marked by private label versus ones marked by manufactured brand). To unveil dissimilarities of perceived risks toward private labels versus ones of manufacturer brands, we selected for the field study four stores of two retail chains operating in Saint Petersburg. These were two stores of Auchan retail chain (assortment – up to 45,000 SKUs; 20% of items are sold under PPL) and two stores of Lenta retail chain (assortment – up to 14,000 SKUs; 8% of items are sold under PPL). In these stores, we conducted interviews with consumers at the end of 2017 and, partly, in early 2018. The age restriction of 18+ was applied to the sample. The sample size after excluding incomplete questionnaires was about 150 in each case (with a pair of spot-checks realized in early 2019). We used the Likert non-equal scales as a measuring instrument.

The choice of retail chains based on the following criteria:
(1) both retailers had a significant and approximately equal number of private labels in their portfolio;
(2) they had similar assortment profiles in terms of price levels, assortment width, and formats;
(3) their owners were from different countries to have a basis for a comparative study to understand the relationship between retailer image and consumer perceived risk (domestic retail chain versus foreign/international retail chain - a rather useful pair (Chuin, Mohamad, 2012) in case we need to evaluate the country-of-origin effect in consumer perceptions).

Criteria for choosing a product category to be under consideration were as following:
(1) the category is widely presented in both retail chains, not less than 5 brand items in each;
(2) the category belongs to those where PPLs are well-known for consumers;
(3) the category includes PPLs that should be developed with the help of the brand house strategy having retailer’s labels on PPL packages;
(4) the category is asymmetrically popular in buying for two subsets of respondents interviewed to give a good variability between answers concerning the EPG variable;
(5) the PMB in the category is advertised both on TV and outdoors.

It turned out that a pair of packed butter items – the PPL Beurre Moulé and PMB Valio (Finnish brand) presented in Auchan’s assortment and Lenta’s assortment, respectively – well met this set of criteria. The dependent variable, as well as independent variables of research measurement, are latent ones and they are all measured (on the basis of 3 questions each compiled on experiences of previous works cited above – See table 1) using 5-point scales (the 7-point version was excluded to facilitate and truncate interviews with permanently impatient buyers in retail chain facilities).

4. Data analysis

The research primary data have been processed by using the SPSS.17 soft package. The RFID model (Fig. 1) and the set of hypotheses (Table 1) have been tested with the use of the structural equation modeling (Schreiber et al., 2006), confirmatory factor analysis (Arslan et al., 2013), and path analysis (Ha, 2002). An explanatory factor analysis (EFA) was necessary before the testing in order to get an initial idea of the dimension of the measurements. Then, the data have been checked for lack of data items and that all the variables had normal distribution. Finally, it was necessary to ensure that the sample size was at least 100. Since both the independent and dependent variables have been compiled from different previous studies, adapted, and integrated into the body of the RFID Model, it was necessary to check the reliability and validity of the model. The analysis has allowed us to conclude that the measuring questions (Table 1) could be applied to make necessary measurements due to the fact that Cronbach’s alpha (α) was higher than minimum required value of 0.7 for all of the said items.
The RFID model has been tested for validity using the EFA allowing to confirm applications of latent variables due to the fact all the conditions of the said analysis (Janssens et al. 2008) were met. All the variables involved were sufficiently cross-correlated. Bartlett’s test of sphericity has shown there was high enough correlation between at least a few of variables included; the paltry P-value (0.000 < 0.001) demanded to reject the null hypothesis (Ho: correlation matrix = identity matrix). Another criterion to justify an applicability of the said factor analysis was the KMO measure of sampling adequacy for a factor analysis (Cerny, Kaiser, 1977) that was equal to 0.799 in our case while the minimum required level should be more than 0.5. Different items belonged to seven dimensions and each dimension has been measured by 3 questions (table 1). The cumulative rotation sum of squared loadings was 76.34% that meant that 7 dimensions explained 76.34% of dispersion. The analysis of community gave the minimum extraction level of 0.579, therefore the conclusion could be made that all of the variables under consideration were relevant. Finally, the rotated component matrix showed that all 7 dimensions were defined, and for all these dimensions there were 3 items to assign to the specific factor (table 1). It turned out to be possible to show that these elements can be clearly assigned to the corresponding factors, because in the case of approximately 120 observations, the significant load of the factor was 0.5, and all products had a load of more than 0.5 for a single factor. The next step was measuring the dependable variable in the RFID model— “Difference between PR/PL and PR/PB” – to define a statistically significant difference.

Assuming that the individual weights of the said risks are equal, the simple means were obtained: (1) PR/PPL = 1/3*(PL_risk_1 + PL_risk_2 + PL_risk_3); and (2) PR/PMB = 1/3*(PB_risk_1 + PB_risk_2 + PB_risk_3). Then, after having applied the t-test to differences between respondents’ risk perceptions the null hypothesis meaning that the said means were equal was rejected. In other words, the 0.95 probability was received that the difference under consideration existed and three new items “Risk_Diff_1”, “Risk_Diff_2”, and “Risk_Diff_3”, – as metrics for “Difference in perceived risk toward PPL versus PMB” – were received. Further data processing was applying a special SPSS.17 module AMOS designed for the purposes of the structural equation modeling (SEM). The confirmatory factor analysis (CFA) and the path analysis with testing hypotheses were carried out. The main difference between EFA and CFA data was that with EFA data clarified whether particular items loaded effectively on a particular number of various factors – they showed explanatively they measure the known number of dimensions. Then, indicators/criteria of reliability (Janssens et al., 2008) for the RFID Model presented by features of one-dimensionality, convergent validity, reliability, and discriminant validity were checked (Table 2).

Table 2. Criteria for determining general quality of Model RFID

<table>
<thead>
<tr>
<th>FIT METRICS</th>
<th>MODEL VALUES</th>
<th>THRESHOLDS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN/DF</td>
<td>1.203</td>
<td>&lt; 2.000</td>
<td>The value of chi-square/number of degrees of freedom (CMIN/DF) – the CMIN confirms that the model under consideration fits to data and is assessed as a good quality one; the CMIN/DF also confirms the conclusion about good quality of the model.</td>
</tr>
<tr>
<td>GFI</td>
<td>0.888</td>
<td>&gt; 0.9</td>
<td>Goodness of Fit Index (GFI) and Adapted Goodness of Fit Index (AGFI) – both indexes are slightly less their thresholds and analysis perhaps the analysis should continue.</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.845</td>
<td>&gt; 0.8</td>
<td></td>
</tr>
<tr>
<td>TLI</td>
<td>0.979</td>
<td>&gt; 0.95</td>
<td>Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) – both indexes are considered as the most reliable for assessing the model; a good model fit has been got.</td>
</tr>
<tr>
<td>CFI</td>
<td>0.983</td>
<td>&gt; 0.95</td>
<td></td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.038</td>
<td>&lt; 0.05</td>
<td>Root Mean Square Error of Approximation (RMSEA) and Root Mean Square Residual (RMSR) – both indexes are well less their thresholds and this fact this fact indicates satisfactory conformity (overall fit) of the model.</td>
</tr>
<tr>
<td>RMSR</td>
<td>0.062</td>
<td>&lt; 0.08</td>
<td></td>
</tr>
</tbody>
</table>

Legend: *outputs resulted from the path analysis, Source: computed and compiled by the authors
Then, to understand better what effect the factors included into the RFID model had on the difference in the perceived consumer risk towards PPLs versus PMBs, the path analysis (Janssens et al., 2008) was conducted related to SEM applied to analyzing direct and indirect relationships between directly observed and indirectly observed (latent) variables. The outputs of the path analysis carried out herein were taken into account and displayed in Fig. 1 and Table 2, respectively, as marked by asterisks (*).

Finally, with routine computing programs and proper checking, the said ten hypotheses displayed on the RFID model were tested. For this purpose, the path analysis was used – whether they all are statistically significant. The outputs of the procedures above are in Table 3. Therefore, the RFID model is in fairly good accordance with the data collected/measured and can be acceptable for practical use for explaining observed and structured data.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>CONSIDERATIONS AND COMMENTS</th>
<th>FINAL DECISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 – Reliance on the extrinsic attributes (REAs) of a product</td>
<td>The REAs influences positively the difference in the perceived risk toward PPLs versus PMBs</td>
<td>accepted</td>
</tr>
<tr>
<td>H2 – Specific self-confidence (SSC)</td>
<td>H2a – there is a statistically significant relationship between the SSC and a specific consumer choice could be done between PPLs and PMBs because his or her low self-confidence forced to be confident while making the said choice</td>
<td>rejected</td>
</tr>
<tr>
<td></td>
<td>H2b – the SSC influences the said difference that means that a consumer, being not sufficiently confident, relies on such attributes of a product as brand and price</td>
<td>accepted</td>
</tr>
<tr>
<td>H3 – Familiarity with private labels (FPL)</td>
<td>H3a – indeed, the FPL influences the said difference in the perceived risk negatively and directly</td>
<td>accepted</td>
</tr>
<tr>
<td></td>
<td>H3b – there is no statistically significant relationship between the FPL and the said difference through the REA</td>
<td>rejected</td>
</tr>
<tr>
<td>H4 – Experience with the product category (EPG)</td>
<td>H4a – the EPG does not influence the difference in perceived risk toward PPLs versus PMBs negatively and directly due to the fact that without knowing certain private labels in this category (FPL) or increasing the consumer’s SSC this factor cannot directly influence the independent variable</td>
<td>rejected</td>
</tr>
<tr>
<td></td>
<td>H4b, H4d – indeed, the EPG influences negatively the dependent variable through the FPL and the SSC</td>
<td>accepted</td>
</tr>
<tr>
<td></td>
<td>H4d – the EPG has not a statistically significant relationship with the REA</td>
<td>rejected</td>
</tr>
<tr>
<td>H5 – Retailer (store) brand image (RTI)</td>
<td>H5 – there is a statistically significant relationship between the RBI and the said difference in perceived risks</td>
<td>accepted</td>
</tr>
</tbody>
</table>

Source: computed, compiled, and finally commented by the authors

The RFID model has explained the difference in consumer perception of risks towards PPLs versus PMBs formed due to the direct and indirect influence of the set of factors described and displayed above (Fig. 1). The path analysis performed shows that three of five factors really influenced directly the difference in perceived risks towards PPLs versus PMBs, and two factors influenced indirectly the independent variable. The authors have no doubt about the application of the RFID model (after necessary adjustments) in a future study regarding sustainable replicas of PPLs and PMBs.

5. Conclusions and future research

There is a set of limitations to be taken into account while analyzing our findings. Firstly, the risk under consideration is understood as an integrated or non-differentiated one. Secondly, a full set of brands in reality sold by retail chains is reduced to one brand in the only one product category. One of the important research conditions is a heterogeneous respondent awareness concerning the selected product category. This circumstance could affect the
study results and should be taken into account in the future while comparing consumer risks towards PPLs versus PMBs. Besides, in addition to a preference bias dependent on certain product categories, an influence of an overall decline in purchasing power of the Russian population after applying anti-Russia sanctions and measures to fight the COVID-19 pandemic could distort a buying behavior toward PPLs preference due to their lower price. In general, the results gained by the authors on the St. Petersburg FMCG market are mainly similar to the results of the predecessors. The worldwide stereotype of consumer attitude toward PPLs as low-quality products is alive also in Russia.

Based on many interviews conducted in 2017-2019, we can construct the portrait of a successful PL-manager. For this position, the following competencies are important: (1) ability to increase consumer awareness and knowledge concerning PPLs in product categories (our findings witness the weak saturation of retailers' websites with PPL information); (2) ability to familiarize consumers with benefits of PPLs (e.g., strengthening tasting and sampling, introducing small packaging); (3) ability to strengthen consumer confidence in making purchasing decisions (e.g., more spectacular display of PPLs, arranging displays with POS-materials); (4) ability to improve retailer brand image (identification of PPLs under a positive retailer’s brand, including attributes of retailer’s sustainability); (5) ability to enhance PPLs attractivity for customers (relevant packaging, place on shelves, PPL pointers and other marketing communication means).

The authors consider that the verification of the presented RFID model viability is a good step toward future research. Brand search attributes (brand name, design, and price) turned out to be the factors of the most powerful influence on consumer decisions towards PPLs. The Russian buyers’ stereotypes are confirmed: “low price for low quality” and “imported PMBs have better quality”. Nevertheless, confidence is obtained in the suitability of the RFID model for studying perceived risks and further developing practical solutions to reduce these risks and improve marketing strategies of retail chains on FMCG markets.

Among prospective paths for future research, we underline the study of opportunities to raise PPL competitiveness through their greening and using positive messages underlining sustainability issues in marketing communication campaigns. The retailers’ decision to develop sustainable private brands seems to be correct from two points of view. Firstly, the decision to green the PPLs is in line with the general societal trend of the transition to sustainable development and enriches the retailers’ branding with a new strategic tool. Thus, retailers embark on a common conceptual sustainability platform with well-known strong national and global brands. Secondly, it is expected greening private brands should maintain/increase customer loyalty to sustainable private brands, which ultimately should also lead to an increase in their contribution to retailers’ income and competitiveness.

In this paper, the RFID model has been considered as a useful tool for assessing the perceived consumer risks towards PPLs vs PMBs. From our point of view, after some tuning, it can be used for comparative analysis (by analogy with the research presented herein) of the consumer perception of risks and benefits concerning sustainable brands created by retailers and manufacturers, respectively.

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