Original Article

Cognition and affect: A factors combination in clients dissatisfied with restaurants

Received (in revised form): 30th June 2010

Beatriz Moliner Velázquez

is Assistant Professor in the Department of Marketing and Market Research at the University of Valencia, where she earned her PhD in business Administration and Management. Her studies are published in several international journals, for example *International Review of Retail, Distribution and Consumer Research* or *International Journal of Service Industry Management*. Her current research interests are satisfaction/dissatisfaction, complaining behaviour and loyalty consumer.

Irene Gil Saura

is Professor in the Department of Marketing and Market Research at the University of Valencia. She has been a visitant scholar at several European universities and has published in several international journals, for example *International Journal of Retail & Distribution Management*, *Industrial Marketing Management* or *Annals of Tourism Research*. She is currently interested in service marketing, logistics, consumer behaviour and retailing.

Gloria Berenguer Contrí

is Professor in the Department of Marketing and Market Research at the University of Valencia. Her studies are published in several international journals, for example *International Review of Retail, Distribution and Consumer Research* or *International Journal of Service Industry Management*. Her current research interests are satisfaction, value, loyalty and children's consumer behaviour.

ABSTRACT On the basis of an extensive literature review of the principal theories that explain consumer dissatisfaction, we try to analyse the effect of a set of cognitive and affective variables on dissatisfaction. Cognitive variables examined were performance, expectations, disconfirmation, causal attributions and inequity. Negative affects were considered as emotional variables. We developed an empirical research to examine customer dissatisfaction with restaurants. The results indicate that the best combination of variables to estimate dissatisfaction judgements is 'performance–inequity–norms disconfirmation–attributions'. Therefore, dissatisfaction has a greater cognitive content because negative affects have no significant influence.

Journal of Retail & Leisure Property (2010) **9**, 319–335.

doi:10.1057/rlp.2010.15

Correspondence:

Beatriz Moliner Velázquez
Faculty of Economics,
Department of Marketing,
University of Valencia,
Avda. Naranjos, s/n,
Valencia 46022, Spain
E-mail: Beatriz.Moliner@uv.es

Keywords: dissatisfaction; performance; expectations; attribution; equity; affect; restaurants

INTRODUCTION

Consumer satisfaction continues to be of significant interest in the academic and business world. Academic study initially focused on the influence of expectations on satisfaction. From the business perspective, the interest in studying satisfaction stems from the creation of macroeconomic indexes. Nowadays, however, research into both the origin and consequences of satisfaction is a constant feature in different areas of marketing (Matzler *et al*, 2004).

According to the theory, satisfaction is determined by the positive and negative evaluations consumers make after a shopping and/or consumption experience. In general, satisfaction is understood as a bipolar variable with an intensity that falls between the two extremes of satisfaction and dissatisfaction (Mittal *et al*, 1999). However, despite spectacular growth in dissatisfaction research in the 1980s, the literature on satisfaction, as a positive judgement, is more extensive.

Review of the theory shows another approach, shared by a minority of authors who consider satisfaction and dissatisfaction to be independent constructs. According to this approach, conceptual differences between the two constructs suggest that dissatisfaction may be a response formed on the basis of different variables from the antecedents of satisfaction (Prakash, 1991; Giese and Cote, 2000). Operational differences detected by some researchers have also made it possible to measure satisfaction and dissatisfaction as different bipolar dimensions (Singh and Wilkes, 1996).

In accordance with this debate on the dimensional nature of the construct, we consider that dissatisfaction deserves independent analysis to examine its origin. This study, therefore, is intended to contribute to the study of dissatisfaction considering that it involves certain theoretical and operational issues absent from the study of satisfaction. With regard to the origin of satisfaction and dissatisfaction, disconfirmation provides a cognitive approach to the formation of both judgements and is the most widely accepted theory in the literature (Oliver, 1980), which offers different standards of comparison with performance, the most relevant being expectations, desires and experience-based norms. However, other cognitive variables have also aroused researchers' interest, especially in the study of dissatisfaction. Said variables are based on the theory of attributions of causality (Folkes, 1984) and on equity (Oliver and Swan, 1989a,b). The affective component has also been gradually gaining ground in the explanation of dissatisfaction judgements, especially in the sphere of services (Grönroos, 2000).

On the basis of these variables, our aim is to investigate the origin of dissatisfaction, analysing the influence of cognitive and affective variables on consumers' assessments of unsatisfactory experiences. The cognitive variables that we analyse are performance, expectations, disconfirmation (of expectations, desires and experience-based norms), attributions of causality and inequity, whereas negative affects are the emotional variables in the study. We specifically want to analyse the contribution of said variables in order to identify the combination that best explains the dissatisfaction construct. We therefore propose an empirical research of an exploratory nature in the context of restaurants,

using multiple regression models based on the stepwise sequential estimation method.

THEORY REVIEW AND HYPOTHESES FORMULATION

The influence of disconfirmation

Disconfirmation theory literature shows different standards for comparing performance, with predictive expectations being the main variable in the theory (Cadotte *et al.*, 1987; Spreng *et al.*, 1996). Thus, disconfirmation of expectations can explain the origin of satisfaction and dissatisfaction based on the intensity and direction of the difference between prior expectations and product performance (Oliver *et al.*, 1997). In this regard, multiple empirical contributions have shown the direct effect of disconfirmation of expectations on satisfaction (Andreassen, 2000; Bowen, 2001; Bigné and Andreu, 2002). Therefore:

Hypothesis 1: Negative disconfirmation of expectations positively influences the level of dissatisfaction.

Expectations have received special attention in the literature because of the major role they play in the disconfirmation paradigm. Many studies support not only their direct effect on disconfirmation, but also their direct, independent effect on satisfaction (Andreassen, 2000). Similarly, performance is the benchmark variable for the process of comparison, and its effect on satisfaction has been verified in several contributions (Matzler *et al.*, 2004). Some works even confirm that performance sometimes has a greater influence on satisfaction than the effect of expectations and disconfirmation (Mittal *et al.*, 1999; Moliner *et al.*, 2001). On the basis of this empirical evidence for the direct effect of expectations and performance, these two variables would have a direct and significant effect on dissatisfaction levels, and therefore the greater the expectation and the lower the level of performance, the greater the level of dissatisfaction. Therefore:

Hypothesis 2: Performance negatively influences the level of dissatisfaction.

Hypothesis 3: Expectations positively influence the level of dissatisfaction.

The limitations of the disconfirmation of expectations model to explain dissatisfaction judgements in the absence of expectations has encouraged researchers to study other variables that act as alternative and complementary reference standards for expectations (Yi, 1990). Those that have been most widely accepted are consumer desires and experience-based norms, and therefore disconfirmation of desires and norms can also partly explain satisfaction judgements.

Desires can be understood as the level of attributes or benefits that consumers believe they will achieve, or the pre-purchase assessment of the desired performance level. Thus, as expectations are more variable

and can change in relation to an individual's information and experiences, desires are more stable and depend more on personal values and the individual's needs and lacks. The most representative contributions in the disconfirmation of desires literature state that this variable, linked to disconfirmation of expectations, helps to explain satisfaction judgements (Spreng and Mackoy, 1996), and may even overcome the impact of expectations (Spreng and Olshavsky, 1993; Spreng *et al*, 1996). In accordance with these studies, the more performance exceeds the level of consumer desires, that is, the greater the negative disconfirmation of desires, the more likely it is that the consumer will feel dissatisfied. Therefore:

Hypothesis 4: Negative disconfirmation of desires positively influences dissatisfaction levels.

With regard to experience-based norms, the studies by Woodruff *et al* (1983) and Cadotte *et al* (1987) are a benchmark in the study of this variable as a comparison element with performance. These authors point out that norms come from an individual's beliefs on the level of performance that the product can achieve in relation to other experiences of a particular brand or several brands in the same category. According to this approach, the greater the level of performance in relation to the norms, that is, the greater the negative disconfirmation of the norms, the greater the levels of dissatisfaction and therefore:

Hypothesis 5: Negative disconfirmation of experience-based norms positively influences the level of dissatisfaction.

The influence of attributions of causality

There are various theoretical and empirical contributions in the literature analysing the attributions variable (Folkes *et al*, 1987; Swanson and Kelley, 2001). According to this theory, dissatisfaction is part of an attributional process where the consumer looks for reasons to explain the difference between his or her expectations and performance (Singh, 1988).

In this process, individuals use three criteria when identifying the causes for the success or failure of their experience: origin, stability and control (Weiner, 1985). In seeking the origin, causes may be internal if the consumer assumes that he or she has caused the results, and external if the individual attributes the cause to the company supplying the product, and situational if surrounding factors or third parties are identified as causes. When evaluating stability, the consumer wonders how likely it is that the cause that gave rise to the results will occur again. A stable or permanent cause is one in which the consumer considers that the origin of the success or failure will continue over time, and an unstable or temporary cause would be one in which the consumer perceives that the cause may be temporary and may change at any time. And finally, if the evaluation is based on control, the individual analyses whether the party responsible for the failure or success of the purchase can exercise any control over the causes. An intentional or controllable situation will be

one in which the consumer thinks that the party responsible can control and prevent the outcome, and an uncontrollable or inevitable situation will be one in which the consumer thinks that the responsible party cannot control the outcome (Folkes, 1984).

The studies that have analysed the three dimensions of attributions suggest that consumers experience greater dissatisfaction when they attribute the reasons for the failure to parties other than themselves, consider that the causes are stable and could have been prevented. This suggests, therefore, a positive relationship between dissatisfaction and the attributions of external and situational origin, stability and control (Folkes, 1984; Singh, 1988; Gooding and Kinicki, 1995). We therefore formulate the following hypotheses in relation to these three criteria:

Hypothesis 6: Origin attributions (external and situational) positively influence the level of satisfaction.

Hypothesis 7: Stability attributions positively influence the level of dissatisfaction.

Hypothesis 8: Control attributions positively influence the level of dissatisfaction.

The influence of inequity

Equity theory has received special attention in consumer satisfaction research on complaints handling and the subsequent consequences (Liljander, 1999; Palmer *et al*, 2000), and is therefore a relevant approach in the study of consumer dissatisfaction. Equity, also known as distributive justice, is based on the evaluation of situations in terms of whether or not they are equitable (Oliver and Swan, 1989a). Said evaluation is fruit of the comparison the individual makes between his investment when purchasing a produce and the rewards he obtains, contrasted in turn with the investment and rewards of another product or individual. Equity, therefore, is an individual's perception of the justice of the proportionality of inputs and outputs invested and received by the parties in an exchange relationship (Gooding and Ross, 1992).

According to some contributions, equity judgements are based on the evaluation of two dimensions: justice and preference (Oliver and Swan, 1989a). Thus, while justice refers to the absolute difference between input/output ratios for each party, preference indicates the sign of this imbalance. In the context of dissatisfaction, although the preference dimension shows that the consumer is the party in the interchange that has lost out, the justice dimension also indicates perception of the imbalance causing the detriment. Therefore, both components have a positive relationship with dissatisfaction judgements, and consequently we posit the following hypotheses:

Hypothesis 9: The justice dimension of inequity positively influences the level of dissatisfaction.

Hypothesis 10: The preference dimension of inequity positively influences the level of dissatisfaction.

The influence of affects

In addition to the cognitive approach provided by attributions, equity and disconfirmation theory, the influence of affective elements on dissatisfaction has become increasingly important. The emotional component has not only been reflected in several conceptualisations about satisfaction (Giese and Cote, 2000), but has also empirically confirmed the direct influence of affects (Smith and Bolton, 2002; Bigné and Andreu, 2004). In the context of services, emotions are particularly relevant because the consumer interacts and participates in the servuction process (Wirtz and Bateson, 1999), and therefore this approach has been more widely accepted in research into dissatisfaction, complaining behaviour and satisfaction with complaints handling (Maute and Dubé, 1999).

Although affects, emotions and mood have certain differentiating nuances (Andreu, 2003), they are usually considered to be equivalent terms. In general, the literature contemplates affects as a set of mental processes that generate emotions and moods. Thus, while emotions are mental states deriving from a cognitive evaluation and are often expressed physically through gestures or postures, mood is a more lasting, more overall and less intense state than emotion. The typologies of affects proposed in the literature include negative, positive and neutral affects (Izard, 1977; Richins, 1987). In general, the most important contributions suggest that positive affects caused by a purchase/consumption experience have a positive, direct relationship with satisfaction (Wirtz *et al*, 2000), and thus negative affects are the causes of dissatisfaction. Therefore:

Hypothesis 11: Negative affects positively influence the level of dissatisfaction.

Figure 1 is a summary of the cognitive and affective variables analysed in the empirical research to explain the formation of dissatisfaction. The proposed hypotheses are intended to detect direct, significant effects of the above variables on dissatisfaction judgements.

METHODOLOGY

In accordance with the objectives and hypotheses proposed in this study, we developed exploratory research to study dissatisfaction based on the determinants proposed in Figure 1.

One of the most commonly used areas of application to study dissatisfaction is restaurants, and this is the context used in this present research. We consider that it is a very interesting sector because of its capacity to easily generate unsatisfactory experiences in relation to the level of individual involvement and critical evaluations of the service results. It is also a wide sector in terms of the number of users and incidents causing different levels of pleasure and stimulation.

Figure 1: Proposed model for the formation of dissatisfaction.

Furthermore, according to the latest data from the Spanish National Consumption Institute¹ on consultations and complaints by economic sectors, in 2007, 0.73 per cent of the total were in the hotel and catering sector, with a 25.8 per cent increase in consultations and complaints over 2006.

The memory of an unsatisfactory experience method was used, a technique that has often been applied over several decades of dissatisfaction and complaining behaviour research. The subjects in the study were asked to remember clearly a specific unsatisfactory situation that served as the reference point for assessing the variables for analysis.

The research method is quantitative and based on an *ad hoc* questionnaire. The questionnaire is structured and was self-administered. After pre-testing to verify its operation, the definitive questionnaire is made up of various scales used in different dissatisfaction studies, adapted to our context (Table 1). Five-point scales were used to collect the intensity of each variable.

The reference population was individuals in a Spanish city in the age group of 20–64 years. From a convenience sample, 388 completed questionnaires were collected, of which 380 were valid. The socio-demographic profile of the sample is as follows: (1) 41.3 per cent are men and 58.7 per cent women; (2) 22.4 per cent are in the age group of 20–24 years, 45 per cent between 25 and 34 years, 19.7 per cent between 35 and 44 years and 12.9 per cent between 45 and 64 years; (3) 70.1 per cent are university educated; and (4) 10 per cent have

a medium-low income, 62.1 per cent have a medium income and 27.9 per cent have a medium-high income. In terms of the remembered unsatisfactory experience, 53.8 per cent of the sample chose situations that occurred over 6 months ago and 55.2 per cent of the subjects considered themselves to be sporadic customers. In terms of sample distribution according to restaurant category, 38.6 per cent remembered an unsatisfactory experience in a themed restaurant, 31.7 per cent in a family-run restaurant and the rest refer to social catering services, banquets and tapas bars.

RESULTS

Analysis of the measurement scales

The multiple scales were evaluated by reliability analysis to purge the scale initially and a validity analysis was done to verify measurement system quality. Dimensionality of the attributions, inequity and affects scales was studied to identify the components of these variables.

Internal consistency was evaluated by calculating Cronbach's α coefficient (Carmines and Zeller, 1994). Table 2 shows the α coefficients obtained after items were eliminated to improve reliability.

Scale validity was also analysed through content and construct validity. Content validity is justified by the literature review on the conceptualisation of the variables analysed and the choice of measurement procedures from important contributions in the theory. Construct validity can be analysed through divergent and convergent validity (Carmines and Zeller, 1994) using correlation coefficients. As the variables were measured on a single scale, we were only able to verify the existence of divergent validity with other variables by obtaining coefficients around 0 for a significance level of 0.01.

Dimensions in the attributions, inequity and affects variables were identified using factor analysis with a twofold aim. First, we wanted to determine whether these scales contain the dimensions that, according to the theory, can reflect the significance of these phenomena. Main components factor analysis has been commonly used for this purpose (Huefner *et al*, 2002). Furthermore, we attempted to reduce the number of items in each variable and use in the subsequent regression models a new, smaller group of variables with the least loss of information.

Different conditions must be complied with before running factor analysis. Generally, the sample size must have four or five times more observations than the variables considered in the scale (Hair *et al*, 1999). This condition is fulfilled in the scales chosen, as sample size is $N=380$. As a more specific condition for each scale, there must be sufficient correlations between variables for factor analysis to be appropriate. Different procedures were used to check this: correlation coefficients, Bartlett's test of sphericity and the Kaiser–Meyer–Olkin (KMO) sample adaptation measure (Malhotra, 1997).

To determine the minimum number of factors that explain the maximum variance, Principal Components Analysis (PCA) using varimax rotation was used to identify the dimensions, selecting the factors with eigenvalues greater than one to analyse the item loads on each factor

Table 1: Measurement scales used in the questionnaire

Scale items	Sources
<p><i>Dissatisfaction:</i></p> <p>(1) This is one of the worst restaurants I have ever been to</p> <p>(2) I am not happy that I went to this restaurant</p> <p>(3) It was not a good idea to go to this restaurant</p> <p>(4) I did not enjoy myself in this restaurant</p> <p>(5) I regret having been to this restaurant</p>	Bigné and Andreu (2002, p. 502)
<p><i>Performance:</i></p> <p>What is your global evaluation of that experience in the restaurant after using its services?</p>	Cadotte <i>et al</i> (1987, p. 308)
<p><i>Expectations:</i></p> <p>Score your expectations of what the experience would be like: I expected that my experience in the restaurant would be ...</p>	Spreng and Olshavsky (1993, p. 172)
<p><i>Disconfirmation of expectations:</i></p> <p>In relation to your expectations, your experience in the restaurant was ... as/than you expected</p>	Oliver (1981, p. 40)
<p><i>Disconfirmation of desires:</i></p> <p>Thinking about what you hoped or wanted to find in that restaurant, assess the difference between what you wanted and what you received. Your experience in the restaurant was ... as/than you wanted/hoped</p>	Spreng <i>et al</i> (1996, p. 22)
<p><i>Disconfirmation of experience-based norms:</i></p> <p>(1) Imagine the best restaurant in the same category as this one, and assess your experience. Your experience in the restaurant was ... than the best restaurant</p> <p>(2) In relation to your experience, make an average assessment of what restaurants in the same category offer and assess your experience. Your experience in the restaurant was ... than the average for the restaurants</p>	Cadotte <i>et al</i> (1987, p. 308)
<p><i>Causality attributions:</i></p> <p>(1) If the restaurant had paid more attention, the problem would not have occurred (control)</p> <p>(2) I feel I am responsible for the problem that arose in the restaurant (internal origin)</p> <p>(3) This restaurant very rarely makes mistakes (stability)</p> <p>(4) I think that neither the restaurant nor I caused the situation (situational origin)</p> <p>(5) The person in charge could have taken steps to prevent the problem from happening (control)</p> <p>(6) The restaurant was entirely responsible for the problem I had (external origin)</p> <p>(7) The incident was my fault (internal origin)</p> <p>(8) It is likely that this type of incident always occurs in this restaurant (stability)</p> <p>(9) The situation was due to circumstances, which had nothing to do with me or the restaurant (situational origin)</p> <p>(10) In general, I blame the restaurant for the problem (external origin)</p>	Maxham and Netemeyer (2002, p. 69) and Blodgett <i>et al</i> (1993, p. 414)
<p><i>Inequity:</i></p> <p>(1) I think that the restaurant benefited more than I did (preference)</p> <p>(2) I was unjustly treated by the restaurant (justice)</p> <p>(3) I think that in that situation, I lost out (preference)</p> <p>(4) In general, they did not treat me well in the restaurant (justice)</p> <p>(5) The situation that occurred in the restaurant was unjust (justice)</p> <p>(6) Both the restaurant and I lost out (preference)</p>	Oliver and Swan (1989a, p. 29)
<p><i>Affects:</i></p> <p>(1) Angry,</p> <p>(2) Upset,</p> <p>(3) Disregarded,</p> <p>(4) Sad,</p> <p>(5) Scared,</p> <p>(6) Ashamed,</p> <p>(7) Guilty,</p> <p>(8) Furious,</p> <p>(9) Indignant,</p> <p>(10) Despised,</p> <p>(11) Discouraged,</p> <p>(12) Intimidated,</p> <p>(13) Distrustful,</p> <p>(14) Responsible</p>	Izard (1977, 1991)

Table 2: Scale reliability analysis

Scales	Cronbach's α coefficient
Dissatisfaction	0.86
Disconfirmation of norms	0.79
Causality attributions (eliminating item 1)	0.76
Inequity (eliminating item 6)	0.77
Affects	0.79

Table 3: Factor analysis of the purged attributions scale

Attributions dimensions	Factor loads	Communalities	Variance explained (%)
<i>Origin</i>			37.02
(2) I feel I am responsible for the problem that arose in the restaurant	0.699	0.492	
(4) I think that neither the restaurant nor I caused the situation	0.696	0.554	
(6) The restaurant was entirely responsible for the problem I had	0.760	0.595	
(7) The incident was my fault	0.748	0.573	
(9) The situation was due to circumstances, which had nothing to do with me or the restaurant	0.679	0.544	
(10) In general, I blame the restaurant for the problem	0.608	0.416	
<i>Stability</i>			20.18
(3) This restaurant very rarely makes mistakes	0.831	0.696	
(8) It is likely that this type of incident always occurs in this restaurant	0.833	0.709	

Per cent of the accumulated variance explained: 57.20.

Bartlett's test of sphericity: 785.990 (sign. 0.000).

KMO=0.784.

(Malhotra, 1997). Analysis of communalities helps to select the items that represent each factor (Hair *et al*, 1999).

Tables 3–5 show the results of PCA, which reflect the largest percentage of the variance explained in each of the chosen scales. In all cases, applicability conditions for the correlation coefficients were fulfilled. The other conditions are shown in each of the tables.

In the attributions scale, after eliminating item 5 in the first factor analysis, in the second analysis we managed to obtain (Table 3) two factors that explain 57.2 per cent of the variance: origin dimension and stability dimension. For this new set of items, Cronbach's α is 0.76. Factor loads are high and the communalities values acceptable. Given that we do not obtain the control dimension for attributions in the factor analysis, it is not possible to verify Hypothesis 3.

The application of PCA to the inequity scale offers more satisfactory results (Table 4). In this case, 65 per cent of the variance is explained, selecting two factors: justice and preference. In both cases, factor loads are high and so are communalities.

In the second factor analysis with the negative affects scale (Table 5), when two items from the first PCA (item 2 and 13) were eliminated, three

Table 4: Factor analysis of the inequity scale

<i>Inequity dimensions</i>	<i>Factor loads</i>	<i>Communalities</i>	<i>Variance explained (%)</i>
<i>Justice</i>			38.6
(2) I was unjustly treated by the restaurant	0.829	0.743	
(4) In general, they did not treat me well in the restaurant	0.844	0.715	
(5) The situation that occurred in the restaurant was unjust	0.814	0.681	
<i>Preference</i>			26.33
(1) I think that the restaurant benefited more than I did	0.768	0.624	
(3) I think that in that situation, I lost out	0.594	0.577	
(6) Both the restaurant and I lost out	0.748	0.560	

Per cent of the accumulated variance explained: 65.
 Bartlett's test of sphericity: 597.385 (sign. 0.000).
 KMO=0.784.

Table 5: Factor analysis of the purged affects scale

<i>Negative affects dimensions</i>	<i>Factor loads</i>	<i>Communalities</i>	<i>Variance explained (%)</i>
<i>Fear and guilt</i>			23.86
(5) Scared	0.701	0.708	
(6) Ashamed	0.647	0.629	
(7) Guilty	0.858	0.756	
(12) Intimidated	0.724	0.646	
(14) Responsible	0.799	0.669	
<i>Anger</i>			23.84
(1) Angry	0.695	0.495	
(3) Disregarded	0.732	0.624	
(8) Furious	0.790	0.652	
(9) Indignant	0.773	0.600	
(10) Despised	0.733	0.602	
<i>Sadness</i>			14.19
(4) Sad	0.715	0.537	
(11) Discouraged	0.708	0.510	

Per cent of the accumulated variance explained: 61.91.
 Bartlett's test of sphericity: 1725.978 (sign. 0.000).
 KMO=0.756.

components were detected that have been called: fear and guilt, anger and sadness. These three factors accumulate a variance of 61.91 per cent. Factor loads are high and so are communalities. This new set of items has an acceptable level of reliability ($\alpha=0.77$).

Regression analysis

In accordance with the objectives and relations proposed in Figure 1, we attempt to identify the variables that best explain consumer dissatisfaction analysing the influence of the determinants. For this, we understand that multiple regression analysis is a suitable procedure for determining what variable or variables can be considered as the most important in the

process of forming a construct (McDaniel and Gates, 1999). Different authors in the field of satisfaction, dissatisfaction and complaining behaviour have used this technique to study this type of relationships (Maute and Dubé, 1999; Jun *et al.*, 2001; Maxham and Netemeyer, 2003).

External and internal consistency of a regression model can be checked through different tests (Hair *et al.*, 1999). External consistency is analysed from the value of the coefficient of determination, R^2 and the F -test level of significance, and therefore the likelihood of R^2 being significant will indicate the power of the regression (Cohen & Cohen, 1983). Internal consistency of the model was verified using the following tests to determine the contribution of residue in the regression equation: the Durbin–Watson (D–W) statistic, homoscedasticity of the residue, the Kolmogorov–Smirnov (K–S) statistic and the Variance Inflation Factor (VIF). These indicators show the absence of a high correlation between the independent variables, which could cause bias in the regression coefficients.

According to Hair *et al.* (1999), sample size is the most important factor for obtaining reliable results in a linear regression. In fact, the R^2 value depends on the number of independent variables and sample size (Cohen & Cohen, 1983). In view of the 11 determinants, the dimensions obtained in the factor analysis and the fact that sample size is $N=380$, Hair *et al.*'s recommendations are met (1999).

When there is a wide set of variables that can influence the explanation of a phenomenon, the sequential stepwise estimation method (stepwise regression) can be used to select the most important ones. This type of regression can maximise the model's predictive capacity with the least number of independent variables (Hair *et al.*, 1999). Therefore, we consider that it could be the most suitable for achieving an optimum model to predict dissatisfaction levels by identifying the variables with the greatest capacity to explain this construct.

In accordance with the model proposed in Figure 1, the determinants of dissatisfaction can be classified into two groups: those related with the cognitive component and those related with the affective component. Therefore, the following independent variables are included in the initial regression equation: performance, expectations, disconfirmation of expectations, disconfirmation of desires, disconfirmation of norms, attributions of causality (in the dimensions of origin and stability), inequity (in the dimensions of justice and preference) and negative affects (in the dimensions of fear and blame, anger and sadness). Table 6 shows the regression analysis with the standardised regression coefficients, β_i , and the changes in the determination coefficient as the most correlated variables are included. The foot of the table notes the external and internal consistency tests for the model with the highest R^2 , the one in the right-hand column.

According to this analysis, performance correlates most with dissatisfaction, followed by the preference dimension of equity, disconfirmation of norms and the stability dimension of attributions. The determination coefficient of the model that best explains the dependent variable (model 4) is 0.465, which indicates that 46.5 per cent of the

Table 6: Regression analysis on dissatisfaction (stepwise regression)

Dependent variable: Level of dissatisfaction		Model 1	Model 2	Model 3	Model 4
Performance	β_1	-0.594	-0.558	-0.443	-0.403
	Sign. of t	0.000	0.000	0.000	0.000
	VIF	1.000	1.021	1.493	1.568
Inequity: 'Preference'	β_2	—	0.253	0.235	0.223
	Sign. of t	—	0.000	0.000	0.000
	VIF	—	1.021	1.033	1.040
Disconfirmation of Norms	β_3	—	—	0.206	0.190
	Sign. of t	—	—	0.000	0.000
	VIF	—	—	1.507	1.518
Attributions: 'Stability'	β_5	—	—	—	0.156
	Sign. of t	—	—	—	0.000
	VIF	—	—	—	1.135
Change in model fit	R^2 change	0.353	0.063	0.028	0.022
	Sign. change F	0.000	0.000	0.000	0.000

$R^2 = 0.465$; Sign. of $F = 0.000$; Typical estimation error = 0.60376.

D-W = 1.830; Average residues = 0; Sign. of K-S = 0.302.

variation in dissatisfaction is explained through variation in performance, preference in inequity, disconfirmation of norms and stability attributions. The statistics that prove internal consistency show that the residue fulfil the conditions of independence, homoscedasticity and normality. In addition, VIF values show that variations in the independent variables are not explained by each other.

In accordance with the value of the regression coefficients for model 4 (Table 6), performance has a negative influence on dissatisfaction, and a positive influence on the other variables. Therefore, Hypothesis 2 (on performance), Hypothesis 5 (on disconfirmation of norms), Hypothesis 7 (on the stability dimension of attributions) and Hypothesis 10 (on the preference dimension of inequity) are fulfilled. These results show that the greater the perception of the results of an experience, the more likely it is that a lower level of dissatisfaction will occur. However, the greater the perception of inequity (preference dimension), difference with experience-based norms (disconfirmation of norms) and stability of causes (attributions in the stability dimension), the greater the likelihood of the consumer achieving a higher level of dissatisfaction.

CONCLUSIONS AND FUTURE RESEARCH LINES

In this study, we attempted to discover how dissatisfaction is formed through the effect of a set of cognitive and affective determinants, as shown in Figure 1. First, dissatisfaction is explained mainly by the consumer's perception of the results of the product/service. The context of restaurants that involves a certain amount of personal interaction, and is an easy experience to evaluate, could be a situation where the consumer mainly uses perception of the results to issue dissatisfaction judgements. Therefore, in this study, prior expectations have proved to be an irrelevant variable in the estimation of dissatisfaction.

Subsequently, the results of the investigation suggest that the preference dimension of inequity intervenes as a second explanatory variable in the model estimation. Therefore, the consumer's perception of detriment in the experience with the restaurant helps to improve the explanation of dissatisfaction judgements. These results support the contribution of this variable to predict the level of dissatisfaction in situations where interpersonal relations are significant when it comes to evaluating the experience (Erevelles and Leavitt, 1992). Therefore, the role of inequity must be emphasised in the assessment of restaurant service where customer–employee interaction is important.

Although disconfirmation of expectations and desires have proved to be absent in the regression model, disconfirmation of experience-based norms appears as the third explanatory variable. As commented in the literature review, said norms are based on prior experience of other products or brands. Given that restaurant service is a very common situation and individuals tend to have plenty of prior experience, it seems logical that comparison with other establishments will be taken into account as a reference of performance to evaluate the results of that service.

Finally, the stability dimension of causality attributions is also a significant determinant, which appears as the fourth explanatory variable in the process of forming dissatisfaction. Said dimension indicates that the consumer evaluates the likelihood of repetition of the cause that originated the unsatisfactory experience. Therefore, in our context of application, the fact that the restaurant customer perceives stability of causes, that is, considers that the origin of the failure is not something temporary and will occur again in the future, is a relevant factor for explaining part of dissatisfaction judgements.

With regard to the emotional component of dissatisfaction proposed in Figure 1, it can be concluded that negative affects do not contribute to the formation of these judgements. While taking into account the exploratory nature of the research, it appears that customers' evaluation of an unsatisfactory experience in a restaurant does not depend on affective variables. Therefore, dissatisfaction has a clearly cognitive content as it is determined by assessment of the above-mentioned variables: performance, inequity, disconfirmation of norms and attributions.

Transferring these results to business practice, those responsible for managing restaurant businesses should be aware of the importance for customers of perceiving a high level of service quality. This level of quality must also be maintained over time to prevent customers from perceiving problem stability. In this regard, employees' professionalism could help to provide a level of service quality that makes customers feel that they have benefited from their experience in relation to restaurant profits. Similarly, given that the comparison consumers make with other restaurants is a key factor in their dissatisfaction judgements, restaurants should develop differentiation actions in order to offer higher added value than their competitors. Finally, taking into account the effect of dissatisfaction on subsequent consumer responses, both behavioural (complaining actions to the supplier or third parties, negative word-of-mouth and change behaviour), and non-behavioural (intentions and attitudes), these results are an indicator of the need for restaurants to

introduce a suitable programme for dealing with dissatisfaction and managing complaints. Said programme must include actions oriented at stimulating the presentation of complaints with the aim of recovering the customer and forging closer commercial links to favour loyalty.

The research proposals we suggest are along the lines of investigating in more depth the formation of dissatisfaction from both the methodological and the conceptual perspective. With regard to methodological matters, we suggest studying the variables analysed in other services with a high potential to generate dissatisfactory situations, to find out whether the contribution of the determinants to dissatisfaction remains the same. Telephony or financial services could be interesting because of the high levels of dissatisfaction, as shown by the results from the National Consumption Institute (2007) on the evolution of consultations and complaints by economic sectors. To obtain more conclusive results and be able to generalise them, information from more representative samples is needed, and therefore we propose the use of random sampling methods. With regard to the application of statistical techniques, causality methodologies could be used to infer causal relations between the variables based on the estimation of structural equations systems.

At a conceptual level, it would be useful to add to the dissatisfaction formation process relationships that show the moderator effects of some independent variables, to find out the direct and indirect effects of determinants on dissatisfaction judgements. Following this line, there could also be research into the possible mediator effects of some determinants to examine how the level of dissatisfaction would vary. The benchmark could be the methodology used in the work by Maxham and Netemeyer (2003), which, applying regression with mediation analysis, investigates the mediator effects of some determinants of satisfaction and subsequent behavioural intentions.

ACKNOWLEDGEMENT

This research has been financed by the Spanish Ministry of Education and Science (Project Ref.: SEJ2007-66054).

NOTE

- 1 Instituto Nacional de Consumo is a body attached to the Spanish Ministry of Health and Consumer Affairs, which provides a yearly record of the claims presented by consumers to Consumer and User Associations.

REFERENCES

- Andreassen, T.W. (2000) Antecedents to satisfaction with service recovery. *European Journal of Marketing* 34(1/2): 156–175.
- Andreu, L. (2003) Emociones del consumidor: componentes y consecuencias en marketing. *Estudios sobre Consumo* 64(1): 9–25.
- Bigné, J.E. and Andreu, L. (2002) Análisis de la satisfacción en la experiencia del consumidor: una aplicación en museos interactivos. *Encuentro de Profesores Universitarios de Marketing, Granada XIV*: 497–510.
- Bigné, J.E. and Andreu, L. (2004) Modelo cognitivo-afectivo de la satisfacción en servicios de ocio y turismo. *Cuadernos de Economía y Dirección de Empresas* 21: 89–120.

- Blodgett, J.G., Granbois, D.H. and Walters, R.G. (1993) The effects of perceived justice on complainants' negative word-of-mouth behavior and repatronage intentions. *Journal of Retailing* 69(4): 399–428.
- Bowen, D. (2001) Antecedents of consumer satisfaction and dissatisfaction (CS/D) on long haul inclusive tours: A reality check on theoretical considerations. *Tourism Management* 22(1): 49–61.
- Cadotte, E.R., Woodruff, R.B. and Jenkins, R.L. (1987) Expectations and norms in models of consumer satisfaction. *Journal of Marketing Research* 24: 305–314.
- Carmines, E.G. and Zeller, R.A. (1994) Reliability and validity assessment. In: M.S. Lewis-Beck (ed.) *Basic Measurement*. Londres: Sage Publications, pp. 1–58.
- Cohen & Cohen. (1983) *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, 2ª Edición. Hillsdale, NJ: Lawrence Erlbaum.
- Erevelles, S. and Leavitt, C. (1992) A comparison of current models of consumer satisfaction/dissatisfaction. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior* 5: 104–114.
- Folkes, V.S. (1984) Consumer reactions to product failure: An attributional approach. *Journal of Consumer Research* 10: 398–409.
- Folkes, V.S., Koletsky, S. and Graham, J.L. (1987) A field study of causal inferences and consumer reaction: The view from the airport. *Journal of Consumer Research* 13: 534–539.
- Giese, J.L. and Cote, J.A. (2000) Defining consumer satisfaction. *Academy of Marketing Science Review* 1: 1–34.
- Gooding, C. and Ross, I. (1992) Consumer responses to service failures: Influence of procedural and interactional fairness perceptions. *Journal of Business Research* 25(2): 149–163.
- Gooding, R.Z. and Kinicki, A.J. (1995) Interpreting event causes: The complementary role of categorization and attribution processes. *Journal of Management Studies* 32: 1–22.
- Grönroos, C. (2000) *Service Management and Marketing. A Customer Relationship Management Approach*, 2nd edn. West Sussex, UK: John Wiley & Sons.
- Hair Jr, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1999) *Análisis Multivariante*, 5ª Edición. Londres: Prentice Hall.
- Huefner, J.C. et al (2002) Consumer rataliation: Confirmation and extension. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior* 15: 114–127.
- Instituto Nacional de Consumo. (2007) Consultas y reclamaciones en las organizaciones de consumidores de ámbito estatal presentes en el Consejo de Consumidores y Usuarios, <http://www.consumo-inc.es>.
- Izard, C.E. (1977) *Human Emotions*. New York: Plenum Press.
- Izard, C.E. (1991) *The Psychology of Emotions*. New York: Plenum.
- Jun, S., Hyun, Y.J., Gentry, J.W. and Song, C. (2001) The relative influence of affective experience on consumer satisfaction under versus negative discrepancies. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior* 14: 141–153.
- Liljander, V. (1999) Consumer satisfaction with complaint handling following a dissatisfactory experience with car repair. *European Advances in Consumer Research* 4: 270–275.
- Malhotra, N.K. (1997) *Investigación de Mercados. Un Enfoque Práctico*. México: Prentice Hall.
- Matzler, K., Bailom, F., Hinterhuber, H.H., Renzl, B. and Pichler, J. (2004) The asymmetric relationship between attribute-level performance and overall customer satisfaction: A reconsideration of the importance-performance analysis. *Industrial Marketing Management* 33: 271–277.
- Maute, M.F. and Dubé, L. (1999) Patterns of emotional responses and behavioural consequences of dissatisfaction. *Applied Psychology: An International Review* 48(3): 349–366.
- Maxham III, J.G. and Netemeyer, R.G. (2002) A longitudinal study of complaining customers' evaluations of multiple service failures and recovery efforts. *Journal of Marketing* 66: 57–71.
- Maxham III, J.G. and Netemeyer, R.G. (2003) Firms reap what they sow: The effects of shared values and perceived organizational justice on customer's evaluations of complaint handling. *Journal of Marketing* 67: 46–62.
- McDaniel, C. and Gates, R. (1999) *Investigación de Mercados Contemporánea*, México: Thomson Editores.
- Mittal, V., Kumar, P.J. and Tsiros, M. (1999) Attribute-level performance, satisfaction and behavioral intentions over time: A consumption-system approach. *Journal of Marketing* 63: 88–101.
- Moliner, B., Berenguer, G. and Gil, I. (2001) La importancia de la performance y las expectativas en la formación de la satisfacción del consumidor. *Investigaciones Europeas de Dirección y Economía de la Empresa* 7(3): 155–172.
- Oliver, R.L. (1980) A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research* 17: 460–469.

- Oliver, R.L. (1981) Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing* 57(3): 25–48.
- Oliver, R.L., Rust, R.T. and Varki, S. (1997) Customer delight: Foundations, findings and managerial insight. *Journal of Retailing* 73(3): 311–336.
- Oliver, R.L. and Swan, J.E. (1989a) Consumer perceptions of interpersonal equity and satisfaction in transactions: A field survey approach. *Journal of Marketing* 53: 21–35.
- Oliver, R.L. and Swan, J.E. (1989b) Equity and disconfirmation perceptions as influences on merchant and product satisfaction. *Journal of Consumer Research* 16: 372–383.
- Palmer, A., Beggs, R. and Keown-McMullan, C. (2000) Equity and repurchase intention following service failure. *Journal of Services Marketing* 14(6): 513–528.
- Prakash, V. (1991) Intensity of dissatisfaction and consumer complaint behaviors. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior* 4: 110–122.
- Richins, M.L. (1987) A multivariate analysis of responses to dissatisfaction. *Journal of the Academy of Marketing Science* 15: 24–31.
- Singh, J. (1988) Consumer complaint intentions and behavior: Definitional and taxonomical issues. *Journal of Marketing* 52: 93–107.
- Singh, J. and Wilkes, R.E. (1996) When consumers complain: A path analysis of the key antecedents of complaint response estimates. *Journal of the Academy of Marketing Science* 24(4): 350–365.
- Smith, A.K. and Bolton, R.N. (2002) The effect of consumers' emotional responses to service failures on their recovery effort evaluations and satisfaction judgments. *Journal of Academy of Marketing Science* 30: 5–24.
- Spreng, R.A., Mackenzie, S.B. and Olshavsky, R.W. (1996) A reexamination of the determinants of consumer satisfaction. *Journal of Marketing* 60: 15–32.
- Spreng, R.A. and Mackoy, R.D. (1996) An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing* 72(2): 201–214.
- Spreng, R.A. and Olshavsky, R.W. (1993) A desires congruency model of consumer satisfaction. *Journal of the Academy of Marketing Science* 21(3): 169–177.
- Swanson, S.R. and Kelley, S.W. (2001) Service recovery attributions and word-of-mouth intentions. *European Journal of Marketing* 35(1/2): 194–211.
- Weiner, B. (1985) An attributional theory of achievement motivation and emotion. *Psychological Review* 92(4): 548–573.
- Wirtz, J. and Bateson, J.E.G. (1999) Consumer satisfaction with services: Integrating the environment perspective in services marketing into the traditional disconfirmation paradigm. *Journal of Business Research* 44: 55–66.
- Wirtz, J., Mattila, A.S. and Tan, R.L.P. (2000) The moderating role of target-arousal on the impact of affect on satisfaction—an examination in the context experiences. *Journal of Retailing* 76(3): 347–365.
- Woodruff, R.B., Cadotte, E.R. and Jenkins, R.L. (1983) Modeling consumer satisfaction processes using experience-based norms. *Journal of Marketing Research* 20: 296–304.
- Yi, Y. (1990) A critical review of consumer satisfaction. In: V.A. Zeithaml (ed.) *Review of Marketing*. Chicago, IL: American Marketing Association, pp. 68–123.