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Research paper

Loyalty in retailing: multidimensional approach to customer perceived value

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Structured abstract

Purpose: To deepen, in grocery retail context, the roles of consumer perceived value and consumer satisfaction, as antecedents' dimensions of customer loyalty intentions.

Design/Methodology/approach: Also employing a short version (12-items) of the original 19-item PERVAL scale of Sweeney & Soutar (2001), a structural equation modeling approach was applied to investigate statistical properties of the indirect influence on loyalty of a reflective second order customer perceived value model. The performance of three alternative estimation methods was compared through bootstrapping techniques.

Findings: Results provided i) support for the use of the short form of the PERVAL scale in measuring consumer perceived value; ii) the influence of the four highly correlated independent latent predictors on satisfaction was well summarized by a higher-order reflective specification of consumer perceived value; iii) emotional and functional dimensions were determinants for the relationship with the retailer; iv) parameter's bias with the three methods of estimation was only significant for bootstrap small sample sizes.

Research limitations:/implications: Future research is needed to explore the use of the short form of the PERVAL scale in more homogeneous groups of consumers.

Originality/value: Firstly, to indirectly explain customer loyalty mediated by customer satisfaction it was adopted a recent short form of PERVAL scale and a second order reflective conceptualization of value. Secondly, three alternative estimation methods were used and compared through bootstrapping and simulation procedures.

Keywords: Customer loyalty, customer satisfaction, customer perceived value, short version of PERVAL scale.

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1. Introduction

Retailing sector plays an important role in the service industry. In an increasingly competitive context, marketing research has grown in the last decade, being crucial for retailers as they aim to maintain their market share and position. Since the origin on the United States in the 1980s of the concept of customer relationship management (CRM), marketing research has emerged as a marketing powerful tool. For example, Kotler & Keller (2006, p.152), defined customer relationship management as the "*process of managing detailed information about individual customers and carefully managing all customer "touch points" to maximize customer loyalty"*. Because of this fact, the retail sector has been experiencing an increase in its sales and profits. Indeed, business strategies that aim to achieve higher levels of loyalty, through strategies of managing the relationship with the customer (Seeman & O'Hara, 2006) must be deeper investigated. Customer loyalty towards retailers has been widely examined and discussed in marketing literature as it represents a vital support for enduring business.

Researchers suggest that store loyalty is a key variable in explaining customer retention (Pritchard & Howard, 1997), which may result in repeat purchase behaviour and in a general level of attachment (Bodet, 2008; Dick & Basu, 1994). In this sense, consistent purchases over time, would assure growth and performance of the store (Lee & Cunningham, 2001; Reichheld, 1994). In an increasingly competitive global business context, the focus on customer favourable attitudes towards a product and its repeat purchases, dominates research in marketing strategies of the retailing sector (Srinivasan & Kishore, 2002). Indeed, and from a retailing perspective, a loyal customer contributes to positive and cascade effects on store results: profitability of the company (Heskett & Schlesinger, 1997), less communication efforts from the company and lower costs than attracting a new customer (Heskett & Schlesinger 1997).

Now the focus of attention of loyalty programs worldwide is to determine the drivers of customer loyalty, as it is important for retailers to understand customers' needs – the idea behind those programs is associated with new strategies able to increase customers' levels of satisfaction later translated into loyalty and retention. Recently, the explanation of how long-term relationships between firms and their customers are formed, has been conducted under relationship marketing studies, where understanding the role of antecedents of customer loyalty, emerges as the main issue to retain and improve new clients.

So, since the recognized positive effect of establishing long term and stable relationships with customers, the improvement of customer loyalty becomes a central objective for retailers. Among the antecedents of loyalty, customer satisfaction has been considered one of the main concepts of research in marketing (Fornell, 1992; Andaleeb, 1996; Oliver, 1999). Therefore, the recognized positive influence of satisfaction on purchase intentions and customer retention (Brady, Cronin & Brand, 2002) explains this protagonist and interest for research. Another antecedent of loyalty, consumer perceived value (CPV) dimension, associated to the *"consumer's overall assessment of the utility of a product or service based on perceptions of what is received and what is given"* (Zeithaml, 1988, p.14), has been widely recognized as an imperative strategy for producers and retailers (Sweener & Soutar, 2001) and as an important antecedent of customer satisfaction and loyalty (Cronin, Brady & Hult, 2000). For example, for Tam (2004), the CPV dimension is more important than satisfaction to explain the purchase decision-making process and, in recent years, the examination, through conceptual models of consumers' perceptions about the value they attribute to a service,

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relationship or product, has become a popular topic in existing literature about customer behaviour. The unidimensional conceptualization of the construct, adopted during an initial phase of research (Bolton & Drew, 1991; Lapierre, 2000; Sweeney, Soutar & Johnson, 1999), was only associated to cognitive and economic aspects of the value. However, the identification of additional hedonics and aesthetics dimensions in posteriors phases of development of the concept, and the possibility of overcoming the main limitation of the traditional approach, or the excessive concentration of economic aspects in only one dimension, had promoted the interest for the research of the multidimensionality of the concept (Sheth, Newman & Gross, 1991) at different hierarchical levels of conceptualization: a) reflective first-order CPV structures (Sanchez-Fernandez & Iniesta-Bonillo, 2007; Pura, 2005; Sweeney & Soutar, 2001; Wang, Lo, Chi & Yang, 2004; b)) reflective higher-order CPV dimensions (Lapierre, 2000; Mathwick, Malhotra & Rigdon, 2001; Liu, Leach & Bernhardt, 2005; Sanchez-Fernandez & Iniesta-Bonillo, 2009) and, more recently, c) formative higher-order CPV conceptualizations (Lin, Chien-Hsin, Sher & Shih, 2005; Sanchez & Iniesta-Bonillo, 2007; Ruiz, Gremeler, Washburn & Carri, 2008; Whittaker, Ledden & Kalafatis, 2007). Empirical findings, supported by Sweeney & Soutar (2001), when examining consumers' information about perceptions in consumption-related context, identified a tetra-factorial first-order structure of CPV: price or monetary value, emotional value, quality or functional value and social value. The authors named this value's structure PERVAL scale. This scale, comprising 19 items, has been widely adopted since the 1990s: for example, in the online retailing context (Yang & Peterson, 2004; Cheng, Wang, Lin & Vivek, 2009), restaurant service industry (Tam, 2004), mobile services (Pura, 2005), tourism development (Cronin, Brady & Hult, 2000; Parasuraman & Grewal, 2000; Woodruff, 1997) and retailing services (Sirdeshmukh, Sinh & Sabol 2002). Following Walsh, Shiu & Hassan (2014), in this paper it is adopted a shorter version of PERVAL scale (12-items) and a second-order configuration of CPV dimension (Sanchez-Fernandez & Iniesta-Bonillo, 2009).

The main purposes in this study are: firstly, to validate, in the Portuguese consumer context, the use of a short version of PERVAL measurement's instrument, comprising consumer perceptions of the value of the relationship with the retailer, through a first-order confirmatory factor analysis (CFA) measurement model, with the analysis of psychometric properties of the instrument (Hair, Black, Babin & Anderson, 2010) and construct related validity (factorial, convergent and discriminant validity). As the first-order dimensions revealed moderate to strong correlation and exists theoretical reasons to support a reflective higher-order factorial design, the second propose is to test a second-order configuration of the initial CFA model. The third propose is to assess the inclusion of two additional dimensions, customer satisfaction and customer loyalty, respectively, through structural equation modeling approach and, as a final propose, to compare and assess estimation results obtained from alternative estimation methods. So, a hypothesized general loyalty model is proposed, evolving the following research questions: Does the tetra-factorial conceptualization of CPV reveal an adequate factorial fit to the data, convergent and discriminant related validity? ii) Is there a significant amount of correlation between social, price, emotional and quality constructs, which may justify a second-order factorial structure? iii) Does the hierarchical structure of CPV significantly account for the observed correlations between the tetra-factorial first-order constructs? iv) Is there a significant relationship between the CPV second-order dimension and customer satisfaction with the grocery? v) Is there a significant relationship between customer satisfaction and customer loyalty? vi) Are there significant differences between estimation results obtained by using alternative estimation methods for the final structural model?

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The objective of this study is to contribute to the development of a conceptual loyalty model that includes both direct and indirect determinants of consumer's loyalty towards grocery shopping. Specifically, the present paper aims to explore the behavior of a second-order factorial CPV model with a short version of PERVAL scale, when used to model customer loyalty to the grocery, throughout satisfaction dimension. With this goal and although the widespread use of maximum likelihood (ML) estimation method in presence of ordinal observed variables, the appropriate method must fit the CFA model to polychoric correlations instead of the former. In this sense, three alternative estimation methods (ML, unweighted least squares (ULS), and diagonally least squares (DWLS)) had been used to fit the final structural loyalty model.

The article is structured in six sections. Section 2 presents the conceptual model and research hypotheses. Methodology used to carry out the investigation is exposed in section 3. Results are discussed in section 4, section 5 provides the discussion and conclusions and finally, in section 6, theoretical and practical implications are presented.

2. Conceptual Model and Research Hypotheses

According to several researchers (Oliver, 1996; Tam, 2004; Yang & Peterson, 2004) the levels of satisfaction and, consequently, the repeated choice of the product, service or relationship, are influenced by the customer's perception about the value of the product, service or relationship. Although the traditional strategy of product's differentiation to retain customers, nowadays it is consensual in literature the importance of the examination of alternative strategies to promote loyalty. The direct influence of CPV on customer satisfaction, and the effect of satisfaction on loyalty and customer retention have been studied worldwide (Carpenter, 2008; Ciavolino & Dahlgaard, 2007). It is in this line of though, that grocery stores must look for building long term and stable relationships with their customers, through the research of consumer's expectations and the links between them and satisfaction and loyalty. The proposed conceptual model evolves four PERVAL first-order dimensions, one CPV second-order construct and, finally, satisfaction and loyalty dimensions included as two outcomes' constructs.

Based on literature regarding the structure of customer's value, satisfaction and loyalty, the research model is depicted in Figure 1. This model suggests that perceived value of customer (CPV) is set as a hierarchical structure, hypothesized to have a direct influence on customer's level of satisfaction and, furthermore, to have an indirect influence on customer's loyalty intention.

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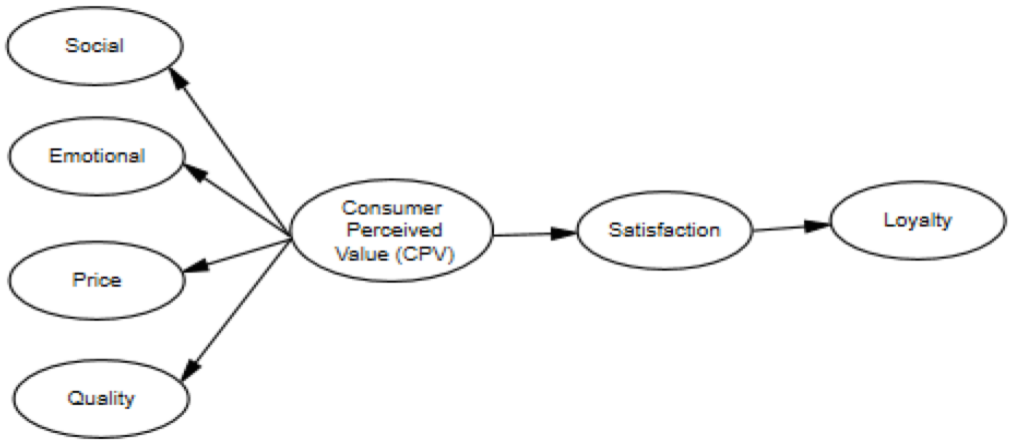
Figure 1. Conceptual model



Source: elaborated by the authors.

The objective of this study is to examine the antecedents' roles of CPV and customer satisfaction, on customer grocery retail loyalty. A higher-order CPV structure (Koufteros, Babbar & Kaighobadi, 2009) is hypothesized as accounting for all variance and covariance related to the four first-order constructs, associated to the consumer perceived value dimension. Figure 1 suggests that the tetra-dimensional pattern of PERVAL scale is composed by four significant constructs that are assumed to express perceptions associated to the abstract concept of CPV. Additionally, figure 1 also proposes a direct effect of CPV on customer satisfaction and a direct impact of satisfaction on customer's loyalty. In order to test all the relationships between latent variables proposed in this conceptual model, the structural equation modeling approach was selected to assess the quality of the overall fit of the proposed model to the data. Furthermore, it is adopted a higher-order modeling approach to represent an aggregate abstract construct of the consumers' perceptions of value about their relationship with the retailer. For the operationalization of this second-order dimension, four first-order latent constructs have been identified and specified.

2.1. Second Order Construct: Consumer Perceived Value (CPV)

In the context of marketing literature the consumer choice process is determined by a utilitarian value (Zeithaml, 1988; Babin, Darden & Griffin, 1994), associated to the functionality of the product for the consumer, a switching value (Burnham, Frels & Mahajan, 2003), associated to the technical effort to switch from a product to another, and by a hedonic value, which captures the emotional experience associated to the product (Sheth, Newman & Gross, 1991; Sweeney & Soutar, 2001). There is a consensus about the multidimensionality of the theoretical concept of value (Sánchez-Fernández & Iniesta-Bonillo, 2007), although different perspectives (Grewal, Monroe & Krishnan, 1998) for the operationalization of it. Sweeney & Soutar (2001) developed a consumer perceived value (PERVAL) scale with 19 items to identify four basic dimensions of value, which are, social, emotional, price and quality. A lot of studies have been conducted, using this scale or using adaptations of it (Grace & O'Cass, 2005; Turel, Serenko & Bontis, 2007; Roig, Garcia, Tena & Monzonis, 2006). Recently, some researchers argue for shortening PERVAL scale (Walsh, Shiu & Hassan, 2014). In this study we adopted the PERVAL framework, aimed to measure the value of the consumer's relationship with the grocery, but using the shorter version with 12 items,

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and a higher-order dimension of consumer's perceptions of value, or the factorial pattern underlying the first-order constructs.

2.2. First order constructs and the CPV Model

Sweeney & Soutar (2001) defined social value as "the utility derived from the product's ability to enhance social self-concept", emotional value is associated to the utility derived from feelings or affective states that a product generates (Sheth, Newman & Gross, 1991; Sweeney & Soutar, 2001), price value is associated to the aggregate utility of the product and it is derived from monetary benefit or superiority compared with alternatives (Sheth, Newman & Gross) and quality value is associated to technical benefits that consumers can obtain by using a product. Most examinations about the role of these perceptions of value on customer satisfaction, had confirmed positives' effects (Wang, Lo, Chi & Yang, 2004).

2.3. Customer Satisfaction

Although the difficulty to find a general definition for customer satisfaction, it is associated to a customer evaluation of products or services after purchase and so, it may be described as a consequence of post consumption (Olivier, 1996). Traditionally, two distinct approaches to the concept of satisfaction have been proposed: cognitive approach (Oliver, 1980, 1996; Bloemer, Ruyter & Peeters, 1998) and affective approach (Cadotte, Woodruff & Jenkins, 1987). While cognitive approach definition is supported by a comparison between expectations formed by the consumer with the results of his choice, the affective approach highlights the emotional nature of satisfaction in the consumption experience. More recently, a third approach appeared adopting both cognitive and affective proposes for the conceptualization of satisfaction (Addis & Holbrook, 2001; Ladhari, 2007). The linkage between customer satisfaction and loyalty has been extensively examined in various contexts of marketing relationship. The positive effect of high levels of satisfaction on customer loyalty has been examined. Satisfied customers tend to have a higher usage level of a service than those who are not satisfied (Bolton & Lemon, 1999; Ram & Jung, 1991).

2.4. Customer Loyalty

In a literature review, customer loyalty has been examined and described, through three main perspectives: attitudinal, behavior and composite (Kumar & Reinartz, 2006; Jones & Taylor, 2007; Bove, Pervan, Beatty & Shiu, 2009). Behavioral and attitudinal approaches to the loyalty concept are widely used to explain consumer behavior (Oliver, 1996). While the primer refers to a customer's actual behavior to repeat purchases of products or services, the attitudinal approach to the concept is associated to a state of mind (Dick & Basu, 1994). Under the composite approach, loyalty represents a combination of both perspectives, or customers' preference of a product, frequency of purchase, total amount of purchase, and propensity of switching brands (Yoo & Bai, 2013). Many authors have emphasised the significance of incorporating in a conceptual loyalty model, customer perceived value (Chang, Tung-Zong & Wildt, 1994) and customer's satisfaction (Bloemer, Ruyter & Peeters, 1998; Oliver, 1999; Zeithaml, Berry & Parasuraman, 1996) as predictors of consumers' behavioural intentions.

2.5. Research Hypotheses

In the context of the relationship of the costumer with the grocery, the following hypotheses were developed:

H1: Grocery retailer consumer's perceived value is defined as a second-order multidimensional construct comprising four first-order constructs: Quality (Q), Social

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(S), Price (P) and Emotional (E). So, CPV is likely to have a predictable and direct influence on each one of these lower dimensions.
H1a: CPV has a direct influence on Quality perceived value
H1b: CPV has a direct influence on Emotional perceived value
H1c: CPV has a direct influence on Social perceived value
H1d: CPV has a direct influence on Price perceived value
H2: Costumer satisfaction is positively influenced by the multidimensional construct associated to the grocery retailer costumer perceived value (CPV).
H3: Customer loyalty is positively influenced by customer satisfaction.

3. Methodology

3.1. Instrument, Measures and Data Collection
In order to examine the hypothesized paths included on the proposed conceptual loyalty global model, it was adopted a causal research design using a cross-sectional sample survey. Information on customer perceptions about different dimensions of the their relationship with the retailer was gathered through a structured questionnaire, applied to 595 customers of regions of Greater Lisbon. The questionnaire included questions about the participant's profile (age, labour status, gender and educational level) and 18 items (Table 1) from measurement scales adapted from previous studies.

Table 1. Constructs and items

Construct (2 nd order)	Co**nstructs** (1st order)	**Manifest Variable/item**
Customer Perceived Value (CPV)	Social (SO)	• Would help me help me to feel acceptable (p1) Would improve the way I am perceived (p2) • Would make a good impression on other people (p3)
	Price (PR)	• Would offer value for money (p5) • Would is reasonably priced (p6) • Is a good service for the price (p7)
	Emotional (EM)	• Would make me feel good (p8) • Would give me pleasure (p9) • I feel relaxed with this relationship (p10)
	Quality (QU)	• The service has an acceptable standard of quality (p12) • Would perform consistently (p13) • Is well made (p14)
	Satisfaction (SAT)	• This relationship is exactly what I expected • The relationship with this retailer has been satisfactory • Shopping at this store in a regular basis is worthwhile
	Loyalty (LOY)	• I will recommend to my friends and relationships shopping at this store

- I intend to continue this relationship
- I will continue this relationship

Although the PERVAL scale originally included a total of 19 items (Sweeney & Soutar, 2001), in this study, the PERVAL short scale of 12 items proposed and examined by Walsh, Shiu & Hassan (2014) is examined. So, a CPV model comprising four subscales, or four first-order constructs, social, price, emotional and quality, has been included in the global specification of the proposed loyalty model for grocery retail context. Items for measuring customer satisfaction with grocery's relationship were adapted from Mittal, Kumar & Tsiros (1999) and Spreng & Olshvsky (1993), and items for measuring customers' loyalty towards the retailer were adapted from Srinivasan & Kishore (2002). Respondents were asked to rate how much they agree with each item on the scale. All of the items had been modified for testing in a relationship customer-grocery context, and the responses to the questions used a six-point *Lykert*-type response scale ranging from 1 (strongly disagree) to 6 (strongly agree). The questionnaires were carried out between Jun and October 2013. The analysis of data was realized through structural equation modeling approach, using LISREL 8 software (Joreskorg & Sorbom, 2006) and R free software (R Core Team, 2014).

3.2. Methodological Approach and Estimation Methods

Analyses were carried out in two stages. In the first stage, it was assessed the CPV-four first-order construct's validity (overall model fit and construct validity). The psychometric properties of this factorial structure were evaluated within the present study, by conducting a confirmatory factorial analysis (CFA). The maximum likelihood estimation method was used on the Pearson correlation matrix to assess the measurement model. The objective of CFA is to obtain estimates for each parameter of the measurement model that minimize the discrepancy between a hypothesized covariance matrix implied by the model and the input matrix.

The classic chi-square is the only statistical procedure to test the significance of the difference between these two matrices. To overcome the limitations of the chi-square test procedure, a range of ancillary indices of global fit such as the goodness-of-fit index and adjusted goodness-of-fit-index (GFI; AGFI), the comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA). So, a model is regarded as acceptable if the normed fit index exceeds .90 (NFI) or .95; the goodness of fit index exceeds .90; the comparative fit index exceeds .93; RMSEA is less than .08, and, ideally less than .05. To assess validity of CPV model, convergent, discriminant and nomological validity were also examined. To assess items' convergence into the four first-order constructs and as proposed by Fornell & Larcker (1981), the factor's average variance extracted (AVE) and composite reliability (CR) were carried out adopting 0.5 for AVE and 0.7 for CR as the two threshold values for minimum level of convergent validity. With the same propose, the usual criteria of standardized factor loadings greater than 0.5, and ideally 0.7 or higher, was also adopted. To assess discriminant validity, AVE and square Pearson correlations were compared and, as also suggested by Fornell & Larcker (1981), the squared inter-construct correlations, greater than the AVE for each construct must be verified. Yet in the first stage, and regarding significant correlations between first-order constructs, four additional structural paths, or causal trajectories from the second-order CPV dimension to each of the first-order interrelated constructs (social, price, emotional and quality), were tested through multiple tests of statistical significance. In the second stage of analysis, satisfaction and loyalty dimensions were added to the 2nd order CPV model and, due to the presence of observed variables with ordinal properties, the behavior of two additional least squares estimation

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methods, diagonally weighted least squares (DWLS) and unweighted least squares (ULS), had been investigated, along with two kinds of matrices: Pearson correlation matrix and polychoric correlation matrix (Olsson, 1979).

In this paper we compared ML, DWLS[1] and ULS estimation results through the analysis of some statistical properties, such as level of relative bias and standard errors of bias, or efficiency of estimates, in bootstrapped samples with different sizes (N=50, N=100, N=595, N=1000). Each estimation method[2] is based on finding parameter estimates that minimize a discrepancy function, measuring the difference between the observed sample covariance matrix and the fitted (or predicted) covariance matrix. Finally, results for the global assessment of the model fit to data and evaluation of the loadings of each item on a construct, were compared through four indices that were employed to evaluate the fit of the final proposed model: Chi-square, CFI, GFI AGFI and RMSEA (Browne & Cudeck, 1993).

4. Results

4.1. Descriptive statistical analysis

A sample size, randomly selected in regions of Greater Lisbon, of 595 customers was considered sufficient for estimation purposes. Table 2 shows customers' characteristics on age, gender educational level and labor status:

Table 2. Consumer's characteristics

Characteristic	**Percent (%)**	**Characteristic**	**Percent (%)**
Gender		**Education level**	
Male	43.0	Advanced degree (master or Ph.D.)	17,2
Female	57.0	High school graduate	39,7
		12^{th} grade	25,4
		$10/11^{th}$ grade	6,4
		9^{th} grade	11,3
Age (percentiles)		**Labor status**	
P_{25}=28		Student	18.0
P_{50}=37		Unemployed	8.3
P_{75}=49		Retired	7.7
P_{90}=60		Employer	16.0
		Employee	27.0

The majority of respondents (57%) were females with ages ranging from 18 to 85 years old, while males accounted for 43%. With regard to education level, the largest proportion of respondents (39,7%) indicated they were high school graduates and 25,4% had 12-year college graduate, while advanced degree and 9-year college graduate accounted for 17,2% and 11,3% respectively. Labor status analysis of respondents revealed that 27% were employed, 18%, students, 16% employers, 8.3% unemployed and 7.7% retired. 10% of respondents were, at least, 60 years old and 50% of them were older than 37 years.

4.2. First-order dimension of CPV Model

The first-order factorial structure for CPV model was evaluated through CFA, using the maximum likelihood estimation method on the Pearson correlation matrix. All items were statistically significant to a 0.05 level, presenting, all of them, a standardized factor loading greater than 0.7 (Table 3), corresponding to an internal reliability value of, at least, 50%. So it may thus be stated that all variables are significantly related to the specific constructs. The average variance extracted (AVE) was greater than .50 [social (.80), price (.63), emotional (.51) and quality (.83)], construct reliability (CR)

was greater than .70 for all four first-order constructs [social (.90), price (.81), emotional (.74) and quality (.92)] and all of them had an AVE greater than the squared Pearson correlation between factors [($r^2_{social/emotional}$=0.2; $r^2_{social/quality}$=0.05 $r^2_{social/price}$=0.004, $r^2_{price/emotional}$=0.15 $r^2_{price/quality}$=0.14, $r^2_{quality/emotional}$=0.605). These results confirmed convergent and discriminant validity (Fornell and Larker, 1981) of the tetra-factorial structure. High reliability, or Cronbach's Alpha values greater than .70 [social (.92), price (.82), emotional (.75) and quality (.94)], was obtained for all four constructs. These findings further suggested that each item is uniquely related to the factor to which it was assigned. The goodness-of-fit indices produced through CFA also indicated that the measurement model, with four first-order factors of CPV dimension, showed an overall acceptable fit to the data [chi-square (48)=199.951 (p<0.001), CFI= 0.968,GFI=0.948,RMSEA=0.073, 90% CI=0.06, .084]. Since both the CFI and GFI were greater than 0.90, and the RMSR less than .10, results suggested that the first-order tetra-factorial structure of CPV model had a good adherence to the data. Overall significant correlations between first-order constructs ($r_{social/emotional}$=0.443; $r_{social/quality}$=0.231 $r_{social/price}$=0.07, $r_{price/emotional}$=0.39 $r_{price/quality}$=0.376, $r_{quality/emotional}$=0.778), justified the inclusion of a second-order factorial structure.

Table 3. Standardized factor loadings and psychometric properties for the short version (12 items) of the PERVAL Scale

Construct/item	Cronbach Alpha	Std. factor Loading*	R^2	AVE	CR
Social	0.92			0.80	0.90
p1		0.856(0.73)	0.733		
p2		0.952(0.83)	0.906		
p3		0.876(0.74)	0.768		
Price	0.82			0.63	0.81
P5		0.846(0.82)	0.716		
P6		0.911(0.90)	0.830		
P7		0.580(0.76)	0.337		
Emotional	0.75			0.51	0.74
P8		0.76 (0.74)	0.577		
P9		0.620(0.71)	0.383		
P10		0.750(0.76)	0.561		
Quality	0.94			0.83	0.92
P12		0.926(0.82)	0.857		
P13		0.953(0.70)	0.908		
P14		0.853(0.79)	0.727		

Notes: All paths were significant at p < 0.01 level. *Values in brackets represent the correspondent magnitude of factor loadings obtained by Sweeney and Soutar (2001) with the original PERVAL scale of 19 items.

4.3. Second-order Dimension of CPV Model

To access the structure of the proposed hierarchical specification for CPV, reflecting four lower-order dimensions, an application of second order confirmatory factor analysis (CFA) was conducted. The validity of the reflective second-order factorial structure was tested within the framework of structural equation modeling. Results revealed a well-fitting model to the sample data [Chi-square/df=4.34; CFI=0.964; RMSEA=0.076; 90% C.I. RMSEA: 0.06-0.08]. Besides model's evaluation through goodness-of-fit indices, it was also examined statistical significance and strength of the four causal paths evolved in CPV model specification. According to Chin (1998) standardized paths should be at least 0.20 and, ideally, above 0.30 in order to accept

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association between constructs. Two of the four first-order latent constructs designed to measure CPV, have high and significant standardized factor loadings on CPV: Emotional (0.99) and Quality (0.778).

4.4. Overall Loyalty Model

In the second stage of analysis, an hypothesized overall loyalty model was assessed through three estimation methods, maximum likelihood (ML), diagonally least squares (DWLS) and unweighted least squares (ULS) and two types of correlation matrices, Pearson (P) and polychoric (POLY). Table 4 exhibits global and local standardized estimation results for the global loyalty model:

Table 4. Standardized Estimation Results for Global Loyalty Model, Chi-squares and fit indices

	ML		**UWLS**	**DWLS**
Causal path	Pearson	Poly	Poly	Poly
CPV⇒Social	0.28	0.30	0.24	0.30
CPV⇒Price	0.44	0.50	0.53	0.53
CPV⇒Emotional	0.96	0.90	0.87	0.89
CPV⇒Quality	0.91	0.90	0.90	0.90
CPV⇒Satisfaction	0.76	0.80	0.82	0.81
Satisfaction⇒Loyalty	0.96	0.97	0.98	0.98
$\chi^2(129)$	642.32	444.58	377.44	431.8
RMSEA	0.082	0.064	0.057	0.063
CFI	0.97	0.98	0.98	0.98
GFI	0.89	0.98	0.98	0.98
RFI	0.96	0.97	0.97	0.97
AIC	17610.86	742.12	515.8	515.80

As indicated in Table 4, ML results (standardized factor loadings and fit indices) were obtained using both types of matrices, while ULS and DWLS estimation results were obtained only from the use of the appropriate polychoric correlation matrix. As it is also shown in Table 4, very small differences among the four estimation scenarios had been founded at the level of standardized factor loadings and fit indices. Taking in account the magnitude of the fit indices (GFI (0.89;0.98;0.98;0.98), CFI (0.97;0.98;0.98; 0.98) and RFI (0.96;0.97;0.97;0.97) very closed to unity and values for RMSEA (0.082;0.064;0.057;0.063), closed to zero), the resulting overall loyalty model is satisfactory for future analysis. Concerning the initial hypotheses, the statistical significance of estimated paths ($p<0.001$), allows to validate all the initial hypotheses developed in the context of the relationship of the costumer with the grocery: **H1**: CPV is likely to have a predictable and direct influence on each one of these lower dimensions; **H1a**: CPV has a direct influence on Quality perceived value; **H1b**: CPV has a direct influence on Emotional perceived value; **H1c**: CPV has a direct influence on Social perceived value; **H1d**: CPV has a direct influence on Price perceived value; **H2**:Costumer satisfaction is positively influenced by the multidimensional construct associated to the grocery retailer costumer perceived value (CPV); **H3:** Customer loyalty is positively influenced by customer satisfaction.

4.5. Simulation analysis

For the examination of the statistical properties of the parameters' estimates, when available under different sample sizes and estimation approaches, *bootstrap-resampling*

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procedure was used (Table 5). The objective was to compare statistical properties of these estimators under different sample sizes (N=50, N=100, N=595, N=1000), at the level of relative bias and standard errors of bias. Firstly, original sample data (N=595) was bootstrapped 1000 times for each of the four-replication sizes. In a second step, bias statistics (bias is defined to be the difference between original and bootstrapped samples structural factor loadings estimates), and standard deviation of bias, were generated for the bootstrapped estimators of structural factor loadings. In a third step, and for each level of sample size, results obtained with the three estimation methods, were compared conducting a one-way analysis of variance. Results for the examination if there existed significant differences on parameter accuracy (bias) between the three groups of parameter estimates obtained through ML, ULS and DWLS estimation procedures, revealed that mean bias was higher at the lowest repetition (N_1=50) and tended to decrease with increased repetitions regardless of estimation method conducted. Results of this study also indicated that ML, ULS and DWLS are comparable for large samples, with regard to parameter accuracy estimation, even in presence of ordinal data and when data do not meet the assumption of multivariate normality.

Table 5. Simulation Results and Estimators Accuracy (Relative bias)

	ML		ULS		DWLS	
	Pearson	*Poly*	*Pearson*	*Poly*	*Pearson*	*Poly*
			N=50			
CPV→Social	**0.055**	0.029	**0.058**	0.028	**0.0555**	0.0295
CPV→Price	**0.063**	**0.063**	**0.060**	**0.068**	**0.0635**	**0.0635**
CPV→Emotional	**0.096**	**0.084**	**0.127**	**0.126**	**0.0963**	**0.0841**
CPV→Quality	**0.143**	**0.167**	**0.221**	**0.131**	**0.1433**	**0.1672**
CPV→Satisfaction	0.0423	0.0455	**0.0531**	0.0456	0.0422	**0.0501**
Satisfaction→Loyalty	0.0372	0.0267	0.0300	0.0282	0.0371	0.0262
			N=100			
CPV→Social	0.0210	0.0242	0.0284	0.0196	0.0272	0.0207
CPV→Price	0.0236	0.0233	0.0219	0.0252	0.0291	0.0201
CPV→Emotion	0.0441	0.0443	0.0346	0.0342	0.0352	0.0402
CPV→Quality	**0.0768**	**0.0615**	**0.0715**	**0.0591**	**0.0651**	**0.0621**
CPV→Satisfaction	0.0212	0.0178	0.0193	0.0190	0.0174	0.0182
Satisfaction→Loyalty	0.0117	0.0161	0.0195	0.0190	0.0211	0.0183
			N=595			
CPV→Social	0.0038	0.0040	0.0052	0.0040	0.0048	0.0043
CPV→Price	0.0027	0.0031	0.0065	0.0033	0.0055	0.0036
CPV→Emotion	0.0081	0.0086	0.0071	0.0075	0.0072	0.0074
CPV→Quality	0.0132	0.0102	0.0062	0.0101	0.0097	0.0097
CPV→Satisfaction	0.0023	0.0030	0.0039	0.0031	0.003	0.0033
Satisfaction→Loyalty	0.0042	0.0035	0.0026	0.003	0.0037	0.0033
			N=1000			
CPV→Social	0.0021	0.0023	0.0032	0.0021	0.0028	0.0021
CPV→Price	0.0012	0.0023	0.0045	0.0021	0.0032	0.0026
CPV→Quality	0.0051	0.0046	0.0032	0.0033	0.0048	0.0035
CPV→Quality	0.0070	0.0075	0.0036	0.0069	0.0045	0.0061
CPV→Satisfaction	0.0014	0.002	0.0022	0.0017	0.0016	0.0018
Satisfaction→Loyalty	0.0023	0.002	0.0015	0.0021	0.0026	0.0021

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5. Discussion

A review of marketing literature into loyalty research context highlights the importance of identification of its antecedents for posterior analysis of the behavior of structural relationships between them. From a relationship-marketing perspective, perceived value and satisfaction has been pointed out as representing two fundamental aspects to be considered in loyalty research. This study deeper the understanding of the maintenance of long-term relationships in the grocery retail context, by proposing a customer loyalty model. So, it was firstly tested the reliability and the validity of a shorter version of the PERVAL scale and then conceptualized as a second order structure. In a second stage, it was assessed a hypothesized general conceptual loyalty model, considering two additional constructs, satisfaction and loyalty towards the retailer. Three estimation methods and two kinds of correlation matrices were used and their performance compared in the context of four different sample sizes, obtained through bootstrapping procedures. Results for this study revealed that, in the context of retailing, a tetra-factorial second-order conceptualization of CPV was an adequate specification to fit data. It was also detected a significant and direct relationship between the CPV second-order dimension and customer satisfaction toward the grocery and between customer satisfaction and customer loyalty. Findings of the first stage of the analysis revealed that results of the adjustment of the short version of the PERVAL scale to data were consistent with literature, revealing a good adherence to the data. As expected insignificant differences are detected in the magnitude of the factor loadings obtained by Sweeney & Soutar (2001) with the original PERVAL scale of 19 items and those results obtained with the PERVAL scale of 12 items (short version). The fit of a second order reflective structure of consumer perceived value to data was also satisfactory and compatible with previous studies (Sweeney & Soutar, 2001; Walsh, Shiu & Hassan 2014). The examine of the performance, of three alternative estimation approaches, in terms of the quality of parameter estimators, evaluated through statistical properties of precision and efficiency, in presence of ordinal data and two kind of matrices, revealed the importance of the sample size. Therefore, from the simulation study, it is inferred the asymptotic equivalence that emerged at the levels of sample sizes of 595 and 1000, despite the type of matrix or estimation method. Results also indicated that ML, ULS and DWLS are comparable for large samples, with regard to parameter accuracy estimation, even in presence of ordinal data and when data do not meet the assumption of multivariate normality.

This paper contributes to the current literature in three ways. First, and based on the recent study of Walsh, Shiu & Hassan (2014) it examines the behavior of a short version of PERVAL scale, when used in the context of grocery retailing. Second, it proposes a higher order consumer perceived value (CPV) dimension (Koufteros, Babbar & Kaighobadi, 2009) to account for all variance and covariance related to the first-order PERVAL factorial structure. Third, it extends previous empirical research examining the antecedent role of CPV on customer satisfaction and loyalty, adopting simulation statistical procedures. As the review of literature on customer value suggests, it's conceptual development is necessary (Sanchez-Fernadez & Iniesta-Bonillo, 2007) and, although t*he process of managing information about customers with the objective of maximize customer loyalty* (Kotler & Keller, 2006), has been widely examined in marketing research, more empirical studies are need.

Arising from the current study, research implications evolve: firstly, and assuming a business perspective in order to achieve long-term relationships between a customer and a retailer, it is crucial to deeper the knowledge of the latent dimensions that are

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subjacent to these interactions. In view of the complexity of costumer perceived value when applied to different marketing areas, it is also necessary to investigate the behaviour of higher order configurations of it.

6. Theoretical and Practical Implications

Certain limitations arise from this study: first, this research does not compare the behaviour of the second order reflective CPV specification with a formative one. Second, it is not accounted the sample heterogeneity and future research should explore the behaviour of this global loyalty model after a segmentation procedure of the original data, in order to obtain more accurate results from homogeneous groups of customers. Third, additional research should assess the direct effect of other conceptual foundations of first-order dimensions of customer perceived value on loyalty intentions. Finally, the generalization of results constitutes a limitation, and future development in other sample contexts is suggested in order to validate findings.
Given the growing interest of the multidimensional perspective of value for business in retailing context, more studies are needed, integrating new streams of research.

References

Addis, M., & Holbrook, M. B. (2001). On the conceptual link between mass customisation and experiential consumption: An explosion of subjectivity. *Journal of Consumer Behaviour, 1*(1), 50–66. doi:10.1002/(ISSN)1479-1838.

Andaleeb, S. S. (1996). An experimental investigation of satisfaction and commitment in marketing channels: The role of trust and dependence. *Journal of Retailing 72*(1): 77–93.

Babin, B.J., Darden W.R. & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, *20*(4), 644–657.

Bloemer, J., de Ruyter, K., & Peeters, P. (1998). Investigating drivers of bank loyalty: the complex relationship between image, service quality and satisfaction. *International Journal of Bank Marketing, 16*(7), 276-286.

Bodet, G. (2008). Customer satisfaction and loyalty in service: Two concepts, four constructs, several relationships. *Journal of Retailing and Customer Services, 15*, 156-162.

Bolton, R.N. & Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. *Journal of Consumer Research, 17*, 375–384.

Bolton, R.N. & Lemon, K. N. (1999). A dynamic model of customers' usage of services: Usage as an antecedent and consequence of satisfaction. *Journal of Marketing Research, 36* (2), 171-186.

Bove, L. L., Pervan, S. J., Beatty, S. E., & Shiu, E. (2009). Service worker role in encouraging customer organizational citizenship behaviors. *Journal of Business Research, 62*, 698-705. Retrieved from http://dx.doi.org/10.1016/j.jbusres.2008.07.003.

Brady, M. K., Cronin, J. J., & Brand, R. R. (2002). Performance-only measurement of service quality: A replication and extension. *Journal of Business Research, 55*, 17-31. doi.org:10.1016/S0148-2963 (00)00171-5.

Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, and J. S. Long (Eds.), *Testing Structural Equation Models* (pp. 136–162), Beverly Hills, CA: Sage.

Burnham, T. A., Frels, J. K. & Mahajan, V. (2003). Consumer switching costs: A typology, antecedents, and consequences. *Journal of the Academy of Marketing Science, 31*, 109–126.

Cadotte. E. R., Woodruff, R. B. & Jenkins, R. L. (1987). Expectations and norms in models of consumer satisfaction. *Journal of Marketing Research, 24***,** 305-314.

Carpenter, J. (2008). Consumer shopping value, satisfaction, and loyalty in discount retailing. *Journal of retailing and consumer services*, *1*, 358-363.

Chang, Tung-Zong & Albert R. Wildt. (1994). Price, Product Information, and Purchase Intention: An Empirical Study. *Journal of the Academy of Marketing Science*, *22* (1), 16–27.

Cheng, J., Wang, E., Lin, J. & Vivek, S. (2009). Why do customers utilize the internet as a retailing platform? A view form consumer perceived value. *Asia Pacific Journal of Marketing and Logistics, 21* (1), 144-160.

Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–236). London: Lawrence Erlbaum Associates.

Ciavolino, E. & Dahlgaard, J.J. (2007). Customer satisfaction modeling and analysis: A case study. *Journal of Total Quality Management*, *18*(5), 545-554.

Cronin, J. J., Jr., Brady, M. K., & Hult, G.T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing, 76,* 193–218.

Dick, A. & Basu, K. (1994). Customer loyalty: towards an integrated framework. *Journal of the Academy of Marketing Science*, *22*(2), 99-113.

Fornell, C. (1992). A national customer satisfaction barometer: the Swedish experience. *Journal of Marketing*, *56*(1), 6-21.

Fornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18* (1), 39-50.

Grace, D. & O'Cass, A. (2005). An Examination of Antecendents of Repatronage Intentions Across Different Retail Store Formats. *Journal of Retailing and Consumer Services*, *12*, 227–43.

Grewal, D., Monroe, K.B. & Krishnan, R. (1998). The effects of price-comparison advertising on buyers' perceptions of acquisition value, transaction value, and behavioral intentions. *Journal of Marketing*, *62*(April), 46-59.

Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Heskett, J.L., Sasser, W. E. & Schlesinger, L. A. (1997). *The service profit chain*, New York: Free Press.

Jones, T., & Taylor, S. F. (2007). The conceptual domain of service loyalty: how many dimensions? *Journal of Services Marketing*, *21*, 36-51. Retrieved from http://dx.doi.org/10.1108/08876040710726284.

Jöreskog, K.G. & Sörbom, D. (2006). LISREL 8.8 for Windows [Computer Software]. Lincolnwood, IL: Scientific Software International, Inc.
Kotler, P. & Keller, K.L. (2006). *Marketing Management* (12td ed.). Upper Saddle River, NJ: Prentice Hall.

Koufteros, X., Babbar, S. & Kaighobadi, M. (2009). A paradigm for examining second-order factor models employing structural equation modeling. *International Journal of Production Economics*, *120*, 633-652.

Kumar, V., & Reinartz, W. J. (2006). *Customer Relationship Management: A Databased Approach*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Ladhari, R. (2007). The movie experience: A revised approach to determinants of satisfaction. *Journal of Business Research*, *60*(5), 454–462.

Lapierre, J., (2000). Customer-perceived value in industrial contexts. *The Journal of Business and Industrial Marketing*, *15*(2/3), 122-140.

Lee, M., & Cunningham, L. F. (2001). A cost/benefit approach to understanding service loyalty. *Journal of Services Marketing*, *15*(2), 113–130.

Lin Chien-Hsin, Sher Peter J & Shih Hsin-Yu (2005). Past progress and future directions in conceptualizing customer perceived value. *International Journal of Service Industrial Management*, *16*(4), 318–36.

Liu A. H., Leach Mark P. & Bernhardt K. L. (2005). Examining customer value perceptions of organizational buyers when sourcing from multiple vendors. *Journal of Business Research*, *58*(5), 559–68.

Mathwick C., Malhotra N. & Rigdon Edward (2001). Experiential value: conceptualization, measurement, and application in the catalog and Internet shopping environment. *Journal of Retail, 77*, 39–54.

Mittal, V., Kumar, P., & Tsiros, M. (1999). Attribute-level performance, satisfaction, and behavioral intentions over time: a consumption-system approach. *Journal of Marketing*, *63*(2), 88–101.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*, 460-469. dx.doi.org/10.2307/3150499.

Oliver, R. L. (1996). *Satisfaction: A behavioral perspective on consumer*. New York: Prince Hill.

Oliver, R.L. (1999). Whence consumer loyalty? *Journal of Marketing, 63*, 33-44.
Olsson U. (1979). Maximum likelihood estimation of the polychoric correlation coefficient. *Psychometrika, 44*(4), 443-460.

Parasuraman, A., & Gewal, D. (2000). The Impact of Technology on the quality-value-loyalty chain: a research agenda. *Journal of the Academy of Marketing science, 28*, 168-174.

Pritchard, M. P. & Howard, D. R. (1997). The loyal traveler: Examining a typology of service patronage. *Journal of Travel Research,* (Spring), 2-10.
Pura, M. (2005). Linking perceived value and loyalty in location-based mobile services. *Managing Service Quality, 15*(6), 509-538.

R Core Team (2014). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from http://www.R-project.org/.

Ram, S. & Jung, H. S. (1991). How product usage influences customer satisfaction. *Marketing Letters, 2*, 403-11.

Reichheld, F. F. (1994). Loyalty and the renaissance of marketing. *Marketing Management, 2*(4), 10.

Roig, J.C.F., Garcia, J.S., Tena, M.A.M., & Monzonis, J.L. (2006). Customer perceived value in banking services. *International Journal of Bank Marketing, 24*(5), 266-283.

Ruiz, D. M., Gremler, D. D., Washburn, J. H. & Carrin, G. C. (2008). Service value revisited: Specifying a higher-order, formative measure. *Journal of Business Resear*ch, *61*, 1278–1291. http://dx.doi.org/10.1016/j.

Sanchez-Fernandez, R. & Iniesta-Bonillo, M.A. (2007). The concept of perceived value: A systematic review of the research. *Marketing Theory, 7*(4), 427-451.

Sanchez-Fernández, R., & Iniesta-Bonillo, M. Á. (2009). Efficiency and quality as economic dimensions of perceived value: Conceptualization, measurement, and effect on satisfaction. *Journal of Retailing and Consumer Services, 16*(6), 425–433.

Seeman, E.D. & O'Hara, M. (2006). Customer Relationship Management in Higher Education: Using Information Systems to Improve the Student-School Relationship. *Campus-Wide Information Systems, 23*, 24-34. x.doi.org/10.1108/10650740610639714.

Sheth, J.N., Newman, B.I. & Gross, B.L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of Business Research, 22*, 159–170.

Sirdeshmukh, D., Singh, J. & Sabol, B. (2002). Consumer Trust, Value, and Loyalty in Relational Exchange. *Journal of Marketing, 66,* 15-37.

Spreng, R. & Olshavsky, R. (1993). A Desires Congruency Model of Consumer Satisfaction. *Journal of the Academy of Marketing Science, 21*(3), 169-177.

Srinivasan, A. & Kishore P. (2002). Customer sense of fulfillment in e-commerce: an exploration of its antecedents and consequences. *Journal of Retailing, 78,* 41–50.

Sweeney, J.C., Soutar, G.N. & Johnson, L.W. (1999). The role of perceived risk in the quality-value relationship: A study in a retail environment. *Journal of Retailing, 75,* 77–105.

Sweeney, J.C. & Soutar, G.N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing, 77*(2), 203-220.
Tam, J. M. (2004). Customer Satisfaction, service quality and perceived value: an integrative model. *Journal Marketing Management, 20,* 897-917.

Turel, O., Serenko, A., & Bontis, N. (2007). User acceptance of wireless short messaging services: Deconstructing perceived value. *Information & Management, 44*(1), 63-73. dx.doi.org/10.1016/j.im.2006.10.005.

Walsh G., Shiu E. & Hassan L.M. (2014). Replicating, validating, and reducing the length of the consumer perceived value scale. *Journal of Business Research, 67*(3), 260-267.

Wang, Y., Lo, H. P., Chi, R. & Yang, Y. (2004). An integrated framework for customer value and customer-relationship management performance: A customer-based perspective from China. *Managing Service Quality, 14,* 169–182.

Whittaker, G., Ledden, L., & Kalafatis, S. P. (2007). A reexamination of the relationship between value, satisfaction and intention in business services. *Journal of Services Marketing, 21,* 345–357.

Woodruff, R.B. (1997). Customer value: the next source for competitive advantage. *Journal of Academy of Marketing science, 25*(2), 139-153.

Yang, Z. & Peterson, R.T. (2004). Customer perceived value, satisfaction and loyalty: the role of switching costs. *Psychology and Marketing 21*(10), 799-822.

Yoo, M., & Bai, B. (2013). Customer loyalty marketing research: A comparative approach between hospitality and business journals. *International Journal of Hospitality Management, 33,* 166-177.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing, 52,* 2-22.

Zeithaml, V.A., Berry, L.L. & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*(2), 31-46.

[1] The DWLS approach uses the WLS estimator with polychoric correlations as input to create the asymptotic covariance matrix.

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[2] The ML assumes a multivariate normal distribution in the population. The ULS and DWLS methods yield reasonable estimates under less restrictive assumptions, or in presence of non-normal situations. The idea behind the two least squares methods is that categorical variables have an underlying continuous unobserved variable, called *y**, being estimated by polychoric correlations which correct for loss of information in Pearson correlations due to categorization of a continuous variable (Olsson, 1979).