AN ANALYSIS OF THE NEW NORWEGIAN CUSTOMER SATISFACTION BAROMETER (NEW NCSB) IN A BRAZILIAN SUPERMARKET CONTEXT

UMA ANÁLISE DO BARÔMETRO DE SATISFAÇÃO NORUEGUÊS NO CONTEXTO SUPERMERCADISTA BRASILEIRO

LUIZ ANTONIO SLONGO

Professor de Marketing no Mestrado/Doutorado do PPGA/EA/UFRGS.
Rua Washigton Luiz, 855, Centro – Porto Alegre – RS – CEP 90010-460
E-mail: *laslongo@ea.ufrgs.br*

VALTER AFONSO VIEIRA

Mestre em Administração e Marketing pelo PPGA/EA/UFRGS.
Rua Viuvinha, 69, Conjunto Centauro – Arapongas – PR – CEP 86709-340
E-mail: *valter23@yahoo.com*

ABSTRACT

A lot of consumer satisfaction barometers have been proposed by the literature. However, a dilemma is that the validity, the reliability, and the methods used to assess customer satisfaction and related constructs continue to learn, to adapt, and to improve over time. Thus, this paper tries to understand the modifications and improvements proposed by the new NCSB in Brazil. New NCSB is considers one of the last satisfaction barometers projected by the literature. The results showed support to seven from twelve hypotheses proposed by the model. Conclusions and general comments end the paper.

KEYWORDS

Satisfaction; Loyalty; Barometers; Supermarket; Models.

RESUMO

Muitos barômetros de satisfação de consumidor foram propostos pela literatura. Porém, um dilema é que a validade, a confiança e os métodos que avaliam a satisfação de cliente continuam em processo de adapatação e melhoria com o passar do tempo. Assim, este artigo tenta entender as modificações e melhorias propostas pelo novo NCSB (Barômetro de Satisfação) no Brasil. O novo NCSB é considerado um dos últimos barômetros de satisfação projetado pela literatura. Os resultados, obtidos de uma amostra do setor supermercadista e analisados via modelagem de equações estruturais, mostraram suporte para sete de doze hipóteses sugeridas pelo modelo. Conclusões e comentários gerais finalizam o trabalho.

PALAVRAS-CHAVE

Satisfação; Lealdade; Barômetros; Supermercados; Modelos.

1   INTRODUCTION

According to Martensen et al.(2000),in 1989, Sweden became the first country in the world to have a uniform,cross-company,cross-industry national measurement instrument of customer satisfaction and evaluations of quality of products and services,denominated the Swedish Customer Satisfaction Barometer (SCSB). Since then,SCSB has been adopted and adapted for using in the United States,known as American Customer Satisfaction Index (ACSI) (FORNELL et al.,1996).

In fact,the successful experiences of the SCSB (FORNELL,1992) and the ASCI (FORNELL et al.,1996) indexes have inspired recent moves towards creating an European Customer Satisfaction Index (ECSI) and a Norwegian one (ANDREASSEN; LINDESTAD,1998). As a consequence,other countries have started using similar national indexes to measure the industry progress. In Brazil, that tendency to use satisfaction barometers is not so different,although the country does not have its own national index.

Initiatives for such propose begun to take form in the end of 90's. Initially, Rossi and Slongo (1997) proposed a method for measuring customer satisfaction,basing on a state-of-art review and their practical consulting experience. As a result,subsequent ideas emerged. For example,Cunha Junior et al. (1998) proposed a CBF scheme for measuring costumer satisfaction considering the weights of the attributes evaluated. Urdan and Rodrigues (1998) tested the ACSI model in the Brazilian car industry founding results no so good for the model. Marchetti and Prado (2001a),using PLS,proposed a national satisfaction model for energy industry,founding good results for the model adjustment. Leite et al. (2005) tested the ECSI model in the ERP software segment and found moderate results for that barometer. Moura and Gonçalves (2005) analyzed an adapted version of the ACSI model in the phone segment and found interesting results for the new variables suggested. So,these researchers have been contributing to a better understanding of satisfaction index in Brazil.

In this context,a problem with satisfaction models is that the validity,the reliability and the methods used to measure customer satisfaction and related constructs continue to learn,to adapt,and to improve over time (JOHNSON et al.,2001). For example of that evolution,Marchetti and Prado (2001b) classify satisfaction measurement in three groups. Models based on Paradigm of Disconfirmation,models based on multiple satisfaction indexes and models based on structural equation modeling. Thus,efforts are needed at all levels of society in order to offer additional performance indicator of satisfaction (EKLOF; WESTLUND 1998). Consequently,looking for fulfilling this gap,the New

Norwegian Customer Satisfaction Barometer (new NCSB) was proposed in the literature, trying to overcome the limitations holded by the other models.

Therefore, analyzing from the point of view that countries need of better satisfaction indexes, aligned to the needed of a Brazilian barometer and the verification of new NCSB, this paper has as main goal to understand more the modifications and improvements proposed by the new NCSB, testing it in a supermarket context and using structural equation modeling. Based on this context, the paper is structured as follow. First, it discusses the theory and the hypothesis behind the new NCSB. Second, the method used in the empirical part of the investigation. Next, it presents and explains the main results. In the end, the paper is closed with general discussions.

2 THEORY AND HYPOTHESIS DEVELOPMENT

The new NSCB was built based on several barometers introduced in the last decade. In fact there are a lot of indicators of satisfaction around the word, such as: Swedish Customer Satisfaction Barometer, American Customer Satisfaction Index, Norwegian Customer Satisfaction Barometer, European Customer Satisfaction Index, German Barometer, Danish Customer Satisfaction Index, Korean Customer Satisfaction Index, Hong Kong Customer Satisfaction Index and so forth. This paper will not explain each model individually, since it is not our goal and since it was elucidated with more details by Johnson et al. (2001). The model that will be evaluated in this research is showed in Figure 1. There are differences between it and the original NCSB. Therefore, this essay will explain the inclusion and the exclusion of some constructs during the hypothesis development.

NEW NORWEGIAN CUSTOMER SATISFACTION BAROMETER
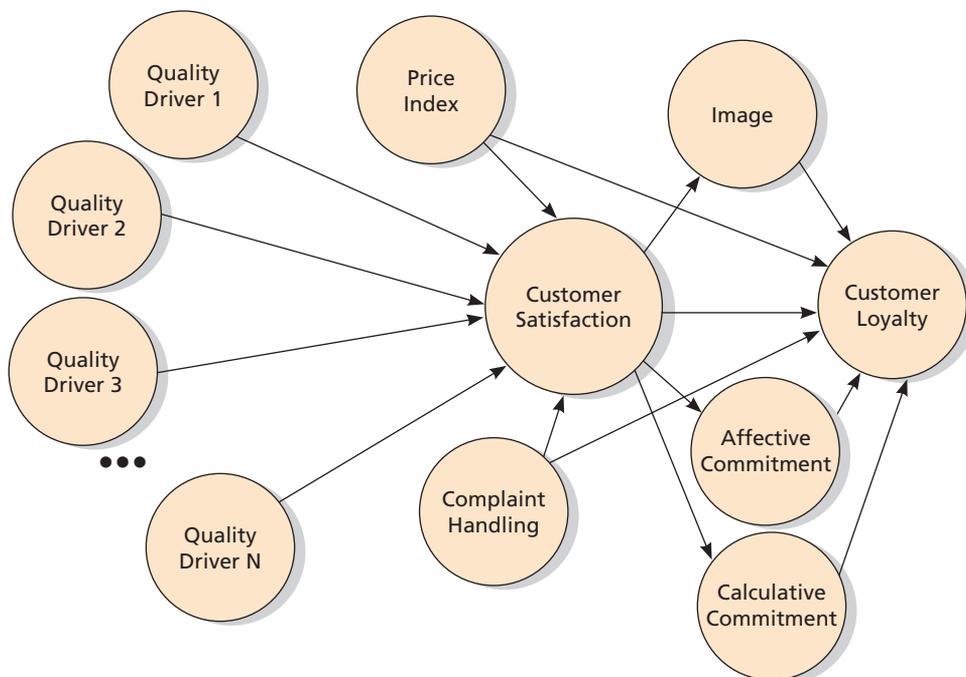
Source: Johnson et al. (2001, p. 231).

Initiating on the company level, image has been defined as "perceptions of an organization reflected in the associations held in consumer memory" (KELLER, 1993). The history of corporate image definition reveals convergence on a gestalt meaning, but one that omits corporate attributes and focuses exclusively on perceiver images (STERN et al., 2001) starts to appear – the transactional process. In this meaning, the process is developed between the brand stimulus and the consumer perceiver. Thus, It is hoped that any consumer starts its purchase process by evaluating the image of something or by remembering the old ones (mainly the positive ones). Therefore, *corporate image*, in the service marketing literature, was early identified as an important factor in the overall evaluation of the service and the company (ANDREASSEN; LINDESTAD, 1997; GRÖNROOS, 1984). Moreover, it is also one of the most important tools for differentiation among competitors.

The cross-sectional nature of national customer satisfaction data means that pre-purchase expectations are collected post purchase, or at the same time that satisfaction is been measured (JOHNSON et al., 2001). However, what is really

being collected is a customer's more recent consumption experience, or customer satisfaction (JOHNSON et al., 2001). As a consequence, corporate image should be modeled as an outcome rather than a driver of satisfaction, because it is recreated post satisfaction exposition. In addition, the effect of satisfaction on corporate image reflects both the degree to which customers' purchase and consumption experiences (CHURCHILL; SUPRENANT, 1982) enhance a product's or service provider's image and the consistency of customers' experiences over time.

On the other hand, key to perceptions of corporate image is the organization-related associations held in a customer's memory (JOHNSON et al., 2001). Since consumer could evoke the past experiences in a future purchase intention, previously image could appear as an explicatory variable of the purchase intention in this context. In turn, the saliented corporate image should affect effective behavioral intentions, such as loyalty. Selnes (1993) hypothesized this result for brand reputation and found consistent results. Other studies also support the fact that corporate image is predictor of loyalty. In fact, Loughlin and Coenders (2002), Kristensen et al. (2000), Leite et al. (2005) and Bloemer and Schroder (2002) found a significant result. Thus, it is expected that corporate image leads directly customer loyalty. Based on these circumstances, the hypotheses are:

H_1: Customer satisfaction has a positive influence on Corporate Image;
H_2: Corporate image has a positive influence on Loyalty.

The next two causal links are regarding complaint handling and customer satisfaction and/or loyalty. Although no prediction is made regarding this relationship, the direction and size of this relationship provides some diagnostic information as to the efficacy of a firm's customer service and complaint handlings systems (FORNELL, 1992). Johnson et al. (2001) believes that *complaint handling*, which is now used in the place of complaint behavior, should have a direct and positive effect on satisfaction as well as loyalty. It is because well-handled complaints could do the client happier, since he/she could be thinking that the company is interested in solve his/her problems, thus complaint handling could leave to satisfaction. In the words of Johnson et al. (2001, p. 230), "complaint behavior should reduce cumulative satisfaction as an overall measure of the customer's experience while satisfaction, in turn, reduces complaint behavior in accord with Hirschman's Theory", appearing to be a reciprocal hypothesis.

Moreover, as a consequence of such handling, it may also be salient that when repurchasing the product or service, or recommending it to others, past complaint handling may also have a direct and positive effect on the cognitive evaluation of the product. Therefore, the complaint handling made in the past

could leave to satisfaction (SMITH et al.,1999),and as a complement,it could leave to loyalty. For that reason,when complaints are well handled,they should be viewed as driver rather than as consequence of satisfaction and loyalty in the new NCSB. Thereby,the next hypotheses are:

H_3: Complaint Handling has a positive influence on Customer Satisfaction;
H_4: Complaint Handling has a positive influence on Customer Loyalty.

Second Johnson et al. (2001),because quality is part of value,the relationship between perceived quality and perceived value is confounded. As an outcome,the authors recommend replacing the perceived value construct with a perceived *price* construct. In fact,in those cases,"where satisfaction evaluations are weaker,or customers have less confidence in their evaluations,price may have more direct effects on loyalty" (JOHNSON et al.,2001,p. 233) and satisfaction. On the other hand,when price is low,customer could increase his/her satisfaction,because he/she could perceive a better value for his/her money. In practical terms,Mittal et al. (1998) perceived the price importance and argue that price is receiving attention in customers' repurchase (loyalty) evaluations. Thus, price could leave to satisfaction and loyalty.

H_5: Price has a positive influence on customer Satisfaction;
H_6: Price has a positive influence on customer Loyalty.

The next construct is *loyalty*. According to Zeithaml et al. (1996) clients more loyalty are better inclined to shop more. In the new NSCB,loyalty still is a consequence of satisfaction. Loyalty reflects the degree to which customers' purchase and consumption experiences directly affect loyalty (JOHNSON et al.,2001; ANDERSON et al.,1994). For Andreassen and Lindestad (1997),who treated customer satisfaction as the accumulated experience of a customer's purchase and consumption experiences,this theoretical relation was supported; however corporate image had a stronger effect on loyalty than on customer satisfaction. Other studies also supported the relation between satisfaction and loyalty (ANDERSON; SULLIVAN 1993; ANDERSON; MITTAL,2000; GRONHOLDT et al.,2000; GUSTAFSSON; JOHNSON,2002; RUST et al. 1995). Thus,it is predictable that:

H_7: Customer Satisfaction has a positive influence on Consumer Loyalty.

Regarding about *commitment*,two proposing relations are suggested in the new NCSB. The two proposing commitment relations are affective and calcula-

179

tive. In fact, relationship commitment picks up on these dimensions that keep a customer loyalty to a product or company even when satisfaction and/or corporate image may be low.

According to Allen and Meyer (1990) moral store-commitment refers to a feeling of obligation to an organization. Mathieu and Zajac (1990) argued that moral commitment is rare in business relationships, thus, calculative and affective commitment seem to be most relevant for business relationships. Calculative commitment is the extent to which a person feels a need to maintain a relationship based on a "cold", rational calculus of benefits in relation to switching costs (HEMETSBERGER; THELEN 2003). Calculative commitment is almost exclusively due to non-psychological exit barriers (HEMETSBERGER; THELEN 2003). In contrast to this, affective commitment is defined as the desire to continue a relationship and expresses a sense of loyalty and belongingness (MORGAN; HUNT, 1994).

According to Johnson et al. (2001), *affective* component is "hotter" or more emotional evaluation, since it captures the affective strength of the relationship that customers have with a brand or company, and the level of involvement and trust that result. The *calculative* commitment serves as psychological barrier to switching, since the calculative component is based on "colder" or more rational and economical aspects of the service. In the new NSCB the satisfaction construct is expected to influence affective and calculative commitment. In addition, commitment constructs are modeled as mediating the effects of satisfaction on loyalty. That relation (satisfaction $\rightarrow$ commitment $\rightarrow$ loyalty) has been study in diverse research (DICK; BASU, 1994; SANTOS, 2001; PRADO; SANTOS, 2004), however, these authors do not treated commitment as affective and calculative. Thereby, based on the evidences quoted previously, we hypothesized that:

H_8: Affective Commitment has a positive influence on Customer Loyalty;
H_9: Calculative Commitment has a positive influence on Customer Loyalty;
H_{10}: Satisfaction has a positive influence on Affective Commitment;
H_{11}: Satisfaction has a positive influence on Calculative Commitment.

Johnson et al. (2001) also recommend the direct effects of *price* and/or *quality* on loyalty be considered. The literature comments that perceived quality is the consumer judgment over the general excellence or over product superiority (ZEITHAML, 1988). In this context, the new NCSB breaks quality up into different quality dimensions that make up the "lens" of the customer. These dimensions are the ones know from SERVQUAL. The authors see it as a matter of choice as to whether one uses an overall quality index (as in the ASCI). Therefore, this

decision should depend on the level of detail and diagnostic information desired. For Johnson etal. (2001,p. 233),

> because satisfaction is an attitude-type evaluation, the degree to which satisfaction will completely mediate the effects of price and quality dimensions on loyalty will be a function of the strength of the satisfaction evaluations.

As a first result, price is supposed to impact loyalty (see H_6), since price is particularly likely to receive increased attention in customers' repurchase (versus satisfaction) evaluations. On the other hand, there are some evidences that quality (as a performance perception) could influence satisfaction, such as: Szmigin and Bourne (1998), Prado and Santos (2004) and Wolfinbarger and Gilly (2003). Based on this discussion, the next hypothesis is:

H_{12}: Quality has a positive influence on Customer Satisfaction.

As a conclusion and according to Johnson etal. (2001), the new barometer of satisfaction: 1. replaces the value construct with a "pure" price construct; 2. replaces customer expectations with corporate image as a consequence of satisfaction; 3. includes two aspects of relationship commitment, as well as corporate image as drivers of loyalty; 4. incorporates the potential for direct effects of price on loyalty; and 5. includes complaint handling as driver of both satisfaction and loyalty. Therefore, the final new NCSB proposed is showed in Figure 1.

3   RESEARCH DESIGN AND METHOD

The service industry was used in this study. It was preferred because such contexts enable consumers to observe and evaluate behaviors of service providers and are consistent with the behavioral focus of the satisfaction and loyalty construct.

- *Sample*: for calculate the number of the sample, the theory suggests between 5 and 10 cases for each variable in the scale (HAIR et al., 1998). Thus, as the scales use approximately 40 variables, the sample was expected to have a minimum near 40 x 5 = 200 observations. Based on this consideration, 264 people evaluated supermarket system. A questionnaire was posted in the internet and sent to a e-mailing list, i.e. the same procedure of Freire and Nique (2005). The sample was characterized as non-probabilistic and by convenience (MALHOTRA, 1996).

- *Measures*: the measures were translated to Portuguese using back-translation (BEHLING; LAW,2000). After that,the questionnaire was tested with 22 people in order to verify the understanding and the meaning of the questions. Some questions were modified and a final version was built. The measures were based on likert type scale,were measured in a 10-point and all of them where obtained from Johnson et al. (2001). Customer satisfaction varied from low to high and contained 3 items. Price was measured in a 10-point, varying varied g from low to high and contained 3 items. Corporate image varied from low to high and contained 4 items. Complaint behavior varied from probably to unprobably and contained 2 items. Affective commitment varied from low to high,probably and unprobably and good to bad. It contained 3 items. Calculative commitment varied from low to high,probably and unprobably and good to bad. It contained 4 items. Loyalty varied from low to high,and contained 3 items. Quality varied from low to high,probably and unprobably and good to bad. It contained 18 items. The five dimensions of quality employed were Tangibles,Reliability,Responsiveness,Assurance and Empathy. In addition,an overall quality index was implemented.

4   RESULTS

For the hypothesis test,structural equation model was used. Thus,for such propose,the data were pre-analyzed according to some criteria for better purification. These criteria are described under. The Missing values found were below 10% and they were substituted by means. The variable that got the maximum in missing value was 1.9%. Outliers were verified according two criteria: one is based on score Z,where values above ±3 were deleted (5 cases),and the second one was based on Mahalanobis distance D ,where values under $p < 0.001$ were deleted (none case). Therefore,the final sample was 259 observations.

Normality was checked in terms of kurtosis (±10), skweness (±3), and Kolmogorov Smirnoff test($p < 0.05$). Multicolinearity was assessed using Pearson correlations,where values above ±0,90 were excluded because they could mean the same variable. Based on multicolinearity,one variable of loyalty was excluded ($r = 0.93$; $p < 0.01$; loyalty 1) and another one of calculative commitment was excluded ($r = 0.97$; $p < 0.01$; image 2). Thus,after these initial check procedures, multivariate analysis was used.

First of all,exploratory factor analysis (EFA) was used to evaluate the unidimensionality of the constructs (DUNN et al., 1994). The goal utilizing EFA was not only to define better variables that compose the factor (in terms of loads),but

also to assess if the constructs are unidimensional or multidimensional. Thus, the criteria for excluding the variables in the matrix was loadings < 0.40. For extraction, principal components was used and, for rotation, varimax method was utilized (eigenvalues > 1). Table 1 shows some interesting results from that analysis.

According to the data, calculative commitment was the only construct which had a value under α = 0.70 (HAIR et al., 1998), and because of that low reliability it was excluded from the model. As a comparative, that construct also had poor performance in the Johnson et al. (2001) study compared to the others'. In fact, calculative commitment had values few above the limit of 50% (in average communality). In addition, price, which in the questionnaire had 3 indicators, was verified to be multidimensional. Moreover, quality, which in the questionnaire had the 5 dimensions, had empirically just 3 dimensions, which did not frame perfectly in any one suggested by Parasuraman et al. (1988).

TABLE 1

UNIDIMENSIONALITY TEST USING EXPLORATORY FACTOR ANALYSIS

VARIABLES BEFORE EFA	DIMENSIONS AFTER EFA	CONSTRUCT	KMO	BARTLETT (P < 0.01)	ALPHA (α)	VE%
4	1	Image	0.85	.000	0.911	78
4	1	Affective	0.80	.000	0.856	70
2	1	Complain	0.50	.000	0.700	77
3	1	Satisfaction	0.70	.000	0.843	76
2	1	Loyalty	0.50	.000	0.747	80
18	3	Quality	0.94	.000	0.940	58*
2	1	Calculative	0.50	.000	**0.420**	63
3	2	Price	0.48	.000	0.843	57**

Source: Authors; KMO = Kaiser Test; VE = Variance Extracted in AFE.

* The first dimension only, adding the second dimension = 66%, and the third dimension = 72%.

** The first dimension, adding the second dimension = 91%.

Second, after using exploratory factor analysis, some constructs were evaluated according to confirmatory factor analysis (CFA). Thus, constructs from Table 1 were assessed to be confirmed. Calculative Commitment (low alpha), Price (just two items), Handling-Complain (two items), Loyalty (two items) were not evaluated. It is because the models with less than three indicators by construct are undefined.

Then, the fits for the other constructs in CFA were: Affective ($\chi^2 = 30.582$; df $= 5$; AGFI $= 0.903$; GFI $= 0.952$; CFI $= 0.946$; RMSEA $= 0.141$; $p = 0.000$), Quality ($\chi^2 = 341$; df $= 14$; AGFI $= 0.548$; GFI $= 0.774$; CFI $= 0.822$; RMSEA $= 0.301$; $p = 0.000$), and Image ($\chi^2 = 21.433$; df $= 5$; AGFI $= 0.927$; GFI $= 0.963$; CFI $= 0.976$; RMSEA $= 0.113$; $p = 0.001$).

Third, discriminant validity was performed one-at-time chi-squared difference tests for the largest cross-construct correlations (used, for instance, in Hartline and Ferrel 1996). The values for discriminant validity found were: affective-satisfaction ($\chi^2_{diff} = 32.76$; $p < 0.01$); affective-quality ($\chi^2_{diff} = 29.73$; $p < 0.01$); affective-image ($\chi^2_{diff} = 12.85$; $p < 0.01$); image-quality ($\chi^2_{diff} = 14.50$; $p < 0.01$); image-satisfaction ($\chi^2_{diff} = 25.79$; $p < 0.01$) and quality-satisfaction ($\chi^2_{diff} = 22.59$; $p < 0.01$). According to the values found and a cut-off of 3,84 (BAGOZZI et al., 1991), the discriminant validity was found for all constructs. Discriminant validity examine the degree to which the operationalization is not similar to (diverges from) "other operationalizations that it theoretically should be not similar" (TROCHIM, 2002).

Fourth, convergent validity was also performed using confirmatory factor analysis. Thus, the t-values were evaluated. Convergent validity is supported when t-value is above 1.96 ($p < 0.05$). This procedure was also used in other studies (ESPINOZA et al., 2005; MOURA; GONÇALVES, 2005). As a result, the convergent validity was supported for all constructs evaluated (image, affective, satisfaction, and quality).

Fifth, the Table 2 presents the composite reliability (CR), the average of variance extracted (AVE) and the correlations among the constructs. The CR and AVE are also measures of reliability and they are comument used in structural equation models. The values were all significant at $p < 0.01$ (values indicated for AVE and CR are ≥ 0.50 and ≥ 0.70 (HAIR et al., 1998)). After that, multicolinearity was assessed and none construct had a correlation above ± 0.90, which could characterize the same variables, used in Prado and Santos (2004).

TABLE 2

COMPOSITE RELIABILITY, AVERAGE OF VARIANCE EXTRACTED AND CORRELATION

MEASURE	CR	AVE	MEAN	IMAGE	AFFECTIVE	COMP.	SAT.	LOY.	QUAL.	PRICE
Image	0.92	0.74	7.5123	1						
Affective	0.86	0.61	6.5834	.646	1					
Complaint	*	*	7.4813	.533	.768	1				
Satisfaction	0.86	0.68	7.0431	.769	.818	.772	1			
Loyalty	*	*	6.1356	.587	.761	.680	.742	1		
Quality	0.90	0.59	7.3123	.596	.717	.842	.779	.630	1	
Price	*	*	6.6565	.598	.693	.676	.749	.641	.615	1

Source: Authors; * construct with less then 3 indicators in CFA; mean of a scale of 10 points. All correlations are significant at the $p < 0.01$ level (2-tailed).

After discussing the validity and confiability of the scales and construct used in the research, the global model was tested. Global fit indicates that the model needs to be adjusted for the data before testing the hypothesis. Without acceptable level of fits on the data, the path coefficients cannot be assessed.

Thus, AMOS software was used and the values for the *global* model fits were: $\chi^2 = 57.425$; df = 8; $\chi^2/df = 7.17, p < 0.000$; AGFI = 0.81; GFI = 0,946; NFI = 0.965; IFI = 0.970; CFI = 0.97; TLI = 0.921; IFI = 0.970; RMSEA = 0.155. As a conclusion, the poor fits were RMSEA, χ^2/df, and AGFI, which were above the minimum value indicated by theory of 0.08 and 0.90, respectively (HAIR et al., 1998). Since some convergence of the data was found and since some fits indicated good values, the path model was estimated. The estimation method used was maximum likelihood. To do that, path analysis was used. Path analysis uses the average of the constructs, where it is a predictive contribution in a hierarquical set of relationship (JÖRESKOG; SÖRBOM, 1989). Table 3 shows the final paths coefficients, beta, beta adjusted weights, t-values and hypothesis status. Results from each hypothesis are discussed ahead.

TABLE 3

FINAL PATH COEFFICIENTS AND HYPOTHESIS TEST

HYPOTHESIS	β	β STANDARD.	T-VALUE	ERROR	p	HYPOTHESIS
Satisfaction → Image	0.752	0.769	19.322	0.039	0.000	H_1: supported
Satisfaction → Loyalty	0.317	0.237	2.617	0.121	0.009	H_7: supported
Satisfaction → Affective	0.890	0.818	22.862	0.039	0.000	H_{10}: supported
Price → Loyalty	0.114	0.096	1.599	0.072	0.110*	H_6: not supported
Price → Satisfaction	0.345	0.386	8.794	0.039	0.000	H_5: supported
Image → Loyalty	0.048	0.035	0.572	0.083	0.568*	H_2: not supported
Complain → Loyalty	0.144	0.114	1.712	0.084	0.087*	H_4: not supported
Complain → Satisfaction	0.178	0.188	2.930	0.061	0.003	H_3: supported
Affective → Loyalty	0.489	0.398	5.493	0.089	0.000	H_8: supported
Quality → Satisfaction	0.370	0.383	6.381	0.058	0.000	H_{12}: supported

5 HYPOTHESES DISCUSSION

The first *hypothesis* was supported in this research. It means that customer satisfaction has a positive influence on corporate image. Based on the transaction driven nature of satisfaction experience, several writers claim that corporate image is a function of the cumulative effect of customer (dis)satisfaction (FORNELL, 1992; JOHNSON; FORNELL, 1991). It could be an explanation for the hypothesis support. Moreover, it suggested that when more the customer is satisfied, more this affective aspect will create a positive corporate image in the customer cognitive system. In fact, corporate image is established and developed in the consumers' mind through communication and experience (ANDREASSEN; LINDESTAD, 1997). As a practical terms, it could mean that a determinate degree satisfaction (e.g. with a fast attendance) could generate a positive corporate image.

The *second* hypothesis stated as corporate image has a positive influence on loyalty. It was not supported. Contrarily, Andreassen and Lindestad (1997) found in their study that corporate image had not only a significant effect, but also a stronger effect on loyalty than customer satisfaction. From this study, the same cannot be said. In fact, image has not an effect on loyalty. A possible explanation

is that since supermarket segment is a very competitive market and the products price are very similar among firms, a supermarket having only positive/negative image could not influence the repurchase probability. Place availability and attendance may be better alternatives of leaving to loyalty than image. Mainly place availability, because sometimes the consumer cannot have time to go to another supermarket of his/her preference. In addition, image in supermarket segment could not have a so discriminant (e.g. Wall Martx Carrefour) power as in other segments (i.e. fast-food). Hence, it could be another explanation to the fact that H$_2$ failed.

The *third* hypothesis comments that complaint handling has a positive influence on customer satisfaction. This hypothesis was supported in the positive relation. It could mean that when the consumer makes his/her complain he/she could become happier, because this complain could be perceived as a suggestion to the company improves its quality/performance (or perceived as relief by customer). Since then, the consumer could think that this suggestion is in fact contributing not only for the company improving its service, but also for other clients (inclusive his/her) in the future customer receiving a better product. Therefore, the assumption made by Johnson et al. (2001) appears to be correct, although they did not found empirical support. It means that the consequence of such handling managing should have a more positive effect on satisfaction ($\beta = 0.19$).

The *fourth* hypothesis was not supported. It means that a well-handled complaint does not have a positive effect on loyalty. Thus, complaint managing does not mean that the consumer will repurchase the product/service. This causal result is in according to the find of Johnson et al. (2001), and could mean that making a complaint might indicate that the consumer knows that (when complaing) the organization won't give importance to that idea. On the contrary, if the consumers feel that the organization will review its complaint careful, it could be a clue of repurchase.

The *fifth* hypothesis believes that price leaves to satisfaction. It was supported. Consumer could think that a good price could help/facilitate in his/her decision making process. When the consumer perceives that he/she is paying a fair price for the product, this purchase could generate better affective positive responses. These responses, in turn, could leave to satisfaction. This explanation could be similar to the benefit-value proportion proposed (SIRDESHMUKH et al., 2002), where the consumer knows that he/she is receiving a better value for the money spending. As a complement, the relation stated that price has a positive influence on customer loyalty (*sixth* hypothesis) was not supported. An interesting interpretation of the results is that most of the relations suppose to be antecedent of loyalty, in fact, failed in their significance. However, even without the support

187

of theses results, the R-squared of loyalty was 62% (cfe. Table 4). Summarizing, satisfaction and handling complain are the only drivers of satisfaction. Thus, it is recommended that the relation of image, handling complain and prince may be better explored in future studies, since none of them were significant in their relations.

The *seventh* hypothesis is a classical hypothesis. It believes that customer satisfaction has a positive influence on consumer loyalty. According to the results, this relation is supported and the beta regression is 0.27 ($p < 0.01$). The hypothesis result follows the same results from other studies (ANDERSON et al., 1994; ANDERSON; SULLIVAN,1993; ANDERSON; MITTAL,2000; BRUHN 2003; GUSTAFSSON; JOHNSON 2002; GRONHOLDT et al.,2000; RUST et al.,1995) and demonstrates the importance of the supermarket segment invest on this construct.

The hypothesis number *eight-to-eleven* analyzes commitment. Affective commitment (more emotional) and calculative commitment (more rational) are supposed to influence customer loyalty. The first result about commitment is that the factor loads and alpha cronbach value for calculative commitment was low. Thus, since the alpha value ($\alpha = 0.42$) was below the indicated by theory (HAIR et al.,1998), the construct calculative commitment was excluded. Thereby, future research could generate better item for measuring the calculative commitment. The second result is that some hypotheses (8 and 10) were supported. It means that H_8 presents the idea that affective commitment could leave to loyalty, and H_9 presents that satisfaction influences positively affective commitment. It appears that affective commitment arises as an important construct in the satisfaction barometers, since satisfaction and loyalty are antecedents and consequents of commitment. Reforcing this conclusion, in the satisfaction-affective commitment, the beta value achieve a value of 0,77 (adjusted).

Although not hypothesized in the same way of this study, Prado and Santos (2004) found a significant relation from the affective positive H_{5a} (and negative H_{5b}) response to satisfaction. For these authors, affective positive responses are the feelings that the costumers develop (that can be positive or negative) in situations of buying. Therefore, it could be a strong indicative that affective response construct should play an important role in satisfaction/loyalty models, and it could be relatated to affective commitment construct.

The *twelfth* hypothesis suggests that quality has direct a positive influence on customer satisfaction. See also other studies, such as: Kristensen et al. (2000) and Loughlin and Coenders (2000). The only problem with this relation was on the construct per se. While the causal relation was supported, Johnson et al. (2001) had problems with the dimensions of quality used. This work also had the same problems. In fact, from the five dimensions that were supposed to appears,

justthree appeared corresponding to the 72%of variance explained. Although the variance explained could be considered good,the dimensions found appeared confused. Thus,itwas notpossible to rename them. According to the path,that causal relation was supported and itis in agreementwith the disconfirmation paradigm,which indicates the constructquality as an antecedentof satisfaction (FORNELL,1992,FORNELL etal.,1996; OLIVER,1980,1997).

In addition to the hypothesis test,the R-squared of the constructs was verified (see Table 4 and for a comparative with Johnson etal. (2001) see Table 5). According to the data,good values were found in this study. Satisfaction,for example,had a R^2 = 73%. Itmeans that73%of the variance of satisfaction construct is explained by other exogenous constructs,such as,handling complain, quality and price. Affective (R^2 = 67%),image (R^2 = 59%) and loyalty (R^2 = 63%) also obtained good values.

TABLE 4

SQUARED MULTIPLE CORRELATIONS

ANTECEDENTS	CONSTRUCT-ENDOGENOUS	R^2
Handling complain, Quality and Price	→ Satisfaction	0.733
Satisfaction	→ Affective Commitment	0.670
Satisfaction and Affective commitment	→ Loyalty	0.626
Satisfaction	→ Image	0.591

Source: Authors.

TABLE 5

SQUARED MULTIPLE CORRELATIONS FROM JOHNSON ET AL. (2001) STUDY

CONSTRUCT-ENDOGENOUS	AIRLINES	BANKS	BUSES	GAS STATIONS	TRAINS
Satisfaction	0.530	0.564	0.564	0.491	0.531
Affective Commitment	0.275	0.425	0.199	0.244	0.224
Calculative Commitment	0.024	0.071	0.069	0.059	0.074
Loyalty	0.625	0.622	0.463	0.563	0.587

Source: Authors.

6   CONCLUSIONS

The new NCSB is a new type of market-based performance measure for firms. As it is new, countries need to evaluate its features and performance, because it represents a step forward in the evolution of national satisfaction indicators. Thus, this paper tried to do an initial test for that. Therefore, some results deserve to be highlight.

First, some variables in the scale had problems in their loads and in their dimensions. For instance, calculative commitment paths could not be tested because of its low alpha value. Consequently, this construct was retired from the model. In addition, based on dimensions found, the price (3 items and 2 dimensions) and the quality constructs (18 items, 5 dimensions hypothesized by theory and 3 dimensions found empirically) need to be reviewed in terms of scale and dimensionality. It is important to say that Johnson et al. (2001) also had troubles with the dimensions of quality used (based on SERVQUAL). Besides, loyalty construct lacked the number of necessary items in its dimension to use CFA. It is because from the 3 items proposed to measure loyalty, one had a high correlation with another and was excluded, disabling, consequently, the use of CFA.

Second, in terms of discriminant analysis, composite reliability and variance extracted this study found good results, indicating that the high reliability of some measures and the discriminant power existed.

Third result is that price may have a direct effect on loyalty over and above its indirect effect via satisfaction; this is because satisfaction, as an attitude-type construct, may only partially mediate the effect of quality and price on loyalty (JOHNSON et al., 2001). The findings diverge on that argument. Price is a significant antecedent of satisfaction; however, price is not a significant antecedent of loyalty, indicating that satisfaction could not meditate the price-loyalty relation.

Fourth, complaint handling appeared as an interesting variable for future studies to analyze, since it did not was supported in the five segments studied by Johnson et al. (2001) and it was supported in this study. Moreover, the valency of the relation was found in a positive way (as expected). Therefore, this construct, when well managed, could help marketing professionals to achieve better satisfaction results.

Fifth, Johnson et al. (2001, p. 242) argue that "the new NSCB model explains significantly more variance in loyalty than other national index models [...]". In this context, loyalty R-squared in this study was 62%, and in Johnson et al's study it changed from 46% to 62% on the five segments. Comparing with other

studies, we have interesting results. For instance, in testing ECSI model, Leite et al. (2005) did not present the R-squared values; in testing the ACSI model, Urdan and Rodrigues (1997) found a value of 86% to loyalty and in testing the adapted ACSI, Moura and Gonçalves (2005) found a value of 60% to loyalty. In summarizing, concluded something more affirmative from these initial results could be dangerous, so this research prefers to be more cautious in assume any position. From that analysis, any future research could re-test the ASCI or ECSI model using affective commitment as plus, since it was found to be a driver of loyalty. Thus, it could alterate the R-squared of such barometers.

In the end and limiting the conclusion to the sample studied, the general findings concluded that (1) quality is more important than price and complaint in determining customer satisfaction, (2) satisfaction plays an important role in determining affective commitment, (3) satisfaction and affective commitment, rather than price and image, are antecedents of customer loyalty, and (4) customer satisfaction has a positive influence on corporate image.

REFERENCES

ALLEN, N. J.; MEYER, J. P. The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology,* v. 63, n.1, p. 1-18, Mar. 1990.

ANDERSON, E. W.; FORNELL, C.; LEHMANN, D. R. Customer satisfaction, market share, and profitability: findings from Sweden. *Journal of Marketing,* v. 58, n. 3, p. 53-66, July 1994.

ANDERSON, E. W.; MITTAL, V. Strengthening the satisfaction profit chain. *Journal of Service Research,* v. 3, n. 2, p. 107-120, Nov. 2000.

ANDERSON, E. W.; SULLIVAN M. The antecedents and consequences of customer satisfaction for firms. *Marketing Science,* v. 12, n. 2, p. 125-143, Spring 1993.

ANDREASSEN, T. W.; LINDESTAD, B. Customer loyalty and complex services: the impact of corporate image on quality, customer satisfaction and loyalty or customers with varying degrees of service expertise. *International Journal of Service Industry Management,* v. 8, n. 4, p. 1-33, 1997.

_____. Customer loyalty and complex services: the impact of corporate image on quality, customer satisfaction and loyalty for customer with varying degrees of service expertise. *International Journal of Service Industry Management,* v. 9, n. 1, p. 7-23, 1998.

BAGOZZI, R. P., YI, Y.; PHILIPS, L. W. Assessing construct validity in organizational research. *Administrative Science Quarterly,* v. 36, n. 3, p. 421-458, Sept. 1991.

BEHLING, O.; LAW, K. S. *Translating questionnaires and other research instruments.* Thousand Oaks: Sage Publications, 2000. v. 133.

BLOEMER, J.; SCHRODER, G. Store satisfaction and store loyalty explained by customer and store related factors. *Journal of Consumer Satisfaction, Dissatisfaction and Complaint Behavior,* Vancouver, Washington State University, v. 15, 2002.

BRUHN,M. Internal service barometers: conceptualization and empirical results of a pilot study in Switzerland. *European Journal of Marketing*,v. 37,n. 9,p. 1187-1204,2003.

CHURCHILL,G. A.; SUPRENANT,C. An investigation into the determinants of customer satisfaction. *Journal of Marketing Research*,v. 19,p. 491-504,Nov. 1982.

CUNHA JUNIOR,M. V. M.; BORGES JUNIOR,A. A.; FACHEL,J. M. G. Esquema CBF para a mensuração da satisfação de clientes: uma proposta conceitual e prática. In: ENCONTRO NACIONAL DA ANPAD,1997,Foz do Iguaçu. *Anais...* Foz do Iguaçu: Anpad,1998.

DICK,A. S.; BASU,K. Customer loyalty: toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*,v. 22,n. 2,p. 99-113,Winter 1994.

DUNN,S. C.; SEAKER,R. F.; WALLER,M. A. Latent variable in business logistics research: scale development and validation. *Journal of Business Logistics*,v. 15,n. 2,p. 145-173,1994.

EKLOF,J. A.; WESTLUND,A. Customer satisfaction index and its role in quality management. *Total Quality Management*,v. 4,n. 5,p. S80-S85,1998.

ESPINOZA,F.; ANGELO,A. C.; LIBERALI,G. A influência da atmosfera de varejo sobre os consumidores. *Revista de Administração da USP*,v. 40,n. 2,p. 109-122,abr./maio/jun. 2005.

FORNELL,C. A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*,v. 6,n. 1,p. 6-21,Jan. 1992.

FORNELL C. et al. The American Customer Satisfaction Index: nature,purpose,and findings. *Journal of Marketing*,v. 60,n. 4,p. 7-18,Oct. 1996.

FREIRE,K. M.; NIQUE,W. M. A influência do envolvimento com o produto e do comprometimento com a marca na lealdade à marca. *Proceedings of Anpad*,Brasília,p. 1-16,2005.

GRONHOLDT,L.; MARTENSEN,A.; KRISTENSEN,K. The relationship between customer satisfaction and loyalty: cross-industry differences. *Total Quality Management*,v. 11,p. S509-S515,July 2000.

GRÖNROOS,C. A service quality model and its marketing implications. *European Journal of Marketing*,v. 18,n. 4,p. 36-44,1984.

GUSTAFSSON,A.; JOHNSON,M. D. Measuring and managing the satisfaction-loyalty-performance links at Volvo. *Journal of Targeting,Measurement and Analysis for Marketing,* v. 10,n. 3,p. 249-258,2002.

HAIR,J. et al.. *Multivariate data analysis*. New Jersey: Prentice Hall,1998.

HEMETSBERGER,A.; THELEN,E. What characterizes truly loyal online shoppers? Modeling the influence of variety seeking,satisfaction,trust and involvement on online-store commitment. *European Advances in Consumer Research*,v. 6,p. 361-367. Available in: <http://acrwebsite.org/volumes/display.asp?id=11293>. Acessed in 31/November,2003.

JOHNSON,M. D.; FORNELL,C. A framework for comparing customer satisfaction across individuals and product categories. *Journal of Economic Psychology*,v. 12,n. 2,p. 267-286,June 1991.

JOHNSON,M. D. et al. The evolution and future of national customer satisfaction index models. *Journal of Economic Psychology*,v. 22,n. 2,p. 217-245,Apr. 2001.

JÖRESKOG,K. G.; SÖRBOM,D. *Lisrel 7*: a guide to the program and applications. 2nd ed. Chicago: SPSS Inc,1989.

KELLER,K. Conceptualizing,measuring and managing customer based equity. *Journal of Marketing*, v. 57,n. 1,p. 1-23,Jan. 1993.

KRISTENSEN,K.; MARTENSEN,A.; GRONHOLDT,L. Customer satisfaction measurement at post Denmark: results of application of the European customer satisfaction index methodology. *Total Quality Management*,v. 11,n. 7,p. s1007-s1016,2000.

LEITE,R. S.; ELIAS,C. L.; SUNDERMANN,J. O índice europeu de satisfação de clientes (ECSI): um estudo empírico de sua aplicação em uma empresa brasileira fornecedora de ERP. In: ENCONTRO NACIONAL DA ANPAD,2005,Brasília. *Anais...* Brasília: Anpad,2005.

LOUGHLIN. O. C.; COENDERS,G. Application of the European Customer Satisfaction index to postal services: structural equation models versus partial leastsquares. *Working Paper,*Economy Department,Universitatde Girona,Spain,p. 1-28,Sept. 2000.

MALHOTRA,N. K. *Marketing Research*: an applied orientation. Englewood Cliffs: Prentice Hall, 1996.

MARCHETTI,R. Z.; PRADO,P. H. M. Avaliação da satisfação do consumidor utilizando o PLS: um modelo aplicado ao setor elétrico brasileiro. In: ENCONTRO NACIONAL DA ANPAD,2001, Campinas. *Anais...* Campinas: Anpad,2001a.

_____. Um *tour* pelas medidas de satisfação do consumidor. *Revista de Administração de Empresas,* v. 4,n. 4,p. 56-67,out./dez. 2001b.

MARTENSEN,A. etal. Measuring studentoriented quality in higher education: application of the ECSI methodology. *Sinergie Rapporti di Ricerca,*n. 9,p. 372-383,2000.

MATHIEU,J. E.; ZAJAC,D. M. A review and meta-analysis of the antecedents,correlates and consequences of organizational commitment. *Psychological Bulletin,*v. 108,issue 2,p. 171-194, Sept. 1990.

MITTAL,V.; ROSS,W. T.; BALDASARE,P. M. The asymmetric impactof negative and positive attribute-level performance on overall satisfaction and repurchase intentions. *Journal of Marketing,* v. 62,n. 1,p. 33-47,Jan. 1998.

MORGAN,R M.; HUNT,S. D. The commitment-trusttheory of relationship marketing. *Journal of Marketing,*v. 58,n. 3,p. 20-38,July 1994.

MOURA,A. C.; GONÇALVES,C. A. Modelo de satisfação ACSI modificado no setor de telefonia móvel. *Revista de Administração de Empresas,*v. 45,p. 72-85,2005. Edição especial de Minas Gerais.

OLIVER,R. L. A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research,*v. 17,n. 4,p. 460-469,Nov. 1980.

_____. *Satisfaction*: a behavioral perspective on the consumer. New York: McGrawHill,1997.

PARASURAMAN,A.; ZEITHAML,V.; BERRY,L. L. Servqual: a multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing,*v. 64,n. 1,p. 12-40,1988.

PRADO,P. H. M.; SANTOS,R. C. Satisfação,qualidade no relacionamento e lealdade entre clientes e bancos de varejo. In: ENCONTRO EMA DA ANPAD,2004,Porto Alegre. *Anais...* Porto Alegre: Anpad,2004.

ROSSI,C. A. V.; SLONGO,L. A. Pesquisa de satisfação de clientes: o estado da arte e proposição de um método brasileiro. In: ENCONTRO NACIONAL DA ANPAD,1997,Foz do Iguaçu. *Anais...* Foz do Iguaçu: Anpad,1997.

RUST,R. T.; ZAHORIK,A. J.; KEININGHAM,T. L. Return on quality (ROQ): making service quality financially accountable. *Journal of Marketing,*v. 59,n. 2,p. 58-70,1995.

SANTOS,C. P. *Impacto do gerenciamento de reclamações na confiança e lealdade do consumidor,no contexto de trocas relacionais de serviços*: construção e teste de um modelo teórico. 2001. Tese (Doutorado em Administração) – Universidade Federal do Rio Grande do Sul,Porto Alegre,2001.

SELNES,F. An examination of the effectof productperformance on brand reputation,satisfaction and loyalty. *European Journal of Marketing,*v. 27,n. 9,p. 19-35,1993.

SIRDESHMUKH, D.; SINGH, J.; SABOL, B. Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, v. 66, n. 1, p. 15-37, Jan. 2002.

SMITH, A. K.; BALTON, R. N.; WAGNER, J. A model of customer satisfaction with service encounter involving failure and recovery. *Journal of Marketing*, v. 36, n. 3, p. 356-372, Aug. 1999.

STERN, B.; ZINKHAN, G. M.; JAJU, A. Marketing images: construct definition, measurement issues, and theory development. *Marketing Theory*, v. 1, n. 2, p. 201-224, 2001.

SZMIGIN, I.; BOURNE, H. Consumer equity in relationship marketing. *Journal of Consumer Marketing*, v. 15, n. 6, p. 544-557, 1998.

TROCHIM, W. M. Research methods knowledge base. 2002 Disponível em: <http://www.social-researchmethods.net/kb/>. Accesso em: jun. 2005.

URDAN, A. T.; RODRIGUES, A. R. O modelo do índice de satisfação do cliente norte-americano: um exame inicial no Brasil com equações estruturais. In: ENCONTRO NACIONAL DA ANPAD, 1998, Foz do Iguaçu. *Anais...* Foz do Iguaçu: Anpad, 1998.

WOLFINBARGER, M; GILLY, M. C. e-TailQ: dimensionalizing, measuring and predicting e-tail quality. *Journal of Retailing*, v. 79, n. 3, p. 183-198, Fall 2003.

ZEITHAML, V. A. Consumer perception of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing*, v. 52, n. 3, p. 2-23, July 1988.

ZEITHAML, V. A.; BERRY, L.; PARASURAMAN, A. The behavioral consequences of service quality. *Journal of Marketing*, v. 60, n. 2, p. 31-47, April 1996.