INTEGRATING SERVICE QUALITY AND SATISFACTION: PAIN IN THE NECK OR MARKETING OPPORTUNITY?

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ABSTRACT

The service quality and the customer satisfaction paradigms are still competing for the primate of marketing's attention. While both paradigms stem from two distinct research traditions, a number of similarities also exist and several attempts have been made to integrate both points of view into one model in the literature. However, the question of the sequential order of service quality and customer satisfaction in such models has remained largely unresolved and has caused considerable debate in the literature. In this article a conceptual model is formulated and empirically tested to gain insight into relationship between the two concepts. The results suggest that service quality should be treated as an antecedent of customer satisfaction. However, it was also found that perception is a direct indicator of satisfaction. The influence of expectations and disconfirmation on satisfaction seems to be rather small.

INTRODUCTION

In academic research as well as in managerial practice the concepts of satisfaction and service quality still seem to be struggling for the primate of marketing's attention. Increasingly, service providers are posing a very fundamental question; should we focus on customer satisfaction or on customer perceived service quality? The nature of these concepts and of the relationship between them remains fuzzy. Sometimes they are treated as synonymous in a service context (e.g., Zeithaml et al. 1991), while at other times conceptual as well as empirical distinctions are being reported (e.g., Cronin and Taylor 1992). While customer satisfaction and customer perceived service quality stem from two distinct research paradigms, both use expectations and perception as key antecedent constructs. Following Patterson and Johnson (1993), we seek to merge service satisfaction with service quality by integrating them in one model in this article. Before discussing and testing such a model in a health services context we will first briefly introduce the two concepts, indicate the main differences between them and discuss how the two concepts can be integrated. In other words, our purpose in this article is to provide a who's who, a what's what and a how's how of customer evaluative judgments in services consumption events and to report on an empirical test of the answers to these basic questions in the context of chiropractic treatment, a type of health care service aimed at providing relief for neck and back pain.

WHO'S WHO?

In this section we will briefly introduce the key players.

Service Satisfaction

Conceptually, a great deal of advances and nuances in the field of customer satisfaction/dissatisfaction (CS/D) have been made. Both outcome as well as process definitions co-exist in the literature.

With regards to the former, the satisfaction-as-states framework by Oliver (1989) distinguishes, among others, between 'satisfaction-as-contentment', 'satisfaction-as-pleasure', 'satisfaction-as-relief', 'satisfaction-as-novelty' and 'satisfaction-as-surprise' on the basis of level of reinforcement and degree of arousal. Satisfaction here is viewed as a post-consumption evaluation (or 'fulfillment') containing both cognitive and affective elements (Oliver 1981).

More prevalent are process-oriented conceptualisation of satisfaction. An example of this is offered by Tse and Wilton 1988, p. 204) who view satisfaction as *the customer's response to the evaluation of the perceived discrepancy between prior expectations (or some other norm of performance) and the actual performance of the product as perceived after its consumption.* The model that forms the basis of this definition is the so-called disconfirmation of expectations paradigm. According to this model, there are three determinants of CS/D: expectations, perceptions

and (dis)confirmation. It has been argued that customers form expectations prior to the purchase of a product or service. These expectations form a standard against which product (or service) performance will be judged. A comparison of expectations and perceptions will result in either confirmation or disconfirmation. Customers' expectations are confirmed when product or service perceptions exactly meet expectations. Disconfirmation will be the result of a discrepancy between expectations and perceptions. Two types of disconfirmation can be identified: positive disconfirmation occurs when product performance exceeds prior expectations and negative disconfirmation occurs when expectations exceed performance. Confirmation and positive disconfirmation will be likely to result in satisfaction, whereas negative disconfirmation leads to dissatisfaction. In addition, it has also been reported that expectations and perceptions can also impact satisfaction directly (Tse and Wilton 1988).

A second element of the above definition that merits attention is the use of the word 'product'. Product-based satisfaction research has dominated the literature for a long time. The paradigm has been related to the overall performance of a product or it may be restricted to certain attributes, or, alternatively, transaction versus brand-specific performance (Anderson and Fornell 1994). Recently, however, a number of studies have applied the disconfirmation model in the context of services also (Bolton and Drew 1991; Oliva, Oliver and MacMillan 1992). Bitner and Hubert (1994) have introduced the distinction between service encounter satisfaction and overall service satisfaction. The latter relates to a number of previous experiences over a longer period of time. It is in the services domain where satisfaction meets its competitor service quality.

Service Quality

Similarly to satisfaction, perceived service quality is often defined as the comparison of service expectations with actual perceptions (Zeithaml et al. 1990). Conceptually, service quality has been defined as an attitude which is associated but not regarded as similar to satisfaction. On an operational level, research in service quality has been dominated by the

SERVQUAL model, also known as the gap model. The central idea in this model is that service quality is a function of the difference scores or gaps between expectations and perceptions (P - E). It has been proposed that service quality is a multidimensional concept (Parasuraman et al. 1985). Five key determinants of service quality have been identified (reliability, responsiveness, assurance, empathy and tangibles). These dimensions are related to both the service process and its outcome, but it is not always clear how. Strandvik and Liljander (1994) proposed to add to the questionnaire an item that specifically measures the core service, which focuses primarily on the outcome of the service experience.

While the SERVQUAL instrument has been well-established it has also been well-criticized. One primary concern is that it departs from *static* expectations and/or perceptions. Customers may change their expectations following a (positive or negative) service experience. Therefore, a number of dynamic approaches to perceived service quality has been proposed (Bolton and Drew 1991; Boulding et al. 1993; Strandvik and Liljander 1994). The expectations component has also received a number of critical comments since it has been demonstrated that perception by itself is a stronger predictor of the service quality concept than the gap between expectations and perceptions. (e.g., Cronin and Taylor 1992).

From this brief introduction it could be concluded that the two concepts are seemingly similar; both take the comparison between customer expectations and perceived performance as their point of departure. Recently, a number of differences between the two concepts have been brought forward, indicating the existence of a 'conceptual gap'. We shall briefly discuss this gap in order to delineate the two concepts further.

Service Satisfaction - *Service quality; Gap 6?*

A number of differences between satisfaction and quality in the service setting have been identified in the literature (Patterson and Johnson 1993; Oliver 1993). In the first place, and most obviously, satisfaction is directly influenced by the intervening variable of disconfirmation, while this construct (for no apparent reason) is lacking in the gap model. Secondly, in order to achieve

satisfaction (even in the overall sense) customers must have experienced a service. In contrast, perceived service quality is not experience-based. Thirdly, expectations in the gap model were originally based on an ideal standard, whereas as the CD/D paradigm uses predictive ('would be') expectations as the norm. Fourthly, the dimensions in the gap model are fairly specific, whereas satisfaction can result from a large variety of dimensions that lie beyond the five specified by the SERVQUAL instrument. Finally, it has been argued that the number of antecedent of the two concepts differs considerably. Evidence exists regarding a number of cognitive and affective processes (equity, attributions, cost/benefit analyses) that influence satisfaction. In the context of service quality, reference is made solely to forms of communications. Some of these differences are now vanishing as a result of refinement in conceptualization and operationalization. We may, therefore, conclude that while there is and was a gap between the conceptualizations of service satisfaction and service quality, it is narrowing. This indicates that attempts to integrate both approaches in one model could be a fruitful exercise.

WHAT'S WHAT?

Equally important in the discussion about the relationship between quality and satisfaction is the question of what determines what? On a conceptual level this in turn leads to questions such as 'should perceived service quality replace customer satisfaction as the central issue in the marketing concept?'. On an operational level management-by-satisfaction and management-by-service quality are the two options that companies are facing. The question here is 'which is the appropriate gauge of success?' Slowly but in an ongoing discussion theoretical and empirical arguments for the sequential order between the two concepts are being accumulated.

Cronin and Taylor (1992) undertook an empirical test of the reciprocity between satisfaction and quality across several service industries. Using structural equation modelling, they found that service quality can be seen as a determinant of satisfaction which in turn influences purchase intentions, although it must be noted that

this study suffers from important imperfections, particularly in the area of operationalization. Oliver (1993) and Rust and Oliver (1994) also adhere to this service quality -satisfaction order as the latter is viewed as a summarized cognitive and emotional reaction at the service episode level. They add that eventually satisfaction in turn is a possible influence on future quality perceptions at the episode-specific level. The distinction between episode-specific and overall evaluation of satisfaction is also made by Bitner and Hubert (1994). They found that episode-specific satisfaction can be clearly discerned from overall satisfaction and service quality. Between the two latter constructs they found a strong positive relationship indicative of a strong overlap. Nevertheless, they postulate that both types of satisfaction precede perceived service quality which is perceived to be the most abstract construct of the three. Parasuraman et al. (1994) are also reconsidering their point of view regarding the relationship between satisfaction and quality. They state that transaction (or episode)-specific satisfaction is based on customer evaluations of the service quality, the product quality and the price. Strandvik and Liljander (1994) view quality as the outsider perspective as it need not personally be experienced, while satisfaction is more an insider perspective connected to actual service experience. As a result, satisfaction is more directly connected to (re)purchase intentions. So far, empirical and theoretical evidence for a particular sequential order remains inconclusive. Only limited answers to a very essential question in marketing theory and practice have been provided. Figure 1 summarizes these answers.

It can be concluded that there seems to be a tendency to treat satisfaction as a superordinate construct to service quality. We subscribe to this view. The most important argument in the current discussion is that after an objective comparison between expectations and perceptions, this comparison is subjectively interpreted by customers on the basis of attributions, zones of tolerance, emotions and cost/benefit analyses. Therefore, we will treat service quality as an antecedent of service satisfaction in a model which we will use to answer the question of how to integrate the two concepts.

Figure 1
An Overview of the Literature

THEORY	RELATION	AUTHORS
Satisfaction considered as a cumulative & emotional process	Quality considered as an antecedent of satisfaction	Oliver (1993) Rust & Oliver (1994)
Satisfaction considered as a **superordinate construct** (satisfaction has more antecedents than quality)	Quality considered as an antecedent of satisfaction	Neijsen & Trompetter (1989) Cronin & Taylor (1992) Parasuraman et al. (1992) Strandvik & Liljander (1994)
Quality considered as an attitude	Satisfaction considered as an antecedent of quality	Mentzer et al. (1993) Patterson & Johnson (1993)
Quality considered as a **superordinate construct** (quality is considered to be a more abstract concept than satisfaction)	Satisfaction considered as an antecedent of quality	Bolton & Drew (1992) Bitner & Hubbert (1994)

HOW'S HOW?

Following Patterson and Johnson (1993) we integrated the CS/D and gap paradigms in one model. In this model service satisfaction is treated as the dependent variable. In this section we will briefly explain how our model is rendered in Figure 2.

Figure 2
Conceptual Model
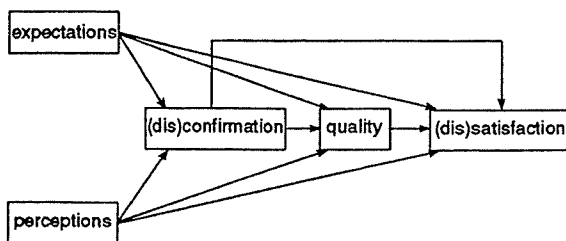
In this model expectations and perceptions directly influence (dis)confirmation, quality and (dis)satisfaction. Furthermore, (dis)confirmation is an antecedent of quality and (dis)satisfaction and quality influences (dis)satisfaction also directly.

The direct relationship between perceptions and quality and perceptions and satisfaction is postulated on the basis of Cronin and Taylor (1992), Oliver (1993) and Teas (1993). Based on more conservative studies we still take into account the relationship between expectations and quality and expectations and (dis)satisfaction. (i.e. Woodruff et al. 1983; Parasuraman et al. 1985). Next, we will discuss an empirical test of this model in the context of a medical service which in Oliver's (1989) terms can be viewed as the 'satisfaction as relief' scenario.

AN EMPIRICAL STUDY

Research setting

We decided to test the model for the high-involvement health care service of chiropractic care. Chiropractic treatment concerns itself primarily with balancing the relationship between the spine and the nervous system through manipulative treatment aimed at relieving neck and back pain. While a number of (longitudinal) studies (Meade et al. 1990; Manga et al. 1993) have revealed the effectiveness of chiropractic treatment so that it can no longer be denounced as

'quackery', a focus on patient evaluations of the process and outcome of this health care service is judged as vitally important for a number of reasons. In the first place, chiropractic treatment is a service that still suffers from misinformation and perception on the part of customers as well as health policy makers and planners. This not only concerns the treatment itself, but also issues like insurance coverage (Sanchez 1991). Secondly, in a health market characterized by intensified competition, this type of service relies heavily on personal referrals by former and current patients. Finally, the market for treatment of neck and back pain seems to be subject to the principle of 'revealed preference'; research has shown that patients clearly prefer chiropractic treatment to available alternatives (e.g., physician care) despite the fact that higher (out-of-pocket) costs have to be paid (Wardwell 1989).

A chiropractic clinic in a mid-sized city in the Netherlands was selected for conducting our research. Serving 7700 registered patients and performing approximately 1000 treatments on a monthly basis, it is one of the most efficiently run health care institutions in the country. Three chiropractors and four administrative assistants are employed in the clinic.

Questionnaire design

First of all, a number of descriptive variables such as gender, age, reason for treatment, treatment duration and referral type were included. With regards to perceived service quality, SERVQUAL items for expectations and perceptions were 'translated' for the chiropractic setting, using a 7-point Likert scale. In accordance with Zeithaml et al. (1991) expectations were phrased in the predictive sense ('would'). In accordance with Strandvik and Liljander (1994) one question was added regarding the core service or overall service quality. In relation to service satisfaction also a distinction was made between satisfaction with the outcome of the treatment and satisfaction with the service delivery process. In order to measure disconfirmation, respondents were asked to indicate whether the service was in accordance with their expectations with regards to each of the five service quality dimensions of the gap model. Finally, a question about the

willingness to recommend the service was included in our questionnaire.

Sampling and Surveying

Five-hundred questionnaires were handed out to a random sample of patients at the clinic. Patients were invited to participate in the research by filling in the questionnaire at home and to send it in directly to the University in a self-addressed, stamped envelope. This resulted in a total of 291 usable questionnaires, or a response of 58.2%

RESULTS

Descriptive Analysis

According to clinical records, our sample could be considered representative of the total population. The results also compare well to previous research in this area of health care service (Meade et al. 1990; Manga et al. 1993). Fifty-three percent of the respondents were female and 47% of the respondents were males. Seventy percent of the respondents were younger than 50 years old. The most frequently cited reasons for treatment relate to back pain (66.6%) and neck pain (55.6%), either with or without radiation. Ninety-five percent of the patients have cited more than one reason for treatment. Thirty-five percent of the respondents in our sample have undergone treatment for a period of one to six months. Finally, the large majority (57.9%) was referred to the clinic through positive word-of-mouth communications from friends, family and acquaintances.

As far as the SERVQUAL dimensions are concerned relatively negative quality (i.e. P - V) scores were found for two of the empathy-based items personal attention (-0.23) and personal care (-0.15). The ranking of the SERVQUAL dimensions in terms of their relative importance yielded an order lead by empathy (23.0) and closed by tangibles (14.9). Eighty-two point nine percent is either satisfied or very satisfied with the service outcome, while 91.1 is either satisfied or very satisfied with the service delivery process. With regards to disconfirmation, the highest negative disconfirmation score is assigned to the SERVQUAL dimension empathy (6.7%), while

assurance receives the highest positive disconfirmation score (71.8%). There is a relatively large group of patients whose expectations are confirmed (32.8%). Almost 81.6% is definitely willing to recommend the chiropractic service to friends, family and acquaintances. This is undoubtedly due to the high satisfaction scores which were found. Indeed, both correlations between service delivery and service outcome satisfaction and willingness to recommend are .67 (p < .000).

Model Test

A model containing the following variables was subsequently tested: expectations (EXP), perceptions (PER), disconfirmation (DIS), the quality of the core service (QUA) and the overall satisfaction (OSAT) which is the mean of process and outcome satisfaction. (The difference score between expectations and perceptions can not be used as an indicator for the quality of the service delivery because it can almost perfectly be explained by the expectations and the perceptions. This would lead to multicollinearity with which the model can not be validly tested.) Table 1 depicts the correlations between the relevant variables.

Table 1
Correlations Between Variables

	PER	DIS	QUA	OSAT
EXP	.72	.34	.44	.36
PER		.48	.56	.56
DIS			.29	.40
QUA				.73

All coefficients significant at p < .000

EXP: expectations; PER: perceptions; DIS: disconfirmation; QUA: quality; OSAT: overall satisfaction.

There is a clear positive relation between expectations, perceptions, quality, and satisfaction, as was expected. Also in accordance with the recent findings in the literature, it was found that

perceptions are more strongly related to disconfirmation, quality and satisfaction than expectations.

The correlation matrix, however, does not present evidence on the sequential order of quality and satisfaction. Additional analysis is needed here. Therefore, we estimated the parameters of the model with the help of two-stage-least squares. In this analysis perceptions are used as an indicator for quality and disconfirmation is used as an indicator for satisfaction. Furthermore, quality and satisfaction are mutually dependent. The results of this analysis are shown in table 2.

Table 2
Two-Stage-Least-Square Analysis; Beta Coefficients for the Relationship Between Quality and Ddis)satisfaction

independent	QUA	OSAT	R²
dependent			
QUA		.72(p < .000)	0.15
OSAT	.98(p < .000)		0.36

All coefficients significant at p < .000

EXP: expectations; PER: perceptions; DIS: disconfirmation; QUA: quality; OSAT: overall satisfaction.

From table 2 it can be concluded that the best model is the model that depicts quality as an antecedent of satisfaction. The beta-coefficient is the highest and the model has the highest explanatory power. Therefore, the ultimate model will be tested with satisfaction as the dependent variable and quality as one of the independent variables. (However, the dependence of quality on satisfaction may not be totally excluded based on these results.)

Path-analysis was used to test the ultimate model. Therefore, we had to test 3 submodels separately. First, the submodel with disconfirmation as the dependent variable and expectation and perception as the independent variables was tested. Next, the submodel with quality as the dependent variable and expectations, perceptions and disconfirmation as the independent variables

was tested. Finally, a submodel with satisfaction as the dependent variable and expectation, perception, disconfirmation and quality as independent variables is tested. These 3 submodels together provide insight into the effects of the independent variables on the dependent variables. The total effect of the independent variables on satisfaction can be divided in direct and indirect effects. The indirect effect is the effect of a independent variable via another independent variable.

Table 3 provides an overview for the 3 submodels that were used in this study.

Table 3
Path-Analysis According to 3 Submodels

Model 1:	DIS = f(EXP, PER)
Model 2:	QUA = f(EXP, PER, DIS)
Model 3:	OSAT = f(EXP, PER, DIS, QUA)

The results of the path-analysis are rendered in Table 4.

Table 4
Results of Path-Analysis of the 3 Models;
Beta Coefficients and Explained Variances

	Model 1	Model 2	Model 3
dependent	DIS	QUA	OSAT
EXP	-.03ns	.07ns	-.14*
PER	.50**(.48**)	.48**(.55**)	.25**
DIS		.05ns	.15**
QUA			.60**
R^2	.23	.30	.58

EXP: expectations; PER: performance; DIS: (dis)confirmation; QUA: quality; R^2: adjusted explained percentage of variance.

Table 4 reveals that in Model 1 and Model 2 the only significant independent variable is perception. Therefore we re-tested these models with perception as the only independent variable.

The results of this analysis are given in brackets in Table 4. The results of this retest are used for computing the total and indirect effects of the different independent variables which are shown in Table 5.

Table 5
Direct and Indirect Effects on Quality
and (Dis)satisfaction

dependent:	OSAT		
	total	indirect	direct
independents:			
EXP	-.14	.00	-.14
PER	.65	.40	.25
DIS	.15	.00	.15
QUA	.60	.00	.60
dependent:	QUA		
	total	indirect	direct
independents:			
EXP	.00	.00	.00
PER	.55	.00	.55
DIS	.00	.00	.00

Furthermore, Figure 3 shows the path coefficients of the ultimate model.

Figure 3
Ultimate Model
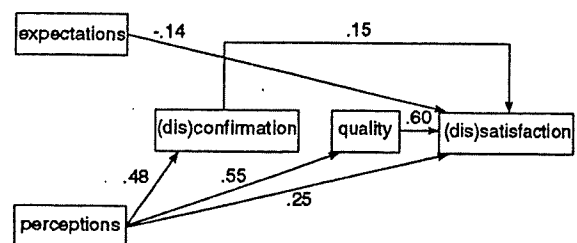
The results show that perception is the most important indicator of service quality and that perception and quality together are the most important indicators of overall satisfaction. Perception has both a direct and an indirect effect (via both (dis)confirmation and quality) on overall satisfaction, where the indirect effect seems to be even more pronounced than the direct effect. The

effect of disconfirmation on satisfaction is relatively small as well as the negative effect of expectations on satisfaction.

DISCUSSION

The purpose of this paper was to investigate the conceptual relationship between service quality and customer satisfaction and to decide on the most appropriate focus in the management of customer relationships; management-by-service-quality or management- by-satisfaction? The review of the literature suggests that theoretical and empirical evidence for a particular sequential order has remained inconclusive. However, recently there seems to be a tendency to treat (service) satisfaction as a superordinate construct to service quality. Our initial model was formulated in accordance with this tendency. However, in our analysis we explicitly tested whether service quality is an antecedent of satisfaction quality or vice versa. The results of our empirical study revealed that service quality should best be treated as an antecedent of overall satisfaction.

In addition, the perception of the service delivery is another important antecedent of overall satisfaction. It not only has a significant direct effect on overall satisfaction but also an indirect effect via service quality and (dis)confirmation. It should be noted that the effects of expectations and disconfirmation on overall satisfaction are small, while they do not seem to effect service quality at all. This seems to be in line with the differences between the dominant models of service quality and satisfaction. Ultimately, the key players are perception, service quality and overall satisfaction.

The total explanatory power of the ultimate model which also incorporates expectations and disconfirmation is quite promising for the field of satisfaction research. From a theoretical perspective, the most important finding of our empirical study is that overall satisfaction should be treated as a superordinate construct to service quality. From this perspective, quality can be viewed as one of the factors that determine customer satisfaction.

Thus, our findings suggest that management-by-satisfaction is the most preferable approach for service providers, but that the impact of both

perceptions and quality may certainly not be overlooked. Therefore, even in a management by satisfaction approach attention will have to be paid to the perceptions that customers have with regards to the various service quality dimensions. This is consistent with recent findings (Iacobucci et al. 1994) that 'satisfying' perception of the core service is only a minimum requirement for satisfaction per se. Absence of a minimum level core service will result in dissatisfaction, while the degree of satisfaction may be influenced by the presence of so-called peripheral service elements or extra's.

Part of the strength of a research project lies in the recognition of its limitations. The limitations of this study were, among others, the research setting, the static approach to measuring quality and satisfaction and the omission of actual patient behavior. In the first place, our findings exclusively pertain to the (high involvement) service setting of one chiropractic clinic. Secondly, all concepts (including expectations) were measured at one point in time which relates to the static approach. Finally, the effect of both quality and satisfaction on actual patient behavior such as repeat 'buying' behavior and word-of-mouth were not included in this study.

Directions for further research into the quality-satisfaction relationship should take into account the behavioral consequences of both concepts in terms of loyalty, repeat business and vulnerability to price competition, marketing costs and marketing share. In addition, other antecedent dimensions of satisfaction (e.g., personality traits, attributions, cost/benefit analysis and price) should be incorporated in a research model as well. Finally, both quality and satisfaction should be studied over time taking into account the dynamics of expectations and perceptions in various service areas.

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