Enriching the ECSI model using brand strength in the retail setting

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Abstract

Purpose – The purpose of this paper is to investigate the role of the retailer's brand strength as a potential predictor of loyalty. It also examines the role of customer satisfaction (CS) to the retailer's loyalty as well as its impact on the retailer's brand strength.

Design/methodology/approach – The study was conducted in the grocery context and in a market under recession using the European Customer Satisfaction Index (ECSI) model. Data were collected through a telephone survey from 2,000 participants responsible for the household grocery shopping with a quota of 250 respondents from each of the leading grocery retailers in Greece. A formative measurement model was developed and the collected data were analyzed using partial least square path modeling.

Findings – The findings revealed that the strength of the retailer's brand and CS influence retail loyalty and that brand strength mediate the strength of CS to loyalty. Results also suggested that the expectations and the perceptions toward the retailer's product offering are the most important drivers of CS and loyalty. Thus, the study has proved the importance of the functional store attributes to CS and loyalty in the grocery store setting.

Originality/value – Research examining the suitability of the ECSI model in the grocery setting and in a market under economic crisis is scarce. This paper addresses these shortcomings by examining a customer loyalty model which incorporates the brand strength construct and investigates the role of brand strength as a potential predictor of loyalty as well as the role of CS in the brand strength and loyalty.

Keywords Loyalty, Brand strength, Retail branding, Grocery stores, European Customer Satisfaction Index

Paper type Research paper

1. Introduction

Grocery retailers are dominant players in the retail industry. Out of the 250 largest retail companies in the world the top eight are food retailers (Deloitte, 2016). Total grocery sales in Western Europe have reached USD1,508 billion during 2015 (Euromonitor, 2016). Furthermore, the grocery industry is characterized by intense competition with big multinational players expanding geographically (Cardinali and Bellini, 2014; Kumar *et al.*, 2017). Thus, in a mature industry which is easily influenced by economic fluctuations (Cardinali and Bellini, 2014), it is difficult for grocery retailers to differentiate and to maintain their profitability (Kumar *et al.*, 2017).

Customer loyalty is fundamental to business success; it is recognized as a strategic priority and as an important asset to businesses (Aksoy, 2013). Loyalty is important to a firm's long-term success and profitability (Lam *et al.*, 2004; Helgesen, 2006). Given the current situation is very challenging for grocery retailers to establish loyalty. However, in contrast to the research on brand loyalty, little research has been conducted on retail loyalty and its antecedents (Kumar *et al.*, 2013) and particularly in the context of grocery retailers and in a market under economic crisis.

Several models for assessing customer satisfaction (CS) and its antecedents in predicting loyalty have been introduced. The European Customer Satisfaction Index (ECSI) represents

a variation on the ACSI model and it was introduced in 1998 (Kristensen *et al.*, 2000). A major advantage of ECSI is its flexibility due the use of generic questions. The ECSI is one of the well-established models for assessing CS and its antecedents in predicting loyalty (Ball *et al.*, 2004; O'Loughlin and Coenders, 2004; Ciavolino and Dahlgaard, 2007). Using structural equation modeling, ECSI has been validated across many industries (e.g. retail banking, cable TV, mobile and fixed phones, insurance, and public transportation) and across several European countries (Kristensen *et al.*, 2000; Martensen *et al.*, 2000; O'Loughlin and Coenders, 2004; Ball *et al.*, 2004; Ciavolino and Dahlgaard, 2007). Marketing research conducted during the last years recognizes the importance of brand strength to business success (Doyle, 2001) as well as to the development of brand relationships and loyalty (Veloutsou, 2015). Even though the ECSI model has many variations (see Table I), the construct of brand strength has not been incorporated in the model. Methodologically, in the ECSI model, the latent variables (LVs) are measured with a reflective relationship. Based on the criticisms for reflective measurements, researchers suggest that formative measurements should be used (Hair *et al.*, 2012).

The ECSI model is clearly appropriate for the prediction of loyalty in the grocery industry, but it has not been used in markets during recession. Using established models in new contexts and conditions advances our understanding and generalizability of these models (Martensen *et al.*, 2000; Bou-Llusar *et al.*, 2001; Ball *et al.*, 2004). Therefore, testing the ECSI model in markets during recession is an appropriate approach to study the determinants of retail loyalty. In addition, measuring the LVs in a formative manner is of value from a methodological perspective. Therefore, this study attempts to: introduce and investigate the role of brand strength as a potential predictor of loyalty, investigate the role of CS in the brand strength and loyalty, extend the investigation in the grocery store setting and in a market under recession, and use a formative approach to measure the LVs.

The remaining of the paper is structured as follows. It first reviews the existing literature on ECSI and identifies specific shortcomings of the existing approaches. It then presents the study focus and hypotheses and the methods used for the data collection and analysis. Finally, the results are presented and discussed as well as the practical and methodological contributions of this study.

2. Conceptual framework

2.1 The ESCI

The ECSI methodology has been developed by European experts based on a set of requirements (ECSI, 1998). The initial ECSI model consists of seven LVs; the five exogenous variables (customer expectations, perceived product quality, perceived service quality, perceived value, and image) that are seen as the antecedents of the two endogenous variables of satisfaction and loyalty (Bayol *et al.*, 2000; Kristensen *et al.*, 2000). A review of previous studies that used the ECSI methodology revealed that there are variations from the initial model in the constructs, the mode of measurement, and in the scales that were used (Table I). Researchers have made changes to the initial model to adapt it to their specific study. In some models loyalty is explained by CS and image (Kristensen *et al.*, 2000; Martensen *et al.*, 2000; Ciavolino and Dahlgaard, 2007). Other models have also included the construct of complaints as an outcome of satisfaction and as a determinant of loyalty (Bayol *et al.*, 2000; Ferreira *et al.*, 2010). Other researchers have added the construct of trust (Askariazad and Babakhani, 2015). While in some models loyalty is explained also by trust, complaints, and communication in addition to CS and image (Ball *et al.*, 2004; Revilla-Camacho *et al.*, 2017). Furthermore, there is no consistency in how perceived quality was measured. In some models, perceived quality is conceptually divided in perceived product quality ("Hard ware") and in perceived service quality ("Human ware") while in others there is no such distinction (Kristensen *et al.*, 2000; Martensen *et al.*, 2000; Vilares and Coelho, 2003; Ciavolino and Dahlgaard, 2007; Ferreira *et al.*, 2010).

Author	Year	Context	Country	Sample	Loyalty	CS	Expect.	PPQ	PSQ	PQ	PV	Image	Other constructs	Mode	Scale
										Constructs					
Revilla-Camacho et al.	2017	Hotel	Spain	629	×	×	×	–	–	×	×	×	Trust, complaints, communication, CR	R and F	1-5
Askariazad and Babakhani	2015	B2B: construction and mining	Iran	90	×	×	×	–	–	×	×	×	Trust, complaints	R[a]	1-5
Turkyilmaz et al.	2013	Telecommunications	?[b]	266	×	×	×	–	–	×	×	×	–	R[a]	1-5
Coelho and Henseler	2012	Banking and cable TV	?	1,583	×	×	×	–	–	×	×	–	Trust, customization	R	1-10
Ferreira et al.	2010	Mould industry	Portugal	108	×	×	×	–	×	–	×	×	Complaints	R	?[b]
Chitty et al.	2007	Youth Hostels	Australia	281	×	×	–	×	–	–	×	×	Technical dimension, functional dimension, Price	R[a]	1-7
Ciavolino and Dahlgaard	2007	Auto industry, service industry, motor vehicle industry, other manufacturing, remaining industry	Sweden	89	×	×	×	×	×	–	×	×	–	?[b]	1-5
Ball et al.	2006	Banking industry	Portugal	2,500	×	×	×	–	–	×	×	×	Trust, complaints, communication, personalization	R[a]	?[b]
Aydin and Ozer	2005	Mobile phone users	Turkey	1,662	×	–	–	–	×	–	×	×	Trust, switching cost	R[a]	1-5
Ball et al.	2004	Banking	Portugal	2,826	×	×	×	–	–	×	×	×	Trust, complaints, communication	R[a]	?
Vilares and Coelho	2003	Super markets	?	547	×	×	×	×	×	–	×	×	Perceived employee satisfaction, perceived employee commitment, perceived employee loyalty	R[a]	?[b]
Kristensen et al.	2000	Postal service	Denmark	3,000	×	×	×	×	×	–	×	×	–	R	?[b]
Bayol et al.	2000	Mobile phone	?[b]	250	×	×	×	–	–	×	×	×	Complaints	R	1-10
Martensen et al.	2000	Telecommunications, soft drinks, fast food restaurants, banks, super markers	Denmark	8,000	×	×	×	×	×	–	×	×	–	?[b]	1-10

Notes: "×" represents the presence of the corresponding variable; "–" the absence for each of the studies reviewed; [a]Identified based on the method of analysis; [b]not provided

In addition to the variations in the LVs, it was also revealed that there is no consistency in the scale used (Table I). It is noteworthy that quite many models do not provide a description of the constructs' measurement modes and where possible this was identified based on the method of analysis. All of the models reviewed are based exclusively on reflective measures except one that used both formative and reflective measures (Revilla-Camacho *et al.*, 2017). These findings are consistent with an extensive research conducted by Hair *et al.* (2012).

2.2 Conceptual model
The theoretical review enables the proposing of the conceptual model depicted in Figure 1. The model includes a new construct, brand strength, aiming to better explain loyalty in the grocery store context. In this section, I develop the conceptual model and hypotheses based on the literature.

Loyalty has received a great deal of attention among researchers. However, there is no agreement over the conceptualization and operationalization of the construct. Traditionally, customer loyalty has been measured as a behavioral attitude and loyal customers were identified based on their actual purchases. In the retailing context some of these measures of customer behavior commonly used in the industry are: repurchase, share of purchase, and share of visits (Mittal and Kamakura, 2001; Magi, 2003). All these measures assist managers in evaluating and monitoring behavioral loyalty through the customer's purchase behavior (Zeithaml *et al.*, 1996; Sirohi *et al.*, 1998). However, the behavioral loyalty approach was challenged as it does not explain the reasons of loyalty and criticized as insufficient to capture the "true" brand loyalty. Thus, researchers have argued that loyalty should be captured as a combination of both behavioral and affective attitude (Kumar and Shah, 2004; Aksoy, 2013). This study conceptualizes loyalty as a multi-dimensional construct. Therefore, both behavioral loyalty (the degree to which consumers intend to repurchase) and attitudinal loyalty (recommending the store to others, and positive word of mouth) are considered in measuring loyalty (Ball *et al.*, 2004; Lam *et al.*, 2004).

CS is considered by many researchers as the most important determinant of loyalty (Lam *et al.*, 2004; Rust *et al.*, 2004; Chandrashekaran *et al.*, 2007). On the other hand, recent
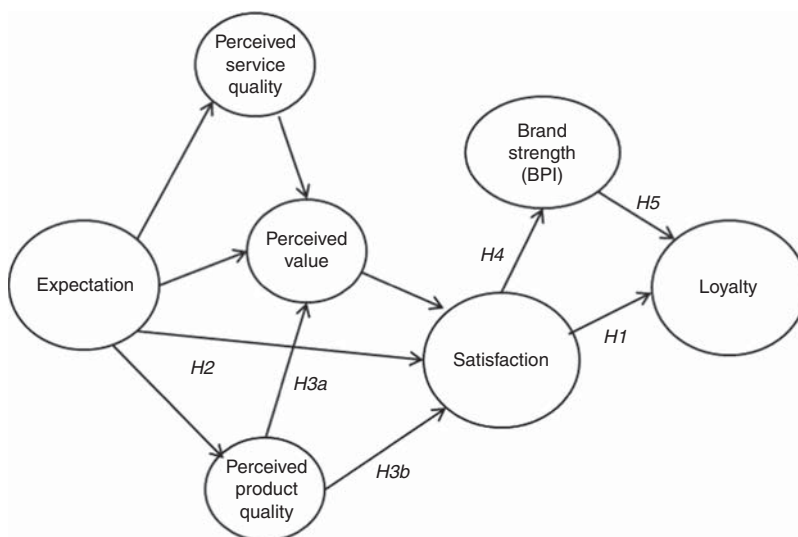

Figure 1.
Proposed model

research suggests that the CS-loyalty relationship is not so straight forward and that CS is inadequate in predicting and/or explaining loyalty. Overall, researchers suggest that there is a positive relationship between CS and loyalty but the variance explained by CS is rather small (Kumar *et al.*, 2013). Additionally, they found that there are variations on the impact of CS due to industry differences (Kumar *et al.*, 2013; LariviÈRe *et al.*, 2016). It is noteworthy that only few studies address the impact of CS in the grocery retail sector (Davies *et al.*, 2001). The nature of grocery shopping is characterized as task oriented, with frequent visits to the store. Due to these differences, it can be implied that the specific context might be dominated by utilitarian concerns. Thus, there are different mechanisms that determine CS and the strength of the retail brand in this setting compared to other retail settings that hedonic experiences are more important (Kozinets *et al.*, 2002).

Researchers have agreed that CS is an antecedent of loyalty. This is because CS is an outcome of the subjective evaluation that the chosen alternative – the store – meets or exceeds expectations (Bloemer and de Ruyter, 1998). Thus, the customer's positive evaluation is a requirement for repeat purchase behavior and an important pillar to sustain loyalty (Anderson and Mittal, 2000; Veloutsou, 2015). However, there is disagreement among researchers on the strength and the shape of this relationship; some of the studies indicate a linear while others a non-linear relationship (Kumar *et al.*, 2013). Some of the past research suggests that the strength of satisfaction and the context affect the relationship with loyalty (Chandrashekaran *et al.*, 2007; LariviÈre *et al.*, 2016). Therefore, it is hypothesized that:

H1. CS positively influences retail loyalty.

According to Szymanski and Henard (2001), the role of expectations in satisfaction can be modeled either as an outcome of comparison or of anticipation. In the traditional expectancy disconfirmation satisfaction model, satisfaction is the outcome from the comparison of expectations with perceived performance (Oliver, 1980). Thus, when product perceived performance exceeds expectations (positive disconfirmation) consumers are satisfied and when expectations exceed perceived performance (negative disconfirmation) consumers are dissatisfied (Oliver, 1980). In addition, expectations can be modeled as the level of quality that customers anticipate to receive and is formulated through prior experience/interactions with the product or service (O'Loughlin and Coenders, 2004; Ciavolino and Dahlgaard, 2007). Expectations reflect the image the customer has developed of the store, through previous shopping trip experiences (Theodoridis and Chatzipanagiotou, 2009; Esbjerg *et al.*, 2012). It can also be formulated prior to the purchase from knowledge acquired through word of mouth, publicity, opinion leaders, and through all elements of the product's marketing mix (Oliver, 1980; Boulding *et al.*, 1993). Because grocery shopping occurs frequently, consumers have many interactions with the retailer. Therefore, it is hypothesized that:

H2. Expectations positively influence CS.

Perceived quality is defined as the consumer's judgment about a product's overall excellence or superiority (Zeithaml, 1988). Perceived quality affects loyalty (Das, 2014) and CS mediates this relationship (Frank *et al.*, 2014). The perception on quality for retailers can be derived from both tangible and intangible attributes (Pappu and Quester, 2006; Maggioni, 2016). Thus, similar to the ECSI model, perceived quality is based on the evaluation of performance on different attributes related with the grocery retail industry (Churchill and Surprenant, 1982; Maggioni, 2016). The construct was broken down to perceived product quality and to perceived service quality. The first contains perceptions related with the tangible elements of the retailer's marketing strategy and the second perceptions with the intangible elements such as the store atmosphere, the friendliness of the personnel, etc., perceived customer

value has been defined as the trade-off between the customer's evaluation of all the benefits derived and all the costs of acquiring those benefits (Lam *et al.*, 2004). This definition treats perceived value as a multi-dimensional construct which includes "give" (e.g. cost, effort) and "take" (e.g. functional benefits, hedonic benefits). Thus, perceived value is created during the consumption experience (Grönroos, 2011) and it should be especially important in the grocery retail context which is characterized with frequent direct interaction of the consumer with the retailer. This construct was measured by rating the quality of products and services (in terms of the variety of products, the customer service, the quality of products, and the store atmosphere along with the overall buying experience) given the prices that consumers paid. Because grocery shopping is associated with utilitarian product beliefs, it is hypothesized that:

H3a. Perceived product quality positively influences perceived value.

H3b. Perceived product quality positively influences CS.

Researchers suggest that trying to explain loyalty through CS alone is not enough and that there is a need for models that will include other variables as mediators, moderators or other predictors and thus increase the explained variance (Szymanski and Henard, 2001; Kumar *et al.*, 2013). A lot of research in marketing attempts to find the antecedents of loyalty, and some of the significant predictors are CS, trust, communication, customer factors, and the view toward the brand (Chaudhuri and Holbrook, 2001; Ball *et al.*, 2004; Baltas *et al.*, 2010). However, as the marketing thinking evolves and the environment changes, some new concepts introduced in the marketing thinking are increasingly gaining interest and may be better predictors of loyalty, such as the strength of the brand, the consumer-brand relationship, and the engagement with the brand (Hollebeek, 2011; Veloutsou, 2015; Dessart *et al.*, 2016). The above researchers suggest that cognitive and affective elements can strengthen the relationship between the brand and the customer and thus affect the strength of the brand. Thus, there is a need to investigate the relevant importance of the constructs that are recognized for a long time as predictors of loyalty and the new constructs simultaneously and in particular in contexts that are somewhat idiosyncratic, such as retailing. Consequently, any improvement in identifying the factors that affect retail loyalty could be a value to managers, researchers, and investors who use satisfaction surveys to predict behaviors and based on that allocate the company's resources (Morgan and Rego, 2006).

A very important trend in retailing is the rise of the retailer as a brand and retailers have realized the need to develop a strong brand name (Grewal *et al.*, 2004; Kumar and Youn-Kyung, 2014). The literature review shows a plethora of ways of interpreting brand strength and performance in a product brand context. Brand image, trust, brand relationships, brand attachment, and engagement have been used as a basis of brand strength (Chaudhuri and Holbrook, 2001; Hollebeek, 2011; Veloutsou, 2015). In this study, brand strength is conceptualized as the outcome of the overall evaluation and attitudes toward the retailer's brand which is formulated from multiple direct and indirect interactions/experiences with the retailer (Möller and Herm, 2013). Through internal processes consumers assess the retailer's brand based on various tangible and intangible cues (Kumar and Youn-Kyung, 2014). The way the retailer's brand is perceived and evaluated affects their behavior. A positive brand evaluation has a positive effect on brand loyalty (Veloutsou, 2015). The development of trust with the brand is positively related to both behavioral and attitudinal loyalty (Chaudhuri and Holbrook, 2001; Veloutsou, 2015). Furthermore, several studies found that positive emotions impact the evaluation toward a brand which influences purchase intention (Shim *et al.*, 2001; Brakus *et al.*, 2009). This finding was recently confirmed in a utilitarian setting (Ladhari *et al.*, 2017). Although, the link between brand strength and loyalty has been

studied in product branding context (Veloutsou, 2015), no study has explored the same in the grocery retailing context. This gap leads to propose the following hypotheses of this study:

H4. CS positively influences brand strength.

H5. Brand strength positively influences retail loyalty.

2.3 ECSI measurement approach: formative vs reflective

The model consists of the structural or inner model and the measurement model. The measurement model describes the relationships between the observable variables, which are called manifest variables or indicators, and the unobservable LVs or constructs. In respect to the direction of the relationship between a construct and its indicators, Diamantopoulos *et al.* (2008) identified the reflective and the formative measurement models. Misspecification of the measurement model can bias inner model parameter estimation and lead to incorrect conclusions on tested relationships (Jarvis *et al.*, 2003; Diamantopoulos *et al.*, 2008). Thus, it is important for researchers to select the appropriate measurement model. The reflective model is the most common type used in SEM and particularly in the business field (Cenfetelli and Bassellier, 2009; Hair *et al.*, 2012). According to Diamantopoulos and Winklhofer (2001, p. 274), there is "an almost automatic acceptance of reflective indicators in the minds of researchers"; they believe that in many cases, constructs are operationalized with reflective indicators instead of the more appropriate formative indicators.

In order to help researchers determine the appropriate measurement model Jarvis *et al.* (2003); Coltman *et al.* (2008) suggested that both theoretical and empirical considerations should be considered. Jarvis *et al.* (2003) suggested four primary decision rules: the direction of causality, the interchangeability of the indicators, the intercorrelation among the indicators, and the relationship of the indicators with the construct. Using these rules, the formative measurement was selected for this study and thus the appropriate type of analysis was followed.

3. Methodology

3.1 Empirical context

Grocery retailing in Greece was selected as the empirical context of the study for several reasons. First, the nature of grocery retailing is characterized as task oriented with short sales cycle. Second, the specific setting is very competitive with low loyalty levels with consumers patronizing multiple chains. Also, due to the economic crisis consumers have become more price-sensitive (IRI Topline Report, 2017). Third, there is little research on retail loyalty and its antecedents. Fourth, the study is supported by a large grocery retailer that wants to investigate the determinants of loyalty.

3.2 Sampling and description of data

Data were collected through a telephone survey. The target population was those responsible for the household grocery shopping, had made their purchases from a super market recently, and they were inhabitants of all regions in Greece. Respondents were asked to respond to the questions for the grocery retailer that they visit more often and the one that they make most of their purchases. The questionnaire was pretested, using a small convenience sample, to ensure that the questions are understood and to check the sequence of questions. A total of 2,000 respondents completed the questionnaire based upon a quota of 250 respondents from each of the seven leading grocery retailers in Greece and an additional 250 from the "all others" super market category. Of the respondents 31 percent were men and 69 percent were women while 76.5 percent were in the 25-55+ age group.

Comparing the demographic characteristics of the sample with the National Statistics, we note that women and the 25-55+ age group are over represented in the sample. However, this is to be expected since participants in the survey were those responsible for the household grocery shopping.

3.3 Method of analysis
The model was estimated using partial least squares-structural equation modeling. Partial least square (PLS) was selected as an appropriate method of analysis since the objective of this research is theory development and prediction (Hair *et al.*, 2011, Table I, p. 144). For the execution of the analyses the SmartPLS 3.0 software was used (Ringle *et al.*, 2015).

3.4 Measures and instrument design
A questionnaire survey was designed to empirically validate the model (Figure 1) and test the hypotheses. In line with the widely recognized methodology of the ECSI model (Ciavolino and Dahlgaard, 2007), which is central to the conceptual development of this study, the questionnaire asked respondents to assess their main grocery retailer.

The model of this study links CS to its determinants (expectations, perceived product quality, perceived service quality, and perceived value) and to its consequences (brand performance and loyalty). These seven LVs are seen as latent, i.e. non-observable. Each of the LVs is operationalized by three to eight measurement variables (indicators) which were observed by survey questions to customers (see Table AI). Thus, the LV CS is conceptualized and operationalized as a multi-dimensional aggregate construct. As it is indicated in Table II, the four first-order constructs were combined to produce CS the second-order construct (Diamantopoulos *et al.*, 2008).

Contrary to the ECSI model, in this study all variables measuring CS were specified as formative rather than reflective for the following reasons: the nature of the constructs is not independent from the indicators, i.e. any change in any of the indicators will cause a change in the construct (e.g. a decrease in the expectations regarding the service offered will decrease the overall expectations), we do not expect covariation among the indicators, i.e. a drop in any of the indicators measuring each of the constructs is not expected to necessarily to bring a change on the other indicators (e.g. when measuring the construct of perceived product quality, a drop in the product freshness is not expected to have a drop in the cleanliness of the store). Thus, I view indicators as causing rather than being caused by the measured LV (Diamantopoulos and Winklhofer, 2001; Coltman *et al.*, 2008). Therefore, all constructs are conceptualized as aggregate constructs and they are operationalized by summing scores on their dimensions, meaning that the dimensions combine to produce the construct (Edwards, 2001). However, a major concern of formative measurement models is how to establish statistical identification to enable their estimation. In order to enable their estimation, it is necessary to place formative measurement models "within a larger model that incorporates consequences (i.e. effects)" of the CS (Diamantopoulos *et al.*, 2008, p. 1213). Thus, three reflective indicators were added to the formatively measured construct of CS (see Table AI).

First-order construct	Second-order construct
Customer expectations	Customer satisfaction
Perceived product quality	
Perceived service quality	
Perceived value	

Table II.
Emergent
measurement model

Even though the study was mainly quantitative, a qualitative phase was used for the creation of a brand performance index (BPI) for measuring the construct of brand strength. The index is based on formative indicators and its construction is based on the guidelines provided by Diamantopoulos and Winklhofer (2001). Because a formatively measured construct is more abstract than a LV measured with reflective indicators, the specification of the scope of the LV (brand strength) is important; it provides us with the domain of content the index is intended to capture (Diamantopoulos and Winklhofer, 2001). In this study, we specify the domain of content of the brand strength construct as the outcome of the overall evaluation and attitudes toward the retailer's brand. The indicators were selected to capture the scope of the construct based on a review of the literature, ten focus groups with consumers, and five interviews with retail marketing managers, and a research analyst. The rest of the questionnaire was drafted using existing scales to ensure content validity. The scales were translated to Greek and back translated to English. Where necessary, the items were adapted to fit the grocery store context. The items used to capture all constructs of the model are presented in Table AI. The number of items used to measure the constructs is: expectations five items, perceived value four items, perceived product quality seven items, perceived service quality eight items, brand strength seven items, and CS and loyalty three items each. All the variables were measured using a ten-point Likert scale, i.e. there is no midpoint so the respondents had to make a choice (O'Loughlin and Coenders, 2004). In addition, respondents had an option to select a category of "don't know"/"will not tell" in case of lack of knowledge and/or indifference.

4. Data analysis and results

The measurement model and the structural model were assessed following the suggested procedure by Hair *et al.* (2017). Overall, the construct measures of both the measurement model and the structural model proved to be valid and reliable.

4.1 Analysis of the measurement model

In formative measurement models, it is required to assess collinearity before analyzing outer weights for their significance and relevance (Cenfetelli and Bassellier, 2009). To assess collinearity, the variance inflation factor (VIF) was computed (Table AII). All 31 indicators that are used to measure the respective constructs have a VIF below the threshold value of 5, thus collinearity is not an issue. Furthermore, in order to assess the contribution of the indicators to forming the constructs, the bootstrapping procedure (5,000 samples) was followed. Looking at the significance levels (Table AII), we find that the weights of all formative indicators are significant at a 5 percent level ($\alpha = 0.05$ two tailed test), except for PSQ_2 one of the indicators of the perceived service quality construct. Even though the outer weight for this indicator is not significant, I retain the indicator due to its outer loading (0.497), to better capture the perceived service quality construct and to possible managerial input.

In terms of assessing the two reflective constructs of CS and loyalty both demonstrate internal consistency reliability, convergent validity, and discriminant validity. Composite reliability values are above 0.7; AVE is higher than the minimum of 0.5; outer loadings are above 0.708 with the exception of one of the indicators in the construct of loyalty (LOY_1) that has an outer loading of 0.521; (Table III). The indicator LOY_1 was retained for its contribution to content validity. Furthermore, the outer loadings (are indicated in bold) of all indicators measuring CS and loyalty are greater than the cross-loadings on the other constructs thus exhibiting discriminant validity.

4.2 Analysis of the structural model

The structural model provides us with measures of the relationships between the constructs. Assessing the structural model, the results indicate that the VIF values of all combinations are below the threshold value of 5 (Table V), thus collinearity is not an issue in the structural model and all constructs are retained.

In terms of the relationships among the constructs, all structural path coefficients are significant at a 5 percent level but in some cases their size is small (Table IV); for instance, expectations to perceived value (0.064) and expectations to CS (0.079). This can be attributed to the large sample size. In this case, the analysis and interpretation of the results can be based on the relative importance of the relationships, i.e. perceived product quality has the highest effect to CS (0.297) than the other three constructs (expectations: 0.070, perceived service quality: 0.204, and perceived value: 0.202), also perceived product quality has the highest effect to perceived value (0.565) than expectations and perceived service quality, also the BPI has a higher effect to loyalty (0.388) than CS (0.261).

The results of the PLS (SmartPLS 3.0) analysis, the path coefficients (β), variance (R^2) are also summarized in Figure 2.

As suggested by Hair *et al.* (2017), the structural model is also assessed by examining the coefficient of determination (R^2 value). The results indicate that a moderate amount of variance is explained for loyalty ($R^2 = 0.334$), CS ($R^2 = 0.464$), and brand strength ($R^2 = 0.329$). This means CS and brand strength explain 33.4 percent of loyalty; expectations, perceived service quality, perceived product quality, and perceived value explain 46.4 percent of CS; CS explains 32.9 percent of the brand strength. Thus, the fit of the modified model in the grocery store setting is shown (Hair *et al.*, 2017).

		Composite reliability	AVE
Customer satisfaction (CS)		0.778	0.540
Customer loyalty (LOY)		0.746	0.503
	CS	Loyalty	
CS_1	*0.792*	0.394	
CS_2	*0.700*	0.294	
CS_3	*0.709*	0.368	
LOY_1	0.241	*0.521*	
LOY_2	0.387	*0.780*	
LOY_3	0.380	*0.792*	

Table III.
Assessing the
measurement model

	VIF	Path coefficients	t-Values	p-Values	95% Bca confidence interval	Significance ($p < 0.05$)
BPI → LOY	1.491	0.388	16.711	0.000	[0.345, 0.436]	Yes
EXPECT → PPQ	1.000	0.631	31.638	0.000	[0.592, 0.671]	Yes
EXPECT → PSQ	1.000	0.512	21.038	0.000	[0.464, 0.560]	Yes
EXPECT → PV	1.683	0.064	2.492	0.013	[0.014, 0.115]	Yes
EXPECT → SATISF	1.692	0.079	3.460	0.001	[0.034, 0.124]	Yes
PPQ → PV	2.560	0.565	20.344	0.000	[0.509, 0.619]	Yes
PPQ → SATISF	3.270	0.297	7.895	0.000	[0.224, 0.370]	Yes
PSQ → PV	2.087	0.173	6.447	0.000	[0.122, 0.226]	Yes
PSQ → SATISF	2.153	0.204	6.662	0.000	[0.145, 0.265]	Yes
PV → SATISF	2.222	0.202	7.308	0.000	[0.147, 0.254]	Yes
SATISF → BPI/BS	1.000	0.574	31.985	0.000	[0.540, 0.610]	Yes
SATISF → LOYALTY	1.491	0.261	10.833	0.000	[0.212, 0.306]	Yes

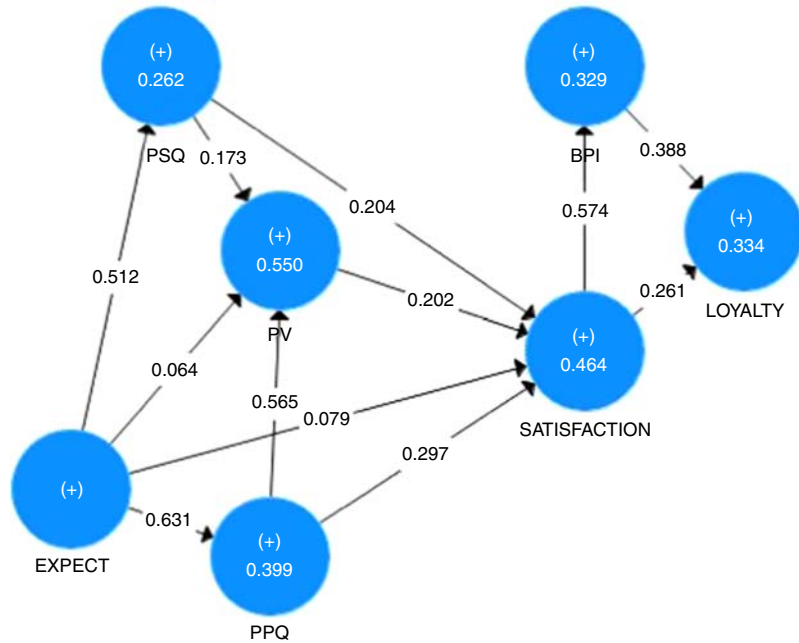**Table IV.**
Assessing the
structural model

Figure 2.
Structural model

In addition, the impact of each exogenous construct on the associated endogenous construct in the model was calculated with the effect size f^2. In assessing f^2, values of 0.02, 0.15, and 0.35 represent small, medium, and large effect, respectively (Henseler *et al.*, 2009). The f^2 values in the structural model are shown in Table V. The path between brand strength and loyalty has a medium effect size ($f^2 = 0.151$); which means that removal of the path from the model has a moderate effect on the loyalty construct. The path between CS and loyalty indicates a small effect size ($f^2 = 0.068$), i.e. the path has a low predictive value and removal of the path from the model will have a small effect on the loyalty. However, the path between CS and brand strength has a large effect size ($f^2 = 0.491$), so brand strength is a mediating construct in the impact of CS on loyalty.

5. Discussion
The objective of this study was to incorporate brand strength into the ECSI model and to investigate its role as a potential predictor of loyalty. Furthermore, this study attempts to investigate the role of CS to the retailer's loyalty and its impact on the brand strength in

Hypothesis	f^2	β-value	t-Value	Decision
H1: Customer satisfaction positively influences retail loyalty	0.068	0.261	10.833	Supported
H2: Expectations positively influence customer satisfaction	0.007	0.079	3.460	Supported
Total effect of expectations to customer satisfaction		0.474	20.717	
H3a: Perceived product quality positively influences perceived value	0.277	0.202	7.308	Supported
H3b: Perceived product quality positively influences customer satisfaction	0.050	0.297	7.895	Supported
H4: Customer satisfaction positively influences brand strength	0.491	0.574	31.985	Supported
H5: Brand strength positively influences retail loyalty	0.151	0.388	16.711	Supported

Table V.
Summary of
the hypotheses
and results

the grocery store setting and in a market under recession. To explore these relationships five hypotheses have been developed and empirically tested. Results of this study (Table V) revealed that CS (*H1*; $\beta = 0.261$, $t = 10.833$) and brand strength (*H5*; $\beta = 0.388$, $t = 16.711$) significantly influence loyalty. Also, CS significantly influences brand strength (*H4*; $\beta = 0.574$, $t = 31.985$). In relation to the determinants of CS, perceived product quality has a significant influence on both CS (*H3b*; $\beta = 0.297$, $t = 7.895$) and perceived value (*H3a*; $\beta = 0.202$, $t = 7.308$).

However, when comparing the differential impact of several driver constructs on a criterion construct, the total effects need to be considered. Table VI presents the results for the total effects as well as their significance at a 5 percent level. In our case, even though the direct effect of CS to loyalty ($\beta = 0.261$, $t = 10.833$) is not very strong, the total effect is moderate via the mediating construct of brand strength ($\beta = 0.483$, $t = 22.852$); indicating the relevance of CS in explaining loyalty. Expectations have a weak direct effect on CS (*H2*; $\beta = 0.079$, $t = 3.460$). However, expectations have a significant indirect effect via the mediator variables of perceived product quality and perceived service quality; overall expectations have the highest total effect to CS ($\beta = 0.474$, $t = 20.717$). This can probably be attributed to the influence of expectations on perceived product quality ($\beta = 0.631$, $t = 31.638$) and perceived service quality ($\beta = 0.512$, $t = 21.038$). Thus, *H2* is supported.

Furthermore, perceived product quality has the greatest direct effect on CS since it has the larger coefficient ($\beta = 0.297$) than expectations, perceive service quality, and perceived value. But there is also an indirect effect between the two constructs via the moderating construct of perceived value and the total effect is 0.411. Thus, even though the direct effect in some cases is not very strong, the total effect is moderate indicating the relevance of the constructs in explaining the criterion constructs.

6. Theoretical and managerial implications

This study provides some significant contributions to the marketing theory. Previous research has examined the direct relationship of CS on loyalty and most loyalty programs are based on the satisfaction-trust-loyalty paradigm. However, even though the effect of CS on loyalty is evident, there are variations in the level of impact and thus hard to predict loyalty. This research confirms that this cause-effect relationship is more complex. To better understand this relationship, the construct of brand strength is added as a mediator variable in the model. This study confirmed that the strength of the retailer's brand has a direct positive impact on loyalty and it is consistent with previous studies (Das, 2014; Veloutsou, 2015). In addition, this study identified that the most important determinants of

	Total effect	*t*-Values	*p*-Values	95% Bca confidence interval	Significance ($p < 0.05$)
BPI/BS → LOYALTY	0.388	16.711	0.000	[0.345, 0.436]	Yes
EXPECT → PPQ	0.631	31.638	0.000	[0.592, 0.671]	Yes
EXPECT → PSQ	0.512	21.038	0.000	[0.464, 0.560]	Yes
EXPECT → PV	0.509	21.338	0.000	[0.461, 0.556]	Yes
EXPECT → SATISF	0.474	20.717	0.000	[0.429, 0.519]	Yes
PPQ → PV	0.565	20.344	0.000	[0.509, 0.619]	Yes
PPQ → SATISF	0.411	11.894	0.000	[0.341, 0.477]	Yes
PSQ → PV	0.173	6.447	0.000	[0.122, 0.226]	Yes
PSQ → SATISF	0.239	7.732	0.000	[0.180, 0.300]	Yes
PV → SATISF	0.202	7.308	0.000	[0.147, 0.254]	Yes
SATISF → BPI/BS	0.574	31.985	0.000	[0.540, 0.610]	Yes
SATISF → LOYALTY	0.483	22.852	0.000	[0.442, 0.526]	Yes

Table VI.
Significance
testing results of
the total effects

brand strength (see Table AII) are the emotional closeness and familiarity with the store (0.341), the perceived superiority (0.302) as well as the reputation of the retailer (0.274). Also, the study confirmed the direct positive impact of CS to retail loyalty but the size of the effect is small ($f^2 = 0.068$). So, CS alone has a low predictive value to loyalty toward the grocery retailer. However, this study has also found the indirect impact of CS on retail loyalty through the mediating construct of brand strength. The mediating role of the brand strength construct can be explained by the strong effect of CS (the predictor variable) to brand strength (the dependent variable). Another theoretical contribution of this study is the identification of the most influential determinants of CS. The results showed that the indirect impact of expectations to CS is greater than the direct impact. Thus, the study has found the mediating roles of perceived product quality and perceived service quality in the relationship between expectations and CS. Furthermore, the study has proved the importance of the functional store attributes to CS and loyalty in the grocery store setting; the expectations and the perceptions toward the retailer's product offering are the most important drivers of CS and loyalty.

The intense competition in the grocery retail market emphasizes the need for loyalty and for retaining existing customers. Thus, for retail managers improving loyalty is a strategy to maintain a competitive advantage and to improve profitability. The results of this study will help them in developing and implementing effective strategies aiming to retain customers. Given that the strength of their brand has a positive impact on loyalty, retail managers should try to engage in activities that will strengthen their brand. This study revealed that the most important determinants of brand strength are the reputation, the superiority as well as the emotional closeness and familiarity with the store. Therefore, their managerial actions and communication should be directed toward this direction; they should be aimed to create the specific perceptions toward their brand. In terms of the determinants of CS, this study has found that perceived product quality has a higher influence to both perceived value and CS than perceived service quality. Thus, retailers should focus their marketing strategies on the tangible elements, i.e. to invest in the quality and variety of products offered as well as the availability of the products in their store.

7. Limitations and further research

This study has few limitations. First, the study was focused on grocery retailers. Thus, in order to generalize these results, further testing across other retail segments (non-food retailers) is required. Second, respondents were asked to respond to the questions for their favorite grocery retailer. This may have influenced the strength of the relationships between the respondents and the selected grocery retailer. In addition, even though their responses were for the retailer, it is expected that their responses were influenced by their experience with a specific store of the retailer.

Some suggestions for future research: further analysis should be made in order to identify if there are significant differences among the different grocery retailers that were included in the sample; the construct of brand strength should be conceptualized as a second-order construct since it will facilitate understanding of the formation process; and future research should investigate the role of the retailer's image to brand strength and to evaluate whether the brand strength is a better predictor of loyalty than the retailer's image.

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Appendix

Enriching the
ECSI model
using brand
strength

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Model construct and items	Measurement
Customer satisfaction (CS)	Fornell *et al.* (1996)
(1) Overall satisfaction with the super market	
(2) Fulfillment of expectations	
(3) Performance vs the customer's ideal super market	
Customer expectations (EXPECT)	Fornell *et al.* (1996)
(1) Expectations regarding the variety of products offered	
(2) Expectations regarding the service offered	
(3) Expectations regarding the quality of products offered	
(4) Expectations regarding the value for money offered	
(5) Expectations regarding the overall buying experience offered	
Perceived product quality (PPQ)	Fornell *et al.* (1996)
(1) The quality of products offered	Parasuraman *et al.* (1988)
(2) The cleanliness of the store	
(3) Product freshness	
(4) The variety of products offered	
(5) The promotions of the store, discounts, gifts, bonus points	
(6) The availability of products on the shelves	
(7) The value for money prices	
Perceived service quality (PSQ)	Fornell *et al.* (1996)
(1) The quality of personal service and friendliness of personnel	Parasuraman *et al.* (1988)
(2) The time you had to wait at the cashier and at the fresh products	
(3) Convenience of locating products at the store	
(4) Knowledge and advice offered by the personnel	
(5) The availability of personnel	
(6) The overall store atmosphere and decoration	
(7) The care for hygiene and better quality of life	
(8) How modern and contemporary/up to date is the store	
Perceived value (PV)	Fornell *et al.* (1996)
Rating the quality of products and services given the price that is paid in terms of	
(1) The variety of products offered	
(2) The service	
(3) The quality of products offered	
(4) The overall purchase experience offered	
Brand performance index/brand strength (BPI)	Items chosen during the qualitative phase of the project – Likert scale (level of agreement)
(1) The super market has better reputation from the other super markets	
(2) The super market is better than the other super markets	
(3) Feel emotionally closer than the other super markets	
(4) I trust the super market more than the others	
(5) I feel that the super market suits me better	
(6) Shopping at the SM gives me so much pleasure that I would not change it with another	
(7) Is a place that gives me pleasure to do my shopping	
Customer loyalty (LOY)	Lam *et al.* (2004)
(1) Repurchase from the super market	
(2) Saying positive things about the super market to friends	
(3) Recommendation of the super market to a friend or colleague	

Table AI.
Measurement items

Formative constructs	Formative indicators	VIF	Outer weights (outer loadings)	t-Value	p-Value	95% Bca confidence interval	Significance (p < 0.05)
Expectations	EXPECT_1	1.656	0.234 (0.693)	5.715	0.000	[0.152, 0.310]	Yes
	EXPECT_2	1.342	0.287 (0.662)	8.265	0.000	[0.218, 0.356]	Yes
	EXPECT_3	1.198	0.375 (0.695)	10.842	0.000	[0.310, 0.445]	Yes
	EXPECT_4	1.296	0.155 (0.544)	4.814	0.000	[0.092, 0.217]	Yes
	EXPECT_5	1.813	0.378 (0.801)	9.254	0.000	[0.296, 0.458]	Yes
Perceived product quality	PPQ_1	1.236	0.459 (0.761)	17.634	0.000	[0.407, 0.507]	Yes
	PPQ_2	1.627	0.102 (0.584)	3.659	0.000	[0.051, 0.163]	Yes
	PPQ_3	1.858	0.145 (0.653)	5.147	0.000	[0.092, 0.202]	Yes
	PPQ_4	1.740	0.263 (0.697)	9.320	0.000	[0.208, 0.319]	Yes
	PPQ_5	1.142	0.169 (0.491)	8.716	0.000	[0.132, 0.209]	Yes
	PPQ_6	1.249	0.233 (0.603)	11.383	0.000	[0.193, 0.273]	Yes
	PPQ_7	1.154	0.180 (0.500)	9.082	0.000	[0.141, 0.218]	Yes
Perceived service quality	PSQ_1	1.202	0.174 (0.492)	6.280	0.000	[0.121, 0.230]	Yes
	PSQ_2	1.669	0.046 (0.497)	1.456	0.146	[−0.015, 0.109]	No
	PSQ_3	1.627	0.215 (0.552)	6.331	0.000	[0.152, 0.284]	Yes
	PSQ_4	1.216	0.147 (0.517)	4.846	0.000	[0.087, 0.204]	Yes
	PSQ_5	1.479	0.237 (0.629)	7.367	0.000	[0.175, 0.300]	Yes
	PSQ_6	1.270	0.249 (0.627)	7.805	0.000	[0.190, 0.317]	Yes
	PSQ_7	1.426	0.086 (0.556)	2.804	0.005	[0.028, 0.147]	Yes
	PSQ_8	1.209	0.467 (0.734)	13.678	0.000	[0.400, 0.534]	Yes
Perceived value	PV_1	1.288	0.148 (0.575)	5.880	0.000	[0.097, 0.194]	Yes
	PV_2	1.273	0.188 (0.590)	7.488	0.000	[0.138, 0.237]	Yes
	PV_3	1.323	0.619 (0.868)	20.269	0.000	[0.557, 0.675]	Yes
	PV_4	1.224	0.384 (0.695)	12.668	0.000	[0.329, 0.449]	Yes
Brand performance index	BPI_1	1.828	0.274 (0.699)	7.252	0.000	[0.200, 0.347]	Yes
	BPI_2	1.309	0.302 (0.674)	10.366	0.000	[0.245, 0.359]	Yes
	BPI_3	1.328	0.341 (0.721)	10.498	0.000	[0.279, 0.408]	Yes
	BPI_4	1.412	0.121 (0.607)	3.613	0.000	[0.056, 0.185]	Yes
	BPI_5	3.741	0.137 (0.700)	2.653	0.008	[0.035, 0.239]	Yes
	BPI_6	1.883	0.086 (0.636)	2.166	0.030	[0.010, 0.163]	Yes
	BPI_7	3.636	0.197 (0.685)	3.985	0.000	[0.099, 0.294]	Yes

Table AII.
Formative constructs collinearity, outer weights, and significance testing results

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