A Replication Study of Consumers' Private Label Purchase Intentions

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The primary purpose of the study is to examine variables related to consumers' intention to purchase private label products in Turkey. This research replicates the 2011 private label products study of Wu *et al.* (2011). The replication study was conducted in order to save time with the questions asked before, to fill theoretical gaps in the original study, and to be able to compare the results obtained a decade ago in Taiwan, to the present day in Turkey. Field research was conducted between December 2019 and February 2020, and 1505 usable surveys were analysed. The direct effects of store image and service quality on brand image and purchase intention, and the indirect effects of mediator variables perceived risk and price awareness on these relations are examined. Also, store type, namely discount, national, and local grocery, was also added to the model. As a result of the analysis, similar findings were obtained only in three out of nine hypotheses with the replicated study. Afterward, moderator variables were added as the discount, national and local stores differed in the model. Factor means in the model are also significantly different to those in Wu et al (2011) regarding store type.

Keywords: Grocery, Private label brand, Purchase Intention, Replication study, Store type.

Introduction

The market share of private label (PL) products in Turkey is around 20% (Gülsaç, 2018). As in the rest of the world, PLs show a growth trend in Turkey. Promotion expenditures on products to keep brand image high for national brands (NB) are reflected as a cost to consumers (Wu *et al.*, 2011). PLs are priced cheaper than NBs and are an option for consumers looking to save money (Garretson *et al.*, 2002). The increase in market share of PLs in consumption increases retailers' strength and brand value. The increasing brand power of the retailer causes local stores to be put under pressure and put them in a difficult position in competition (Ailawadi and Keller, 2004). PLs are contentious in Turkey at present. The Government closely examined PLs just before the Covid-19 pandemic. The Ministry of Commerce has envisaged that restrictions will be imposed on PL products. Chain stores (discounters and national) side with the anti-restriction view. They claim that PLs are essential tools in combating inflation. Local stores, on the other hand, take a restrictive attitude. However, it is observed that local stores also make an effort to present their PLs. The PL issue is widely discussed, including in the national press. This study is carried out to address the PL issue from the perspective of consumers and retailers.

Retailers highly prefer PLs as they provide lower marketing expenditures, procurement prices, and higher profits per unit than NBs (Garretson *et al.*, 2002; Baltas and Argouslidis, 2007). In recent years, there has been a noticeable increase in the market share of PL products. It stems from retailers' ability not only to source a cheaper product but also to implement NB strategies (Valaskova *et al.*, 2018). PLs, reportedly help retailers increasing store traffic and customer loyalty by offering dedicated lines under labels not found in competing stores. In addition, they offer higher margins, increase control over

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shelf space, and give retailers more bargaining power in the distribution channel (Richardson *et al.*, 1994). However, market shares of PLs vary significantly by categories, markets, and countries (Sethuraman and Gielens, 2014; Miquel *et al.*, 2017).

Although PL products were historically positioned at lower quality and lower prices than NBs, there has recently been an increase in quality levels (Rubio *et al.*, 2020). Quality is more important than price in the success of PLs (Batra and Sinha, 2000). So PLs are not just cheap alternatives purchased by people who cannot afford NBs (Baltas and Argouslidis, 2007). In empirical studies, consumers determine the price difference between NBs and PLs to be lower than the price difference in the real market (Thanasuta and Chiaravutthi, 2018). In recent years, PL products have made improvements in packaging and product design as well as quality improvement (Valaskova *et al.*, 2018). Even in the durable goods domain, PL products often have about the same quality as NB products. Despite this, PL tend to be sold at lower prices which influences their price-quality perception (Boyle *et al.*, 2018).

Consumers often do not look at the company that produces the PL; the store image of the retailer selling the product may be enough to build trust (Konuk, 2018). In many cases the PLs are produced by the manufacturers producing NBs (Dawes and Nenycz-Thiel, 2013). Manufacturers may choose to produce PL products due to scale economy in production and distribution, excess capacity utilization, and sales increase without marketing costs (Baltas, 1997). Small and medium-sized enterprises, especially in fast-moving consumer goods, supply large retailers for PL. Sometimes the production of PLs is done internally (Chen *et al.*, 2010).

In summary, the debates that emerged in Turkey formed the primary motivation of this study. The subject of PL is still open to research, and in recent studies, subjects such as the profiling of potential PL buyers (Larson, 2018), intention to switch brands from NB to LB (Lessassy, 2019), social risk related to PL products (Loebnitz et al., 2019), PL product advertisements (Lacoeuilhe *et al.*, 2021), PL product type, price fairness and brand loyalty (Konuk, 2021) discussed. Therefore, it was decided to test a model of consumers' intention to purchase PL products. For this reason, it was agreed that an application should be made to the grocery customers where PL products are sold the most in Turkey. A replication study was considered so that the previously asked, reliability, and validity-tested questions could be used to save time and provide other benefits (Hyman *et al.*, 2006). Replication studies are needed to fill the theoretical gaps (Block and Kuckertz, 2018), they are important for confirming previously obtained results (Burman *et al.*, 2010), and they have an important place in marketing research (Easley *et al.*, 2000). It was decided to conduct a replication study with this motivation, and Wu *et al.*'s (2011) research model was tested.

Theoretical background

Store image

Store image (SI) is a consumer's perception of a store's functional and emotional attributes (Houston and Nevin, 1981). It reflects the complexity of a consumer's perception of the different attributes of a store (Bloemer and De Ruyter, 1998). SI is one of the most important distinguishing features in the fiercely competitive retail market, where companies are trying to differentiate (Konuk, 2018). SI is an important factor in retailing that affects satisfaction and loyalty to the store (Irfan *et al.*, 2019). SI affects PL brand image (PLB) and PL purchase intention (IN) (Girard *et al.*, 2017). If consumers do not know about a PL, their SI influences the decision to purchase the product (Collins-Dodd and Lindley, 2003; Vahie and Paswan, 2006). In other words, the perception of retailers as high quality causes the PL products they offer to be perceived as high quality (Bodur *et al.*, 2016). According to the findings of the study we replicate here study (Wu *et al.*, 2011), SI has a positive and significant effect on the IN. However, it is not related to PLB.

Service quality

According to Parasuraman *et al.* (1985), service quality (SQ) is the degree and direction of the mismatch between consumers' perceptions and performance expectations relating to customer service. Chakrabarty *et al.* (2007) defines compliance with customer requirements in the delivery of a service as SQ. Consumers' perceptions of SQ may vary according to category, income level and other consumer characteristics (Kim, 2019). However, an increase in SQ may cause the business to stand out from its competitors (Mazumder and Hasan, 2014). The SQ of the store is also an important factor affecting the purchasing behaviour of consumers (Carrillat *et al.*, 2009). Because there is a connection between SQ, which is one of the most important factors affecting consumer purchasing decisions, and behavioural intention (Brady *et al.*, 2002). The increase in the SQ of the retailer may cause the PL products to be perceived as better quality. Store SQ is directly related to PL image and IN (Lin *et al.*, 2017). SQ directly affects attitudes towards PLs, but may differ by country (Diallo and Seck, 2018). As stated in the findings of the original study (Wu *et al.*, 2011) being replicated, SQ has a positive and significant effect on the PLB. However, it has no significant effect on IN.

Private label brand image

While retailer image is affected by product, service, and store atmosphere (Mazursky and Jacoby, 1986), PL brand image (PLB) is affected by retailer image. PLB will consist of two dimensions: quality and affective (Keller, 1993). PLs form an essential element in the retailer's strategy and shape the retailer's position, image, and differentiation (Sudhir and Talukdar, 2004; Martenson, 2007). The price difference between a discounted NB and a PL can be negligible (Garretson *et al.*, 2002). Factors other than the price also cause consumers to buy a PL (Garretson *et al.*, 2002). For example, the results show the changing image of grocery brands and the endorsement of such products by consumers of higher socioeconomic status, with significant consequences for retailers and consumer product manufacturers (Baltas and Argouslidis, 2007). Perceived PL quality has a more substantial effect than the NB-PL price difference. This finding confirms that consumers seek value when purchasing PLs without necessarily sacrificing quality (Sethuraman and Gielens, 2014). Store and product quality cause consumers' perceived risk (PR) to decrease (Liljander *et al.*, 2009). Following the findings of the original study being replicated (Wu *et al.*, 2011), PLB has a negative and significant effect on the PR. However, it has no significant effect on the IN.

Perceived risk

Shopping involves risk because consumer decisions have unpredictable and potentially unpleasant consequences (Bauer, 1960). Consumers will buy SBs if they perceive high quality, have a positive image of PLs, and think PLs are not risky (Sethuraman and Gielens, 2014). Consumers still seem to associate PLs with substandard quality due to PRs and believe they are second-rate alternatives (Beneke *et al.*, 2012). When consumers purchase other than NB products, they tend towards strong and quality products that reduce risk (Baltas, 1997). PR should be given more consideration in developing countries where PL products are less known (Diallo and Seck, 2018).

Empirical findings also show differences regarding the relationship between PR and PL brand purchasing. For example, Batra and Sinha (2000) and Diallo (2012) concluded that PR directly affects PL brand purchasing. Beneke *et al.* (2012) found that PR partially affects Premium grocery PL purchasing. Manikandan (2020) concluded that functional risk impacted the PL brand attitude, but social risk and financial risk did not. Conversely, Mostafa and Elseidi (2018) found that PR did not directly or indirectly affect willingness to purchase PL. The different results obtained lead to the conclusion that the effect of PR on PL brand purchasing should be re-examined. According to the findings of the replicated study (Wu *et al.*, 2011), PR has a negative and significant effect on the IN and price consciousness (PC).

Price consciousness

Price consciousness (PC) is defined as a consumer's reluctance to pay higher prices (Lichtenstein *et al.*, 1993). Quality levels may not differ appreciably by brand, and consumer preference focuses more and more on price (Baltas and Argouslidis, 2007). Especially in times of severe economic recession, consumers tend to PLs to find the best price/quality (Kaswengi *et al.*, 2020). Consumers with high PC levels are interested in all promotions such as discounts, promotional offers, and loyalty cards (Khare *et al.*, 2019). From this point of view, it is possible to think that consumers with high PC level will be interested in PLs. The empirical finding is that value awareness (PC) is positively associated with attitudes towards both private brands and NB promotions (Garretson *et al.*, 2002). Previous studies have shown that PC impacts IN (Batra and Sinha, 2000; Glynn and Chen, 2009; Mukherji, 2017). However, Mishra *et al.* (2021) found that PC did not have a moderator effect on the relationship between perceived quality variations and in-store PL marketing and attitude towards PL. As reported in the replicated study (Wu *et al.*, 2011), PC has no significant effect on the IN.

Store type

The store preferences that consumers frequently shop for are affected by various factors and differ. Moreover, the trends of consumers according to the type of store for different product groups will be different. Those who go to the high-quality store want to buy high-quality products, while those who go to the discount store want to buy cheaper products (Schnittka, 2015). The low SQ and prices in discount stores may cause consumers to perceive these stores as low-image (Konuk, 2020). Thus, consumers are expected to show different behaviours according to store preference. Furthermore, customer segmentation may vary according to store types, and retailers should determine positioning strategies (Kim *et al.*, 2019).

For this reason, Lee and Hayman (2008) made a two-group classification, of discount and department stores. In another study, both NBs and PLs were evaluated in terms of price recall and categorized into two groups as discount and traditional (Loy *et al.*, 2020). In premium PLs, when the retailers are grouped as hypermarkets and department stores, store type affects the factors that direct perceived luxury (Kim *et al.*, 2020). We adapt this approach in the present study, extending the scope of the replicated study (Wu *et al.*, 2011). It is expected that there will be a change in the behaviour of consumers according to the most preferred retail store.

Purchase intention

Purchase intention (IN) is defined as one of the components of consumer cognitive behaviour regarding how an individual wants to buy a particular brand (Ling *et al.*, 2010). Intentions are assumed to indicate how people are willing to approach a particular behaviour and how many attempts they have made to perform a particular behaviour (Lim *et al.*, 2016). In other words, IN refers to the possibility of consumers planning or purchasing a particular product or service in the future (Wu *et al.*, 2011). The intention to purchase PL brands is influenced by various needs, including physiological and socio-psychological (Kakkos *et al.*, 2015). In studies conducted for PL products, the effects of different determinants on IN were examined. For instance, SI perception, PL perceived risk, SB price-image (Diallo, 2012); brand awareness, PQ, PR, perceived value for money, perceived value in terms of benefits, and perceived social value (Kakkos *et al.*, 2015); PL attitude, PC, brand consciousness and involvement (Miquel *et al.*, 2017) factors are studied. Liljander *et al.* (2009) examined the direct and indirect effect of perceived value, the effect of store image, PL brand quality, and perceived risk factors. Mostafa and Elseidi (2018) investigated the effects of SI, familiarity with PL, PQ, PR, and PC on the attitude toward PL brand and IN.

Based on the discussion and the original research, the following hypotheses and model (see Fig. 1) will be tested.

H1: SI (Store Image) has a positive effect on the PLB (PL Brand Image).

H2: SI (Store Image) has a positive effect on the IN (Purchase Intention).

H3: SQ (Service Quality) has a positive effect on the PLB (PL Brand Image).

H4: SQ (Service Quality) has a positive effect on the IN (Purchase Intention).

H5: PLB (PL Brand Image) has a negative effect on the PR (Perceived Risk).

H6: PLB (PL Brand Image) has a positive effect on the IN (Purchase Intention).

H7: Consumers' PR (Perceived Risk) has a negative effect on the PC (Price Consciousness).

H8: Consumers' PR (Perceived Risk) has a negative effect on the IN (Purchase Intention).

H9: PC (Price Consciousness) has a positive effect on the IN (Purchase Intention).

H10: Store type has a moderator effect on relations of the research model

H11a,b,c,d,e,f: There is a difference in Store Image, Service Quality, PL Brand Image, Perceived Risk, Price Consciousness, and Purchase Intention means between different store type customers.

Figure 1. Research Model
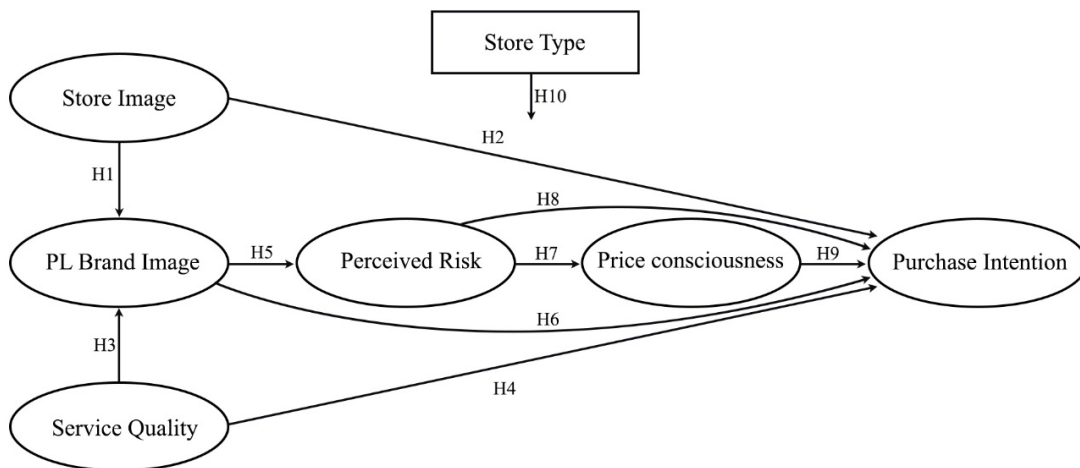
Methodology

Research design and measurement

As mentioned, this study is a replication of the research by Wu *et al.* (2011). For this reason, scale items were used from that study. The first part of the questionnaire included demographic questions. Then, the most frequently shopped store and purchased PL products were asked. In the next section, there is a scale consisting of 32 questions. One item (SI3) was dropped due to low factor loading. All scale items were measured with five-point Likert-type scales ranging from strongly disagree to strongly agree.

There is considerable evidence that common method variance can inflate or deflate the observed correlation between measures of different constructs (Podsakoff et al. 2003). In this study, Harman's single factor test for common method bias was conducted. The variance of the single factor structure was 23.6%, which is below the threshold value of 40% (Babin et al., 2016). Secondly, the common latent factor test was performed, and it

was obtained as 0%. Therefore, we have reason to believe that common method variance is not problematic for this study.

Sample

In this study, empirical data were obtained from different regions of Turkey. Field research was handled between December 2019 and February 2020. One thousand five hundred seventy-two respondents completed the survey. Sixty-seven questionnaires were dropped due to errors. As a result, 1505 observations were used in the analysis. Demographic variables were gender (810 female, 695 male), age (826 18-24 years old, 264 25-29 years old, 174 30-39 years old, 135 40-49 years old, 106 50 and over), education level (94 primary school, 301 high school, 284 associate degree, 773 undergraduate, 53 graduate) and income level (791 2000 ₺ and below, 422 2001-4000 ₺, 218 4001-6000 ₺, 74 6001 ₺ and above).

Retailer and product choices

There may be changes in the purchasing behaviour of consumers with different retailer preferences. For this reason, the participants were asked about the grocery store they shopped most frequently. These stores are divided into three groups as discount (A101, BİM, ŞOK), national (Carrefoursa, Migros) and local/wholesale. 1024 participants (68%) stated that they prefer discount stores (BİM, A101, and ŞOK), 312 (21%) national retailer chains (Migros and Carrefoursa), 165 (11%) local, and wholesale stores. The average age of the participants was 23.47 years, and the average income was 1903 ₺. The average age and income are 22.82 and 1618 ₺ for the discount stores; 25.78 and 2941 for the national groceries; 30.68 and 3045 ₺ for the local retailers. PL products that the participants purchased are given in Fig. 2.

Figure 2. PL products purchased by store type
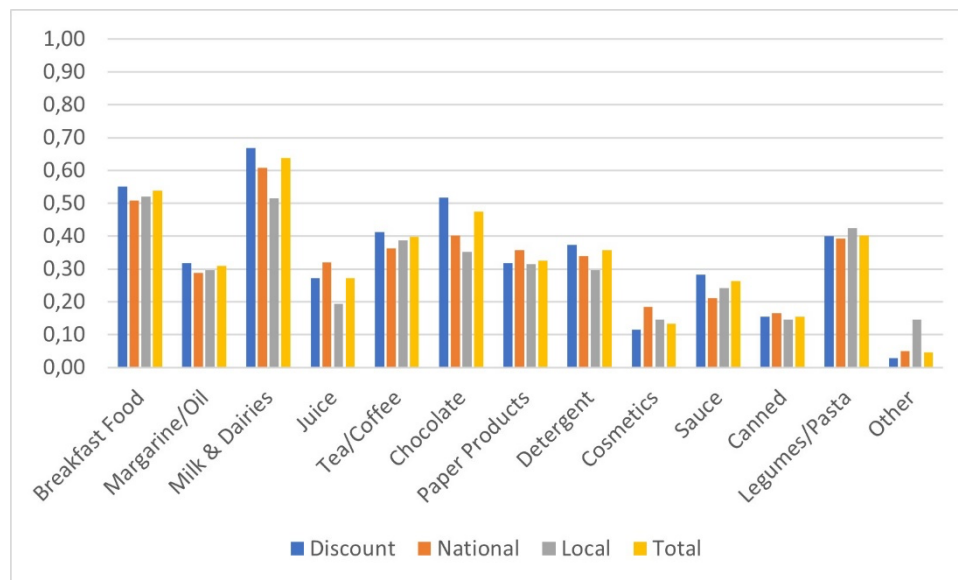
Analysis and Findings

The descriptive statistics of the scales used in the study were examined. In addition, confirmatory factor analysis was performed, and factor loadings were obtained. In addition, reliability and validity values were also obtained. All values are shown in Table 1.

Table 1. Descriptives, reliability, and validity values

Factors	Mean	SD	Skewness	Kurtosis	Weight	Alpha	CR	AVE
Store Image						0.772	0.776	0.410
SI1	3.8166	0.9717	-1.012	0.747	0.593			
SI2	3.3827	0.9674	-0.284	-0.315	0.688			
SI4	3.5528	0.8888	-0.553	0.235	0.591			
SI5	3.1860	1.1234	-0.213	-0.774	0.667			
SI6	3.8558	0.8274	-0.981	1.463	0.657			
Service Quality						0.835	0.811	0.424
SQ1	3.6106	0.9675	-0.594	0.100	0.508			
SQ2	3.6870	0.9331	-0.634	0.168	0.481			
SQ3	3.2425	1.0361	-0.163	-0.565	0.711			
SQ4	3.2924	1.0222	-0.201	-0.541	0.749			
SQ5	3.0219	1.0028	-0.064	-0.428	0.722			
SQ6	3.4385	0.9588	-0.523	-0.030	0.684			
Private Label Brand Image						0.744	0.732	0.366
PLB1	3.8804	0.8562	-1.073	1.473	0.637			
PLB2	3.5601	0.9740	-0.528	-0.301	0.753			
PLB3	3.5641	0.9641	-0.583	-0.096	0.698			
PLB4	3.5455	0.9018	-0.798	0.494	0.415			
PLB5	3.6458	0.8638	-0.849	0.704	0.441			

Table 1 Cont'd

Factors	Mean	SD	Skewness	Kurtosis	Weight	Alpha	CR	AVE
Perceived Risk						0.889	0.879	0.453
PR1	2.3209	1.0060	0.812	0.281	0.521			
PR2	2.4332	1.0255	0.632	-0.184	0.606			
PR3	2.3987	1.0265	0.706	-0.110	0.530			
PR4	2.8286	1.0486	0.055	-0.683	0.770			
PR5	2.8027	1.0551	0.101	-0.826	0.824			
PR6	2.8272	1.0635	0.053	-0.886	0.811			
PR7	2.6432	1.0711	0.282	-0.701	0.701			
PR8	2.6252	1.0571	0.268	-0.636	0.619			
PR9	2.9575	1.1097	-0.021	-0.795	0.596			
Price Consciousness						0.752	0.754	0.434
PC1	3.7010	1.1303	-0.797	-0.203	0.592			
PC2	2.8565	1.1992	0.181	-0.996	0.660			
PC3	3.5914	1.0699	-0.693	-0.192	0.684			
PC4	3.1342	1.2075	-0.143	-1.005	0.696			
Purchase Intention						0.796	0.797	0.662
IN1	3.1010	1.0527	-0.137	-0.666	0.829			
IN2	3.0332	1.0670	-0.056	-0.608	0.798			

As seen in the table, Cronbach Alpha values of all measures range from 0.74 to 0.89, over the acceptable level of 0.70. Composite Reliability values are range from 0.73 to 0.88, over the acceptable level of 0.60. Although there are AVE measurements below 0.50, it is sufficient that alpha and CR are at acceptable levels (Fornell and Larcker, 1981; Lam, 2012). Goodness of fit values obtained as p=0.000; cmin/df= 4.984; GFI= 0.914; AGFI= 0.897; CFI= 0.919; RMSEA= 0.051. These values are satisfactory according to conventional standards.

Then, structural equation model (SEM) was performed via AMOS. While performing SEM analysis, the standard model was tested first. Table 2 shows the results of SEM analysis in this study and standardized regression coefficients of the replicated study.

Table 2. SEM results of this study and replicated study

Relation		Estimate	Std. Est.	S.E.	C.R.	p	Repl. Study Std. Est.	p
PLB ←	SI	0.381	0.582	0.032	11.723	***	-0.08	-
IN ←	SI	-0.002	-0.001	0.060	-0.034	0.973	0.023	**
PLB ←	SQ	0.126	0.151	0.028	4.502	***	0.51	***
IN ←	SQ	0.357	0.200	0.058	6.198	***	0.04	-
PR ←	PLB	-0.960	-0.710	0.084	-11.427	***	-0.93	***
IN ←	PLB	0.498	0.233	0.170	2.937	0.003	0.06	-
PC ←	PR	0.027	0.025	0.033	0.819	0.413	-0.21	***
IN ←	PR	-0.326	-0.206	0.090	-3.637	***	-0.55	**
IN ←	PC	0.423	0.289	0.049	8.669	***	0.02	-

* p<0.05 **p<0.01 ***p<0.001

Goodness of fit values obtained as p=0,000; cmin/df= 5.877; GFI= 0.914; AGFI= 0.895; CFI= 0.933; RMSEA= 0.057 for the replicated model. As seen in the table H1, H3, H4, H5, H6, H8, and H9 hypotheses are accepted; H2 and H7 hypotheses are rejected. H3, H5, and H8 hypotheses show similar results with the replicated study. Moreover, while H1, H4, and H6 were accepted in this study, they were not accepted in Wu *et al.*'s (2011) study; while H2, H7, and H8 were rejected in this study, they were accepted in the replicated study. Then, the store type variable was added as a moderator to the model. The results are given in Table 3.

Table 3. Standardized estimates and p-values of store type

Relation			Discount		National		Local		Difference
			Std. Est.	p	Std. Est.	p	Std. Est.	p	
PLB	←	SI	0.659	***	0.381	***	0.409	0.006	
IN	←	SI	0.108	0.092	-0.106	0.122	-0.269	0.007	D-N**; D-L***
PLB	←	SQ	0.081	0.045	0.381	***	0.362	0.007	D-N**
IN	←	SQ	0.173	***	0.151	0.022	0.430	***	D-L**; N-L*
PR	←	PLB	-0.688	***	-0.824	***	-0.671	***	
IN	←	PLB	0.240	0.022	0.348	0.091	0.260	0.144	
PC	←	PR	-0.046	0.226	0.079	0.215	0.155	0.121	D-N*; D-L*
IN	←	PR	-0.167	0.013	-0.105	0.545	-0.229	0.074	
IN	←	PC	0.243	***	0.338	***	0.141	0.096	
*p<0.05 **p<0.01 ***p<0.001*									

Goodness of fit values obtained as p=0,000; cmin/df= 2.741; GFI= 0.882; AGFI= 0.8565; CFI= 0.893; RMSEA= 0,034 for the extended model. As a result of the critical ratio method, used for group differences, store type makes a significant difference in four relationships. According to the chi-square test results, the models are significantly different at the p<0.01 level. Thus, H10 hypothesis was accepted. The replicated and extended model's estimates obtained as a result of the analysis can be seen in Fig. 3.

Figure 3. Model results
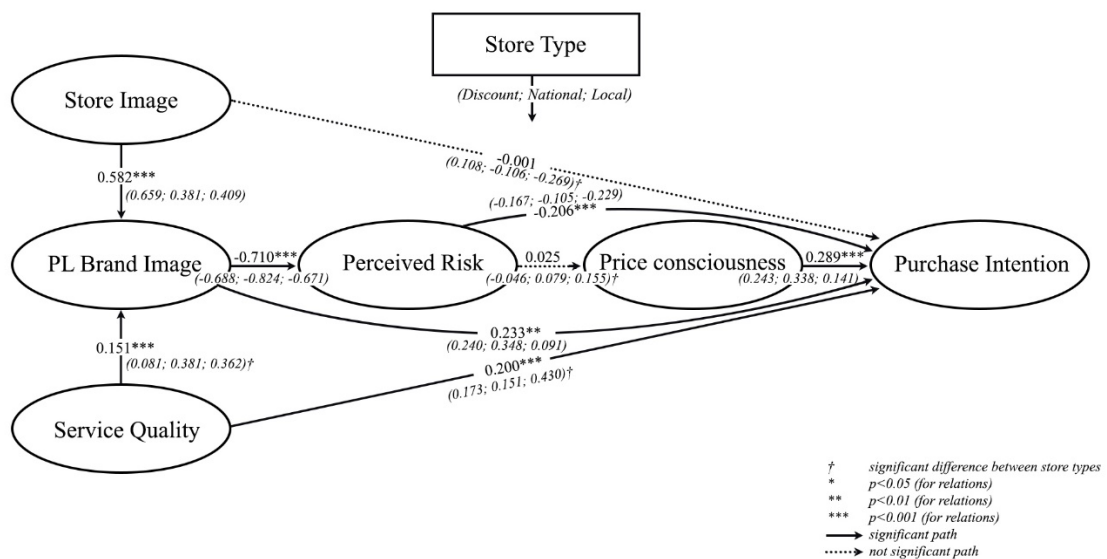
Finally, factor means were tested according to store type with ANOVA. The results showed significant differences between the means in all factors were found. Thus, hypotheses H11a, H11b, H1c, H1d, H11e, and H11f were accepted. Group means, standard deviations, and the p-values of ANOVA are given in Table 4.

Table 4. Group means, standard deviations, and ANOVA results

Factor	Group	N	Mean	SD	p-value
Store Image (SI)	Discount	1024	3.3896	0.6563	0.000
	National	312	3.9821	0.6009	
	Local	169	3.8024	0.6800	
	Total	1505	3.5588	0.6947	
Service Quality (SQ)	Discount	1024	3.2165	0.6788	0.000
	National	312	3.8291	0.6620	
	Local	169	3.5611	0.7684	
	Total	1505	3.3822	0.7305	
Private Label Brand Image (PLB)	Discount	1024	3.5549	0.6203	0.000
	National	312	3.8455	0.6454	
	Local	169	3.7692	0.6630	
	Total	1505	3.6392	0.6422	
Perceived Risk (PR)	Discount	1024	2.6884	0.7437	0.006
	National	312	2.5321	0.8091	
	Local	169	2.6226	0.7898	
	Total	1505	2.6486	0.7650	
Price Consciousness (PC)	Discount	1024	3.4229	0.8481	0.000
	National	312	3.1154	0.9114	
	Local	169	3.0814	0.8423	
	Total	1505	3.3208	0.8732	
Purchase Intention (IN)	Discount	1024	3.0566	0.9315	0.000
	National	312	3.2196	0.9947	
	Local	169	2.8491	1.0716	
	Total	1505	3.0671	0.9661	

Post-hoc tests were performed to determine which groups differed. The variances and group sizes for SI and IN are not equal. For this reason, the Games-Howell test was applied. The variances for PLB, SQ, PR, and PC are equal, but group sizes are not. For this reason, LSD has been tested. ANOVA and post-hoc test results also show statistically significant differences according to store type. With the results obtained, the store types are ranked as follows according to the means. National > Local > Discount for SI, SQ; National >= Local > Discount for PLB; National < Local <= Discount for PR; Discount > National >= Local for PC; and National > Discount > Local for IN. The results are given in Table 5.

Table 5. p-values of post hoc tests

Groups			SI	SQ	PLB	PR	PC	IN
Discount	–	National	0.000*	0.000*	0.000*	0.002*	0.000*	0.028*
Discount	–	Local	0.000*	0.000*	0.000*	0.299	0.000*	0.048*
National	–	Local	0.012*	0.000*	0.205	0.214	0.679	0.001*

Conclusion

This study, which is a replication and extension of Wu et al (2011), examines the direct effects of store image and service quality on PL brand image and purchase intention for PLs. Moreover, it also investigates the mediated indirect effects of perceived risk and price consciousness. Replication studies are important to generalize initial findings to other populations and ensure external validity (Campbell and Stanley, 1979). The fact that differences from the previous study were obtained in this replication is essential in contributing to the literature. This difference may be related to the time, the way statistical techniques are applied, or the geography in which the study is applied. In addition, the replicated study was conducted in drug-store customers, whereas this study was conducted in grocery customers. Thus, it may indicate that similar replication studies should be done to obtain generalizable empirical results. More broadly this study supports the need for replication research, marketing academia cannot consider findings from one study to be 'the last word' on a topic.

Another critical theoretical contribution of this research is the addition of the store type to the research model. The inclusion of store type, i.e. discount, national, and local grocery stores induces significant changes in the research model. The effect of store image on purchase intention is positive and not significant in discount and national stores. In contrast, it is negative and significant in local stores. The effect of service quality on PL brand image is higher in national grocery stores than discounts. There are also significant differences in the relationship between service quality and purchase intention. Moreover, while the relationship of perceived risk with price consciousness is negative for discount store customers, it is positive for national and local grocery customers. Therefore, no statistically significant results were obtained in all three relationships.

The results of this research provide some important implications for marketing managers in consumer goods markets. The positive effect of store image and service quality on PL brand image is valid for both the general research model and the moderator added model. Marketing professionals in the retail grocery industry can improve their service quality and store image. Thus, they can contribute to an immediate increase in PL brand images and an indirect increase in customers' intention to purchase PL. Moreover, the brand's PL products' perceived risk will also be reduced. The lower the perceived risk, the higher the intention to purchase PL. The positive and significant relationship between price

consciousness and purchase intention shows that competitive prices for PL products can be beneficial for businesses.

However, it should be noted that the factors, and the relationships between the factors, vary by store type. For example, there is no statistically significant relationship between price consciousness and purchase intention in local and wholesale stores. Another example is that the effect of service quality on the intention to purchase PL products differs between local and national stores. For this reason, the strategies to be implemented should take customers into consideration.

As in every scientific study, this study also has some limitations. First of all, since structural equation models do not include a controlled manipulation, their ability to make causal inferences is limited. However, when covariation, sequence, nonspurious covariation, and theoretical support are reflected in the model, dependence relationships can be addressed (Hair et al., 2014). That is, the results of a SEM analysis or other statistical technique cannot generally be taken as evidence for causality in non-experimental designs (Kline, 2011). This study, like the majority of SEM-based studies in marketing is based on cross-sectional data from which it is not possible to derive causal relationships. Therefore, the use of words such as 'effect' in reality is describing a cross-sectional correlation. Another situation is that even though statistical tests for common methods variance have been performed and there seems to be no problem, procedurally some precautions can be taken at the design stage of the research (see Podsakoff et al. 2003). For example, a marker variable could have been added to the survey (Rönkkö and Ylitalo, 2011).

The study was conducted in Turkey. It could be possible that different results might arise in different geographies, and therefore, its generalizability is limited. One of the study limitations is the formation of linguistic differences while translating the research questions into Turkish. In addition, some survey items in this replicated study were modified from the original due to sectoral differences. Nevertheless, the study covers grocery customers in general. Although single sector is considered, many product groups are included in the scope of the study. For this reason, it is limited in terms of specific information about a particular product group. Future studies can be done by focusing on product groups. It should also be considered that consumers' previous experiences and characteristics may influence all latent variables as well as PL purchase intention. Therefore, future studies of this type should ask about prior purchasing, not only assess attitudes and purchase intention.

This study provides insight into the factors that influence purchase intention for PL products and the effects of store types. Re-examination of the replicated model by other researchers may provide generalizable empirical findings. It will be possible to examine the effects of other variables using variations of the model used here. Changes in consumers' behaviour over time can be observed through longitudinal studies. Qualitative research and even field observations can be helpful to gain additional insights about private labels.

References

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. https://doi.org/10.1016/j.jretai.2004.10.008

Babin, B.J., Griffin, M., and Hair, J.F. (2016), "Heresies and sacred cows in scholarly marketing publication", *Journal of business research*, Vol. 68 No. 8, pp. 3133-3138. https://doi.org/10.1016/j.jbusres.2015.12.001

Baltas, G. (1997), "Determinants of store brand choice: a behavioral analysis", *Journal of product & brand management,* Vol. 6 No. 5, pp.315-324. https://doi.org/10.1108/10610429710179480

Baltas, G., and Argouslidis, P. C. (2007), "Consumer characteristics and demand for store brands", *International journal of retail & distribution management,* Vol. 35 No. 5, pp.328-341. https://doi.org/10.1108/09590550710743708

Batra, R., and Sinha, I. (2000), "Consumer-level factors moderating the success of private label brands", *Journal of retailing*, Vol. 76 No.2, pp.175-191. https://doi.org/10.1016/S0022-4359(00)00027-0

Bauer, R.A. (1960), "Consumer behavior as risk taking", Cox, D.F. (ed.), *Risk Taking and Information Handling in Consumer Behavior*, Harvard Business Press, pp.23-33.

Beneke, J., Greene, A., Lok, I., and Mallett, K. (2012), "The influence of perceived risk on purchase intent–the case of premium grocery private label brands in South Africa", *Journal of product & brand management,* Vol. 21 No. 1, pp.4-14. https://doi.org/10.1108/10610421211203060

Block, J., and Kuckertz, A. (2018), "Seven principles of effective replication studies: strengthening the evidence base of management research", *Management Review Quarterly,* Vol. 68, pp.355-359. https://doi.org/10.1007/s11301-018-0149-3

Bloemer, J., and De Ruyter, K. (1998), "On the relationship between store image, store satisfaction and store loyalty", *European Journal of marketing,* Vol. 32 No. 5/6, pp.499-513. https://doi.org/10.1108/03090569810216118

Bodur, H. O., Tofighi, M., and Grohmann, B. (2016), "When should private label brands endorse ethical attributes?", *Journal of retailing*, Vol. 92 No. 2, pp.204-217. https://doi.org/10.1016/j.jretai.2015.11.001

Boyle, P. F., Kim, H., and Lathrop, E. S. (2018), "The relationship between price and quality in durable product categories with private label brands", *Journal of product & brand management,* Vol. 27 No. 6, pp.647-660. https://doi.org/10.1108/JPBM-09-2017-1590

Brady, M. K., Cronin Jr, J. J., and Brand, R. R. (2002), "Performance-only measurement of service quality: a replication and extension", *Journal of business research*, Vol. 55 No. 1, pp.17-31. https://doi.org/10.1016/S0148-2963(00)00171-5

Burman, L. E., Reed, W. R., and Alm, J. (2010), "A call for replication studies", *Public Finance Review,* Vol. 38 No. 6, pp.787-793. https://doi.org/10.1177/1091142110385210

Campbell, D. T., and Stanley, J. C. (2015), *Experimental and quasi-experimental designs for research*, USA: Houghton Mifflin Company.

Carrillat, F. A., Jaramillo, F., and Mulki, J. P. (2009), "Examining the impact of service quality: a meta-analysis of empirical evidence", *Journal of marketing theory and practice*, Vol. 17 No.2, pp.95-110. https://doi.org/10.2753/MTP1069-6679170201

Chakrabarty, S., Whitten, D., and Green, K. (2008), "Understanding service quality and relationship quality in IS outsourcing: Client orientation & promotion, project management effectiveness, and the task-technology-structure fit", *Journal of computer information systems*, Vol. 48 No. 2, pp.1-15. https://doi.org/10.1080/08874417.2008.11646004

Chen, J., Narasimhan, O., John, G., and Dhar, T. (2010), "An empirical investigation of private label supply by national label producers", *Marketing science*, Vol. 29 No. 4, pp. 738-755. https://doi.org/10.1287/mksc.1090.0554

Collins-Dodd, C., and Lindley, T. (2003), "Store brands and retail differentiation: the influence of store image and store brand attitude on store own brand perceptions", *Journal of retailing and consumer services*, Vol. 10 No. 6, pp.345-352. https://doi.org/10.1016/S0969-6989(02)00054-1

Dawes, J., and Nenycz-Thiel, M. (2013), "Analyzing the intensity of private label competition across retailers", *Journal of business research*, Vol. 66 No. 1, pp.60-66. https://doi.org/10.1016/j.jbusres.2011.07.023

Diallo, M. F. (2012), "Effects of store image and store brand price-image on store brand purchase intention: Application to an emerging market", *Journal of retailing and consumer services*, Vol. 19 No. 3, pp.360-367. https://doi.org/10.1016/j.jretconser.2012.03.010

Diallo, M. F., and Seck, A. M. (2018), "How store service quality affects attitude toward store brands in emerging countries: Effects of brand cues and the cultural context", *Journal of business research,* Vol. 86, pp.311-320. https://doi.org/10.1016/j.jbusres.2017.08.017

Easley, R. W., Madden, C. S., and Dunn, M. G. (2000), "Conducting marketing science: The role of replication in the research process", *Journal of business research,* Vol. 48 No. 1, pp.83-92. https://doi.org/10.1016/S0148-2963(98)00079-4

Fornell, C., and Larcker, D. F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of marketing research*, Vol. 18 No. 1, pp.39-50. https://doi.org/10.1177/002224378101800104

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. https://doi.org/10.1016/S0022-4359(02)00071-4

Girard, T., Trapp, P., Pinar, M., Gulsoy, T., and Boyt, T. E. (2017), "Consumer-based brand equity of a private-label brand: Measuring and examining determinants", *Journal of marketing theory and practice*, Vol. 25 No. 1, pp.39-56. https://doi.org/10.1080/10696679.2016.1236662

Irfan, W., Siddiqui, D. A., and Ahmed, W. (2019), "Creating and retaining customers: perspective from Pakistani small and medium retail stores", *International journal of retail & distribution management,* Vol. 47 No. 4, pp.350-368. https://doi.org/10.1108/IJRDM-03-2018-0045

Glynn, M. S., and Chen, S. (2009), "Consumer-factors moderating private label brand success: further empirical results", *International journal of retail & distribution management,* Vol. 37 No. 11, pp.896-914. https://doi.org/10.1108/09590550910999343

Gülsaç, T. (2018), "2018 yılı hızlı tüketim ürünleri pazarı ve private label trendleri" paper presented at the 4. Private Label Zirvesi, October 24, İstanbul. Available at: https://plturkey.org/2018-yili-hizli-tuketim-urunleri-ve-private-label-trendleri/ (accessed: 15 December 2021).

Hair, J. F. Jr., Black, W. C., Babin, B. J., and Anderson, R. E. (2014). *Multivariate data analysis*, 7th ed., Pearson.

Houston, M. J., and Nevin, J. R. (1981), "Retail shopping area image: structure and congruency between downtown areas and shopping centers", *Advances in consumer research,* Vol. 8 No.1, pp.677-681.

Hyman, L., Lamb, J., and Bulmer, M. (2006), "The use of pre-existing survey questions: Implications for data quality", in *Proceedings of the European Conference on Quality in Survey Statistics*. Wales, UK: Cardiff, pp.1-8.

Kakkos, N., Trivellas, P., and Sdrolias, L. (2015), "Identifying drivers of purchase intention for private label brands. Preliminary evidence from Greek consumers", *Procedia-Social and Behavioral Sciences*, Vol. 175, pp.522-528. https://doi.org/10.1016/j.sbspro.2015.01.1232

Kaswengi, J., Diallo, M. B., Akrout, H., and Valette-Florence, P. (2020), "Choosing high-equity cosmetic brands in bad macroeconomic conditions: evidence from panel data", *International journal of retail & distribution management*, Vol. 48 No.4, pp.305-325. https://doi.org/10.1108/IJRDM-01-2019-0003

Keller, K. L. (1993), "Conceptualizing, measuring, and managing customer-based brand equity", *Journal of marketing*, Vol. 57 No. 1, pp.1-22. https://doi.org/10.1177/002224299305700101

Khare, A., Sarkar, S., and Patel, S. S. (2019), "Influence of culture, price perception and mall promotions on Indian consumers' commitment towards malls", *International journal of retail & distribution management*, Vol. 47 No.10, pp.1093-1124. https://doi.org/10.1108/IJRDM-06-2017-0134

Kim, J-H. (2019), "Imperative challenge for luxury brands Generation Y consumers' perceptions of luxury fashion brands' e-commerce sites", *International journal of retail & distribution management*, Vol. 47 No.2, pp.220-244. https://doi.org/10.1108/IJRDM-06-2017-0128

Kim, Y-K., Ha, S., and Park, S. H. (2019), "Competitive analyses for men's clothing retailers: segmentation and positioning", *International journal of retail & distribution management*, Vol. 47 No.12, pp.1266-1282. https://doi.org/10.1108/IJRDM-08-2018-0172

Kim, S., Lee, S., Lee, J. H., and Taylor, C. R. (2020), "Can premium private labels compete with luxury brands: the impact of advertising on perceived luxuriousness", *International journal of advertising*, Vol. 39 No. 6, pp.761-782. https://doi.org/10.1080/02650487.2018.1535222

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Konuk, F. A. (2018), "The role of store image, perceived quality, trust and perceived value in predicting consumers' purchase intentions towards organic private label food", *Journal of retailing and consumer services*, Vol. 43, pp.304-310. https://doi.org/10.1016/j.jretconser.2018.04.011

Konuk, F. A. (2020), "Trust transfer from manufacturer to private label brand: The moderating role of grocery store format", *Journal of retailing and consumer services*, Vol. 54, 101955. https://doi.org/10.1016/j.jretconser.2019.101955

Konuk, F. A. (2021), "Trust transfer, price fairness and brand loyalty: the moderating influence of private label product type", *International journal of retail & distribution management*, Vol. 50 No.5, pp.658-674. https://doi.org/10.1108/IJRDM-03-2021-0138

Lacoeuilhe, J., Louis, D., Lombart, C., & Labbé-Pinlon, B. (2021), "The impacts of comparative ads used by retailers to compare their store brands with national brands", *International journal of retail & distribution management*, Vol. 49 No. 1, 2021, pp.1-22. https://doi.org/10.1108/IJRDM-11-2019-0364

Lam, L. W. (2012), "Impact of competitiveness on salespeople's commitment and performance", *Journal of business research*, Vol. 65 No. 9, pp.1328-1334. https://doi.org/10.1016/j.jbusres.2011.10.026

Larson, R. B. (2018), "Profiling prospective private-label buyers", *The international review of retail, distribution and consumer research,* Vol. 28 No. 5, pp.516-530. https://doi.org/10.1080/09593969.2018.1525757

Lee, D., and Hyman, M. R. (2008), "Hedonic/functional congruity between stores and private label brands", *Journal of marketing theory and practice*, Vol. 16 No. 3, pp.219-232. https://doi.org/10.2753/MTP1069-6679160303

Lessassy, L. (2019), "Replacing a delisted brand with premium and standard private labels: The role of brand preference and shopping trip", *international journal of retail & distribution management*, Vol. 47 No. 10, 2019, pp.1057-1073. https://doi.org/10.1108/IJRDM-01-2018-0021

Lichtenstein, D. R., Ridgway, N. M., and Netemeyer, R. G. (1993), "Price perceptions and consumer shopping behavior: a field study", *Journal of marketing research*, Vol. 30 No. 2, pp.234-245. https://doi.org/10.1177/002224379303000208

Liljander, V., Polsa, P., and Van Riel, A. (2009), "Modelling consumer responses to an apparel store brand: Store image as a risk reducer", *Journal of retailing and consumer Services*, Vol. 16 No. 4, pp.281-290. https://doi.org/10.1016/j.jretconser.2009.02.005

Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., and Abdullah, S. (2016), "Factors influencing online shopping behavior: the mediating role of purchase intention", *Procedia economics and finance*, Vol. 35, pp.401-410. https://doi.org/10.1016/S2212-5671(16)00050-2

Lin, H. H., Li, H. T., Wang, Y. S., Tseng, T. H., Kao, Y. L., and Wu, M. Y. (2017), "Predicting customer lifetime value for hypermarket private label products", *Journal of business economics and management*, Vol. 18 No. 4, pp.619-635. https://doi.org/10.3846/16111699.2017.1308879

Ling, K. C., Chai, L. T., and Piew, T. H. (2010), "The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention", *International business research*, Vol. 3 No. 3, pp.63-76. https://doi.org/10.5539/ibr.v3n3p63

Loebnitz, N., Zielke, S., and Grunert, K. G. (2020), "Consumers' brand decision: a matter of social risk", *International journal of retail & distribution management*, Vol. 48 No. 6, 2020, pp.575-589. https://doi.org/10.1108/IJRDM-02-2019-0062

Loy, J. P., Ceynowa, C., and Kuhn, L. (2020), "Price recall: Brand and store type differences", *Journal of retailing and consumer services*, Vol. 53, 101990. https://doi.org/10.1016/j.jretconser.2019.101990

Manikandan, M. K. M. (2020), "Store brand and perceived risk on private label brand attitude", *Journal of Indian business research,* Vol. 12 No. 1, pp.133-150. https://doi.org/10.1108/JIBR-09-2019-0280

Martenson, R. (2007), "Corporate brand image, satisfaction and store loyalty: A study of the store as a brand, store brands and manufacturer brands", *International journal of retail & distribution management,* Vol. 35 No. 7, pp.544-555. https://doi.org/10.1108/09590550710755921

Mazumder, S., and Hasan, A. B. M. R. (2014), "Measuring service quality and customer satisfaction of the hotels in Bangladesh: a study on national and international hotel guest", *Journal of tourism and hospitality management*, Vol. 2 No. 1, pp.95-111.

Mazursky, D., and Jacoby, J. (1986), "Exploring the development of store images", *Journal of retailing*, Vol. 62 No. 2, pp.145-165.

Miquel, M. J., Caplliure, E. M., Pérez, C., and Bigné, E. (2017), "Buying private label in durables: Gender and other psychological variables", *Journal of retailing and consumer services*, Vol. 34, pp.349-357. https://doi.org/10.1016/j.jretconser.2016.07.013

Mishra, S., Malhotra, G., and Saxena, G. (2020), "In-store marketing of private labels: applying cue utilisation theory", *International journal of retail & distribution* management, Vol. 49 No. 1, pp.145-163. https://doi.org/10.1108/IJRDM-04-2020-0152

Mostafa, R. H., and Elseidi, R. I. (2018), "Factors affecting consumers' willingness to buy private label brands (PLBs): Applied study on hypermarkets", *Spanish journal of marketing-ESIC,* Vol. 22 No. 3, pp.341-361. https://doi.org/10.1108/SJME-07-2018-0034

Mukherji, J. (2017), "Consumer confidence and private label usage: exploring the role of quality and price consciousness", *Journal of competitiveness studies*, Vol. 25 No. 3/4, pp.188-200.

Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of marketing*, Vol. 49 No. 4, pp.41-50. https://doi.org/10.1177/002224298504900403

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of applied psychology*, Vol. 88 No. 5, pp. 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Richardson, P. S., Dick, A. S., and Jain, A. K. (1994), "Extrinsic and intrinsic cue effects on perceptions of store brand quality", *Journal of marketing*, Vol. 58 No. 4, pp.28-36. https://doi.org/10.1177/002224299405800403

Rönkkö, M. and Ylitalo, J. (2011), "PLS marker variable approach to diagnosing and controlling for method variance", 32nd International Conference on Information System (ICIS), Shanghai, Proceedings Paper No. 8 https://aisel.aisnet.org/icis2011/proceedings/researchmethods/8/

Rubio, N., Villaseñor, N., and Yagüe, M. (2020), "The role of private label tiers and private label naming strategies in the relationship between private label brand equity and store loyalty", *Journal of product & brand management,* Vol. 29 No. 1, pp.124-138. https://doi.org/10.1108/JPBM-09-2018-2017

Schnittka, O. (2015), "Are they always promising? An empirical analysis of moderators influencing consumer preferences for economy and premium private labels", *Journal of retailing and consumer services*, Vol. 24, pp. 94-99. https://doi.org/10.1016/j.jretconser.2015.02.006

Sethuraman, R., and Gielens, K. (2014), "Determinants of store brand share", *Journal of retailing*, Vol. 90 No. 2, pp.141-153. https://doi.org/10.1016/j.jretai.2014.04.002

Sudhir, K., and Talukdar, D. (2004), "Does store brand patronage improve store patronage?", *Review of industrial organization,* Vol. 24 No. 2, pp.143-160. https://doi.org/10.1023/B:REIO.0000033353.52208.ba

Thanasuta, K., and Chiaravutthi, Y. (2018), "Private-label branding and willingness to pay: evidence from an auction experiment", *The International Review of Retail, Distribution and Consumer Research,* Vol. 28 No. 3, pp. 320-338. https://doi.org/10.1080/09593969.2018.1433704

Vahie, A., and Paswan, A. (2006), "Private label brand image: its relationship with store image and national brand", *International Journal of retail & distribution management,* Vol. 34 No. 1, pp.67-84. https://doi.org/10.1108/09590550610642828

Valaskova, K., Kliestikova, J., and Krizanova, A. (2018), "Consumer perception of private label products: An empirical research", *Journal of competitiveness*, Vol. 10 No. 3, pp.149-163. https://doi.org/10.7441/joc.2018.03.10

Wu, P. C., Yeh, G. Y. Y., and Hsiao, C. R. (2011), "The effect of store image and service quality on brand image and purchase intention for private label brands", *Australasian marketing journal (AMJ)*, Vol. 19 No. 1, pp. 30-39. https://doi.org/10.1016/j.ausmj.2010.11.001

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Data

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