Chapter 7
Customer Satisfaction Surveys and Barometers

7.1 Research Methodologies

Customer satisfaction research methodologies may be divided, according to their content and objectives, into qualitative and quantitative research (Dutka, 1995).

The main aim of qualitative research is to obtain detailed information and additional explanations on customers' attitude and opinions. This justifies the exploratory nature of qualitative research. The main characteristics of qualitative research include the following (Taylor and Bogdan, 1975):

- Open-ended (probing) questions are used, and thus customer responses are not given in a predefined format.
- The number of respondents is small, but the research gives the ability to analyze in detail customer behavior.
- The results are based on responses given by customers, as well as on observation.
- Usually generalization of results is not possible.

The most typical examples of customer satisfaction qualitative research are discussed in Dutka (1995), Naumann and Giel (1995), Woodruff and Gardial (1996), and Kessler (1996) and concern mainly in-depth interviews, focus groups, observations, and advisory groups.

In-depth interviews are personal interviews with customers, which generally do not have a formal structure. Thus, questions are rather general and nondirective and customer responses are not given according to a predefined set of choices, but instead allow the respondent to state whatever thoughts occur (Dutka, 1995). However, although a structured questionnaire is not used, the interviewer should prepare a detailed discussion outline and control the interview by providing the necessary order and structure. Usually, the interview is rather lengthy (1-2 hours)

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and it is recorder in order to avoid bias created by interviewer. Since the interview will attempt to draw out attitudes and beliefs which respondents find difficult to articulate, well practiced interview skills and a good understanding of appropriate interview techniques are necessary (Hill, 1996).

On the other hand, focus groups refer to discussions involving a group of customers (5-10 persons) who share common characteristics. The participants have a free discussion for about two hours expressing opinions, viewpoints, and perceptions about a predefined topic. Similarly to in-depth interviews, a discussion outline is necessary. The role of the moderator (facilitator) is important since he/she uses this outline to ensure that the relevant topics are covered in sufficient depth, to offer well-prepared questions for discussion, and to keep the session on track in terms of both content and time (Dutka, 1995). The purpose of focus groups is the same as in-depth interviews, i.e. to improve the understanding of all aspects of the customer-supplier relationship (Hill, 1996). The main difference refers to potential interactions among the participants, which often stimulate thinking in a manner not possible with other interviewing techniques.

The information collected by focus groups heavily depends on the synthesis of the group. For this reason, it is usually preferable to recruit a number of participants having different characteristics (Gerson, 1993). An analytical presentation of planning and conducting focus groups may be found in Taylor and Bogdan (1975), Krueger (1980), Greenbaum (1988), and Morgan (1988), whereas special cases of semi-structured interviews are presented in Reynolds and Gutman (1988).

In several cases, customers have difficulties in articulating their relationship to products or services, since they are not always consciously aware of their needs and expectations. In addition, interviewers may be inhibiting, time consuming and biased by the perspective of the interviewer, while responses may also be insincere (social desirability bias). Thus, in order to overcome these problems, direct observation is preferred (Woodruff and Gardial, 1996). In this context, the collected qualitative information is based on the observation of customers during the purchase or use of a product or service (sometimes it may cover customers' post-usage evaluations). There are several and quite different observation techniques. Some of them have the form of official observations by employees trained for this particular task, or they may be done by employees that have a direct contact with costumers (e.g. salesmen, technicians, etc.). In other cases, observations use video recording to reveal areas of customer dissatisfaction. A large number of publications refer either to more general issues about observation techniques (Taylor and Bogdan, 1975; Webb et al., 1981; Denzin, 1989; Griffin and Houser, 1993) or to their usage in customer satisfaction applications (Woodruff et al., 1993; Naumann and Giel, 1995; Kessler, 1996; Woodruff and Gardial, 1996; Massnick, 1997).

Finally, advisory groups are another type of qualitative research that is very similar with focus groups. Advisory groups are volunteer groups of customers that meet at regular intervals to provide in-depth suggestions and direction to a company (Kessler, 1996). Sometimes, other experts are also included (e.g. community or industry leaders, retired CEOs). The main difference compared to focus groups

is that advisory groups are more homogenous and they are set up to provide input over time, since they are considered to last for a long period (usually 1-2 years).

Table 7.1 presents the main advantages and disadvantages of the most important types of qualitative research (in-depth interviews and focus groups), while a more detailed comparative analysis is given by Griffin and Houser (1993) and Woodruff and Gardial (1996).

Contrary to the previous options, the aim of quantitative research is to develop statistically reliable information from sample data that can be generalized to a larger population (Dutka, 1995). Quantitative research uses a relatively short structured questionnaire, while the survey sample should be large enough in order to provide a statistically reliable set of responses. The collected information is also analyzed using specific statistical techniques and quantitative tools. In the case of customer satisfaction measurement, this type of research is focused on the quantification of satisfaction information and its tracking and comparison over time. The most frequently used types of quantitative research are mail surveys, personal interviews, and telephone surveys (Gerson, 1993; Massnick, 1997).

Table 7.1 Comparing main qualitative research options (adopted from Dutka, 1995)

Type of research	Advantages	Disadvantages
In-depth interviews	Complex questions can be explored.	Cost is greater than with other methodologies.
	More in-depth responses are obtained.	Time for completion is longer.
	Responses that might be viewed negatively by a group are easier to obtain.	Number of completed interviews is smaller.
	Use of visual aids is very effective.	Aggregating information from individual interviews is rather difficult.
	Medium skill level is required for interviewers.	Difficult to determine changes in customer attitudes over time.
	Customer's reactions may be observed.	
	Customers are more likely to participate (than with focus groups).	
Focus groups	Complex questions can be explored.	Responses may be affected by other customers.
	Group interactions generate information that is not otherwise obtainable.	It is difficult to analyze in details the group attitudes and expectations.
	More in-depth responses are obtained.	Results cannot be generalized to a larger population.
	It is an excellent method for generating ideas.	Information is almost qualitative than quantitative.
	Use of visual aids is very effective.	A skilled facilitator is required.
	Heterogeneity may cause creative argument.	The interpretation and analysis of responses are rather difficult.
	Participation can be attractive to customers.	Group synthesis may discourage participation.
	Customer's reactions may be observed.	

Mail surveys constitute a typical type of quantitative research that is widely used by business organizations, given the relatively lower cost. Mail surveys can easily cover different geographical areas and large customer samples. Moreover, technology may provide effective solutions regarding the management of collected information (e.g. data entry, customer database development). Mail surveys appear as a good solution in cases where directly contacting customer (e.g. by telephone or personal meeting) is difficult or impossible.

On the other hand, personal interviews have a form of direct communication with customers, and thus they help in establishing a customer relationship philosophy. This is the main reason why they are preferred in many cases by business organizations, although they present several disadvantages (high cost, experienced interviewers, etc.). Personal interviews also allow for observing and analyzing customers' reactions, while at the same time interviewers may give explanations and use visual prompts.

Finally, telephone surveys seem to combine the most important characteristics of the previous quantitative research options. In particular, a telephone survey is a form of personal contact with customers, while at the same time, it can easily cover distanced geographical areas and large customer samples. The most important advantages of telephone surveys are their ability to reduce non-response bias and, using modern technologies, to provide immediate availability of data.

The most important advantages and disadvantages of the aforementioned types of quantitative satisfaction research are presented in Table 7.2, while several publications present analytically the various alternatives of organizing and conducting these surveys (Dillman, 1978; Frey, 1983; Erdos, 1983; Gerson, 1993).

It should be emphasized that choosing qualitative or quantitative research is not an either-or situation, and as noted by Dutka (1995), these methodologies should be combined in order to maximize their individual strengths (see section 7.2).

An alternative classification of survey researches, based on the different types of interviewing processes, is given by Varva (1997, 2002):

1. Self-administrated, such as mail or fax questionnaire.
2. Interviewer administrated, like personal interview, telephone interview, and chat room interview.
3. Machine administrated, such as Internet questionnaire, email interview diskette-in-the-mail questionnaire, kiosk administrated, and interactive TV interview.

Finally, other types of research methods may be used to collect customer satisfaction information, including the following (Kessler, 1996):

- *Lost customer surveys*: They are mainly interviews with customers who have stopped buying the examined product or service (or significantly reduced their usage).
- *"Mystery" shopper*: They pose as customers of the examined organization and test the offered service quality.

- *New customer feedback*: It refers to a specially designed survey initiated after the customer has sampled the product or service.

Table 7.2 Comparing main quantitative research options (adopted from Dutka, 1995)

Type of research	Advantages	Disadvantages
Mail surveys	Cost is sometimes lower per completed interview (depending on response rate).	Response rate is generally much slower and lower than with other methodologies.
	Respondents are under no pressure to provide quick answers.	Bias due to non-response is greater (than with telephone surveys).
	Different geographical areas may be easily covered.	Quality control is difficult or impossible (questions can be skipped, open-ended responses are not probed, etc.).
	There is no interviewer bias.	
	Questionnaire completion is unintrusive and anonymous.	Information from open-ended questions can be negligible and incomplete, since probing by interviewer is not possible.
	Customers may decide how and when they will respond.	The questionnaire has to be short and questions should be simple.
Personal interviews	Interviewing can be monitored and supervised, thus quality control is easier.	The cost is relatively high, especially in business markets.
	The questionnaire may be less simple.	Time for completion is longer.
	Customer's reactions may be observed and analyzed.	Interviews need good planning and control if an accurate sample is to be achieved.
	It is a two-way communication that allows explanations and prompts.	It is difficult to cover different geographical areas.
	Visual prompts are possible.	Interviewer bias may be greater.
	It is an opportunity to directly and personally communicate with customers.	Questionnaire completion may be intrusive.
		Interview should not be interrupted.
		Interviewers should be well trained.
Telephone surveys	Interviewing can be monitored and supervised, thus quality control is easier.	Cost may be higher than with mail surveys (depending on response rate).
	Response rate is much greater than with mail surveys, thus reducing bias associated with non-response.	Some respondents may be difficult to reach by telephone.
	Time to complete the project is shorter.	Telephone interviewers often generate quick responses, allowing inadequate time for in-depth thinking.
	Different geographical areas may be easily covered.	Interviewer bias may be greater.
	Cost is lower than with personal interviews and may not be greater than with mail surveys.	Questionnaire completion may be intrusive.
		Interview should not be interrupted.
	The questionnaire may be less simple.	Visual aids are impractical though not possible.
	It is a two-way communication that allows explanations and prompts.	
	Results may be available shortly.	Interviewers should maintain respondents' interest and concentration.

- *Perceptual research*: It measures how a total customer pool perceives the examined organization compared to the competition.
- *Real time fixes*: It is not a separate tool, but happens when an interviewer/employee is talking to a customer (e.g. customer calls to complaint or the employee observes that a customer is dissatisfied and offers to help).
- *Transaction reports*: They are feedback pieces of transactions that may also help to fix potential problems.
- *Usability tests*: They reveal how people use the products, and may help segmenting customer base.
- *Win/Loss reports*: They usually investigate the reasons why a company won or lost a competitive bid.

Although customer satisfaction surveys appear similar to other types of marketing research and public opinion measurement, it should be emphasized that they are very special survey situations. As Vavra (1997) underlines, customer satisfaction measurement should be a census (all customers should be given the opportunity to participate) and it should be implemented in a continuous basis, while a marketing research is based on a statistically representative sample which is conducted when collecting particular information is required. In addition, customer satisfaction measurement is not only focused on collecting customer-related information, but it also aims at communicating with customers.

7.2 Survey Planning and Preliminary Analysis

The first and one of the most important stages of a customer satisfaction measurement program concerns the survey planning. It is mainly a preliminary stage that aims at avoiding potential errors and ensuring appropriate results by designing an effective research process.

The general process of a customer satisfaction survey planning is presented analytically in Figure 7.1 and consists of the following main steps:

1. *Determine survey objectives*: It is the most important step in this general process, since it may affect all the other steps when designing and conducting a customer satisfaction survey.
2. *Determine satisfaction dimensions*: In this step, the set of customer satisfaction dimensions, as well the related hierarchy should be determined (see section 7.3.2).
3. *Determine measurement process*: Based on the survey objectives and the applied customer satisfaction measurement program, the detailed measurement process should be determined in this step. In addition it should be integrated with other corporate processes and information from the organization (e.g. customer call centers, complaint management systems, total quality programs).
4. *Determine sample size and survey procedure*: This particular step concerns the determination of the sampling process (type of sampling process, sample size,

etc.). Moreover, the type of survey and the communication procedure with customers should also be determined.

5. *Develop questionnaire*: Based on the decisions made during the previous steps, the questionnaire is developed. The importance of this step is justified by the fact that the questionnaire is the main survey instrument (see section 7.3.1).
6. *Test questionnaire and refine*: This final step refers mainly to the pilot survey, which aims at testing the effectiveness of the research methodology (see section 7.4.1).

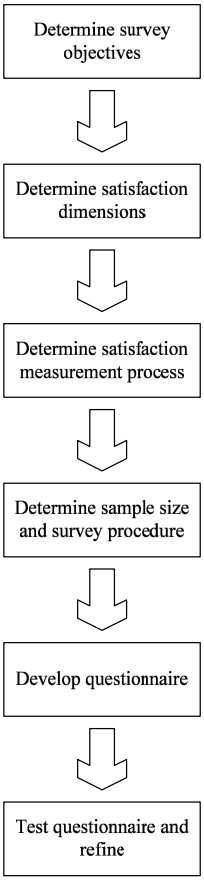


Fig. 7.1 Main steps in customer satisfaction survey planning

During the implementation of a customer satisfaction measurement program, the complementary use of qualitative and quantitative research should be emphasized. As shown in Figure 7.2 the entire process is inherently interactive and illustrates that in fact, there is no problem of choosing between these two types of research. The process usually starts with a qualitative research (depth interviews,

focus groups, etc.) in order to develop an exhaustive list of satisfaction attributes. Then, this list is reduced and the main satisfaction dimensions are determined (see section 7.3.2). Based on this information, the quantitative research is conducted and the results obtained from the customer satisfaction survey are validated. Finally, the new customer satisfaction program should be redesigned, taken into account potential revisions and improvements (e.g. revised satisfaction dimensions).

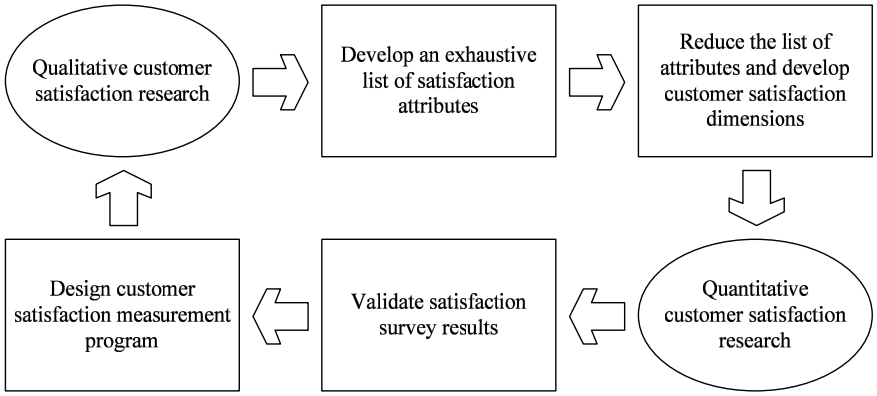


Fig. 7.2 Combining qualitative and quantitative research

In general, a qualitative satisfaction survey is combined with additional secondary data, which are available by the business organization or by other external sources. This research is the main part of the preliminary analysis, which is an exploratory stage in any research project. The main aim of the preliminary analysis is to ensure that the researcher understands enough about the composition and attitudes of the target population to draw an accurate sample and to design an appropriate questionnaire (Hill, 1996).

Finally, determining when customer satisfaction surveys should be conducted is another important issue that often is not given enough attention. In most of the cases, satisfaction surveys are conducted at regular time intervals, usually on an annual basis. Although this selection of certain times of the year looks arbitrary, Vavra (1997) notes that there are two general explanations: convention and events. In the first case, customer satisfaction is surveyed on a yearly basis when the organization's resources are available and it is usually combined with the preparation of the organization's planning (e.g. financial, strategic). In the second case, some major events (e.g. yearly industry conference, end of tourist season) may trigger administration of a satisfaction survey. However, there is no enough justification why a period of 365 days, or any other time interval, gives the optimum frequency for conducting customer satisfaction surveys. In fact, this decision should take into account the market trends and the implicit customers' attitude change (Hill, 1996). Thus, in case of a new company or product/service, intense competition or short market cycle, the satisfaction survey should be conducted

more frequently, while in the opposite situation (stable market conditions, long market cycle, etc.) the frequency may be smaller.

However, many researchers urge that customer satisfaction should be measured continuously, in order to reinforce organization's commitment to quality. A continuously ongoing customer satisfaction program may help to establish a permanent customer satisfaction, and thus support business organizations to adopt a continuous improvement philosophy. Besides, in many cases when there is a direct contact with costumers, the satisfaction information is constantly available.

7.3 Questionnaire Design

7.3.1 Main principles

Questionnaire's content and structure are critical factors for the success of any marketing survey. In fact, it has been said that a survey is only as good as the questions it asks (Dutka, 1995).

Although many believe that the questionnaire development is a relatively simple, straightforward task, this is not true, since preparing an effective questionnaire requires both experience and patience. There are several decisions that have to be taken in the questionnaire design process, like the contents of the questionnaire (what it will be asked), the type of questions, including wording and measurement scales (how it will be asked), as well as the structure of the questionnaire (order of questions).

In any case, it should be emphasized that a questionnaire is a communication tool between an organization and its customers (Naumann and Giel, 1995). However, it is not a one-way communication device, whereby information is collected from customers, but rather an interactive communication tool. Figure 7.3 presents the different steps in this two-way communication process, where, as in any communication form, there is the risk of erroneous coding or decoding of the transmitted information.

Although there is no analytical methodological framework for questionnaire design in survey research, the major principles that should be considered are (Fowler, 1993):

- The questionnaire should be kept simple and comprehensive.
- The questions should be specific and single-minded.
- The structure of the questionnaire should help respondents to give their answers.

In this context, Vavra (1997) notes that the rule of thumb for successful question writing is to *"keep it short, keep it simple, and single-minded"*, namely KIS^3. Following these critical rules, a questionnaire helps in maximizing the participa-

tion of respondents and ensuring the reliability and validity of the collected information.

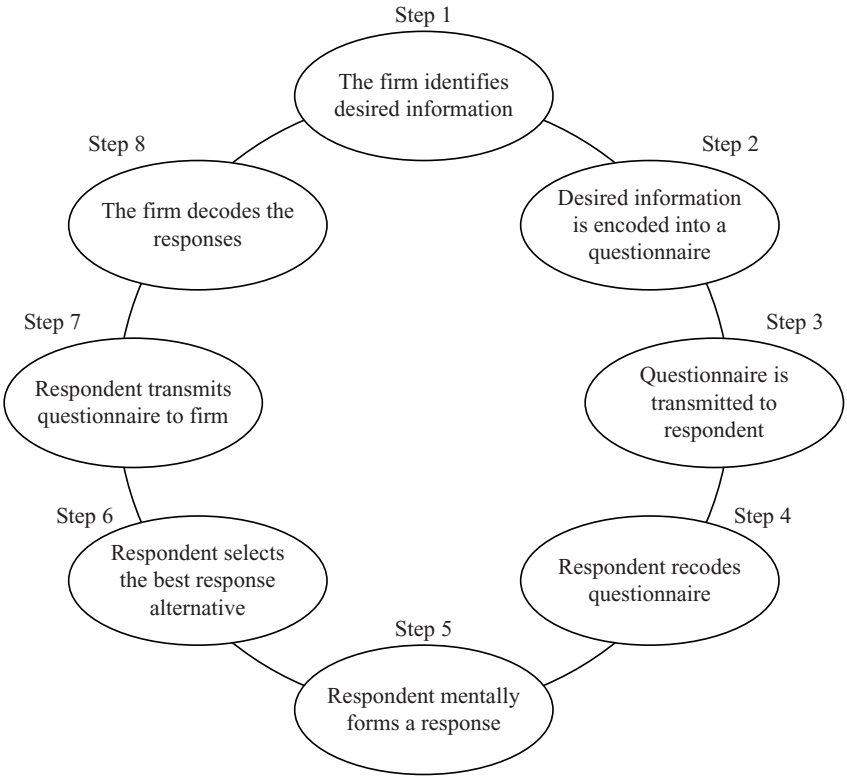


Fig. 7.3 The questionnaire as a two-way communication process (Naumann and Giel, 1995)

Usually, a questionnaire designed for customer satisfaction surveys consists of the following main sections (Dutka, 1995; Naumann and Giel, 1995; Vavra, 1997):

1. *Introduction*: This section welcomes customers explaining several issues of the satisfaction survey, such as the reasons why the survey is conducted, how the particular customer has been selected, and also the reasons for which the customer should participate in the survey.
2. *Demographics*: The questions contained in this section are related to the basic demographic characteristics of the customers, like gender, age, marital status, etc. Furthermore, other customer characteristics that may segment the customer sample may be also included in this section (e.g. purchase preferences, frequency of use, etc.). This information gives the ability to examine if the sample is representative, and to perform additional segmentation analyses based on variables that are believed to discriminate customer population.

3. *Satisfaction questions*: This is the core part of the questionnaire, since it refers to questions about the overall and partial satisfaction based on the assessed dimensions and measurement scales (see sections 7.3.2 and 7.3.3). Usually, these questions have the form of performance judgments taking into account the different attributes of the examined product or service.
4. *Behavioral questions*: This section concerns the general customer behavior or attitude. The questions included usually refer to the satisfaction consequences or outcomes, like repurchase intentions, probability of recommending the product/service to other consumers, etc.

An important issue of the questionnaire is the order of questions. As a general rule, simple questions that are easily answered should appear first (Converse and Presser, 1986). Furthermore, the overall satisfaction question may be placed before or after the partial satisfaction questions (i.e. satisfaction/performance judgments for particular attributes of the examined product/service). The researchers that favor the first option note that systematic errors are avoided by applying this approach. This is because customers, by answering the overall satisfaction question firstly, have the ability to interpret the meaning of this question and "naturally" give their judgment. Several researchers pinpoint that negative customer responses will be increased if the overall satisfaction question is firstly asked (Wittink and Bayer, 1994). On the other hand, if the overall satisfaction question is asked after the evaluation of partial satisfaction dimensions, the consistency of collected information will be increased. This is because customers have the ability to give their overall judgment taking into account their previous answers. This particular approach is preferred when an additive assessment model is used (e.g. MUSA method). Moreover, with this approach it is possible to identify potential consistency problems that may arise due to incomplete sets of satisfaction dimensions.

In any case, it should be noted that the overall satisfaction question is considered necessary, and thus it should always be included in a satisfaction questionnaire (Oliver, 1997), given its aforementioned ability to examine the consistency of customer judgments. Moreover, an overall customer satisfaction question offers an additional variable for any kind of data analysis.

As a matter of fact, in several cases it is preferable to measure overall satisfaction with more than one question/variable (Hausknecht, 1990). Detailed examples of alternative forms and presentation formats of overall customer satisfaction question are presented by Hauser (1991), Wittink and Bayer (1994), Gale (1994), and Ryan et al. (1995).

Another important issue in questionnaire design concerns the wording of questions, which always requires experience, skill, and attention to detail (Dutka, 1995). Payne's (1951) book *"The art of asking questions"* is considered classic in questionnaire wording, while several other publications study how collected information is affected by alternative wording of questions (Converse and Presser, 1986; Fowler, 1993, 1995; Schuman and Presser, 1996).

Finally, it is important in several cases to provide customer with additional information and guidelines in order to help the questionnaire completion process. According to Alreck and Settle (1995) these guidelines may include the explanation of the satisfaction dimensions that will be evaluated, the criterion on which this evaluation will be based on, the way in which the provided measurement scale will be used, and the way in which the response should be given.

Several other particular issues for the questionnaire design in customer satisfaction surveys (e.g. satisfaction dimensions, measurement scales, common errors) are discussed in sections 7.3.2, 7.3.3, and 7.4.2.

7.3.2 Satisfaction Dimensions

Determining the detailed factors that affect customer satisfaction is an important stage in any satisfaction survey. These factors may appear having different forms, depending on the perspective from which someone studies the satisfaction measurement problem. Thus, the term "satisfaction dimensions" is frequently related with other concepts, like product/service attributes, measures of effectiveness, measures of performance, criteria, customer requirements, etc. Although related, these terms present significant differences: e.g. dimensions may refer to aggregated factors, attributes mainly concern product/service characteristics, and customer requirements are associated with desired end-states. However, as already mentioned, all these terms may be considered as an attempt to identify factors that may specify customer satisfaction from different viewpoints.

The applied measurement technique may also affect the way these factors should be studied. For example, in the context of the MUSA method, these satisfaction dimensions should comprise a consistent family of criteria having the properties of monotonicity, exhaustiveness, and non-redundancy (see also section 4.1.1). In addition, the MUSA method requires that the assessment of satisfaction dimensions should follow the principles of criteria modeling in the context of multicriteria decision analysis and preference aggregation/disaggregation, as shown in Figure 7.4 (see also Roy, 1985; Roy and Bouyssou, 1993).

Similarly, in the context of Multiattribute Utility Theory, a hierarchical structure is used in order to model objectives, attributes (achievement of objectives), and values (Keeney, 1992). Thus, in addition to the previous properties, Keeney and Raiffa (1976) and Kirkwood (1997) suggest that the set of criteria, as well as their hierarchical structure, should be operational, decomposable, and minimal. In particular, fundamental objectives may help in creating and evaluating alternatives, identifying decision opportunities, and guiding the entire decision-making process, while their hierarchy should have the following properties (Keeney, 1992):

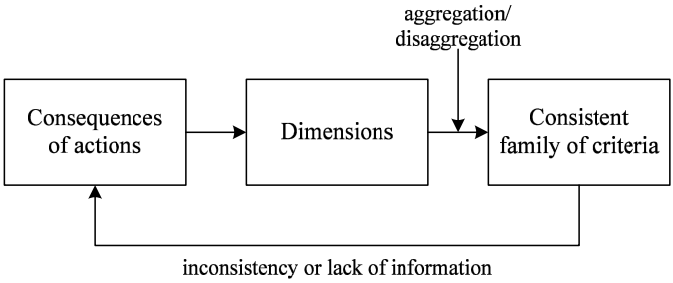


Fig. 7.4 Modeling process of decision criteria

1. *Essential*, to indicate consequences in terms of the fundamental reasons for interest in the decision situation.
2. *Controllable*, to address consequences that are influenced only by the choice of alternatives in the decision context.
3. *Complete*, to include all fundamental aspects of the consequences of the decision alternatives.
4. *Measurable*, to define objectives precisely and to specify the degrees to which objectives may be achieved.
5. *Operational*, to render the collection of information required for an analysis reasonable considering the time and effort available.
6. *Decomposable*, to allow the separate treatment of different objectives in the analysis.
7. *Non-redundant*, to avoid double-counting of possible consequences.
8. *Concise*, to reduce the number of objectives needed for the analysis of a decision.

The previous framework of multiple criteria decision modeling may be used in the assessment process of customer satisfaction criteria. Although, this is not a decision situation with multiple actions (or alternatives), customers may be considered as decision-makers who evaluate a product or service according to their preference or value system.

Organization's internal knowledge and data (e.g. salespersons reports, company records for customer complaints or critical incidents) are the initial source of information that may be used in determining customer satisfaction criteria. Additionally, this information may encourage employees' involvement in the customer satisfaction measurement program. However, the process should be extended beyond the company and into the arena of customer, particularly when requirements and expectations are to be defined (Dutka, 1995). As emphasized by several researchers, satisfaction measurement should be always studied from the customer's perceptive, thus a direct communication with customers is always necessary (having any of the forms discusses in section 7.1).

In several cases it is useful to assess the satisfaction criteria using a value or treelike structure, as mentioned in section 5.2. There are two main approaches to

developing this value hierarchy (Kirkwood, 1997), which are based on whether or not sources of customer satisfaction or dissatisfaction are available:

1. *Bottom-up approach*: It is appropriate when sources of customer satisfaction or dissatisfaction are known. The previous detailed attributes are aggregated into more general satisfaction dimensions in order to develop the value hierarchy. According to this approach, customers with different levels of satisfaction/dissatisfaction are examined to determine the ways in which they differ.
2. *Top-down approach*: It is preferred in situations where the aforementioned information is not available. The approach decomposes customer overall satisfaction into a set of detailed characteristics (related to the product/service or the organization) that affect it. The process is repeated by subdividing these characteristics into more detailed components, until the consequences of this decision problem are fully described and the aforementioned properties are satisfied (Kirkwood, 1997).

Detailed examples of developing value hierarchies in the criteria assessment process may be found in Keeney and Raiffa (1976), Keeney (1981, 1988, 1992), Buede (1986), Bouyssou (1989), Corner and Kirkwood (1991), Gustafson et al. (1992), Dutka (1995), and Kirkwood (1997).

Other approaches used to identify satisfaction dimensions, mainly originated from the marketing field, are based on the means-end theory, which also assumes a hierarchical representation of how customers view products or services. In particular, it suggests that the product-customer relationship may be represented by three levels, as shown in Figure 7.5: attributes (what the product/service is, its features, its component parts or activities), consequences (what the product does for the user, the outcomes, desired or undesired), and the desired end-states (the user's core values, purposes and goals). Woodruff and Gardial (1996) emphasize that several characteristics of this hierarchy should be considered in practical applications. For example, the levels of this hierarchy are interconnected in the sense that lower levels are the means by which the higher level ends are achieved. Moreover, the level of abstraction and the stability over time increase at higher levels in the hierarchy.

In this context, Woodruff and Gardial (1996) propose a methodology for identifying strategically important customer value dimensions as shown in Figure 7.6. Initially, a large and exhaustive list of value dimensions is developed (usually by conducting a series of personal interviews with customers), which is then reduced taking into account three main criteria: similarity, actionability, and importance to customers (see also Vinson et al., 1977; Gutman, 1982; Gutman and Alden, 1985; Perkins and Reynolds, 1988).

Laddering theory also offers a methodological framework for identifying the relations among customers' motives, requirements, and attributes. Reynolds and Gutman (1988) have developed a process for developing such a hierarchy, consisting of the following main steps (Vavra, 1997):

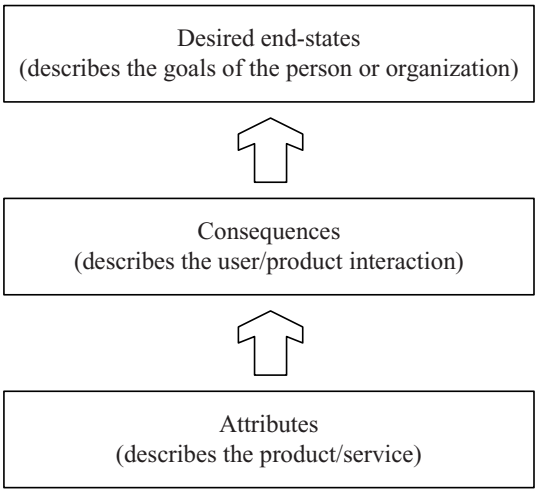


Fig. 7.5 A value hierarchy (Woodruff and Gardial, 1996)

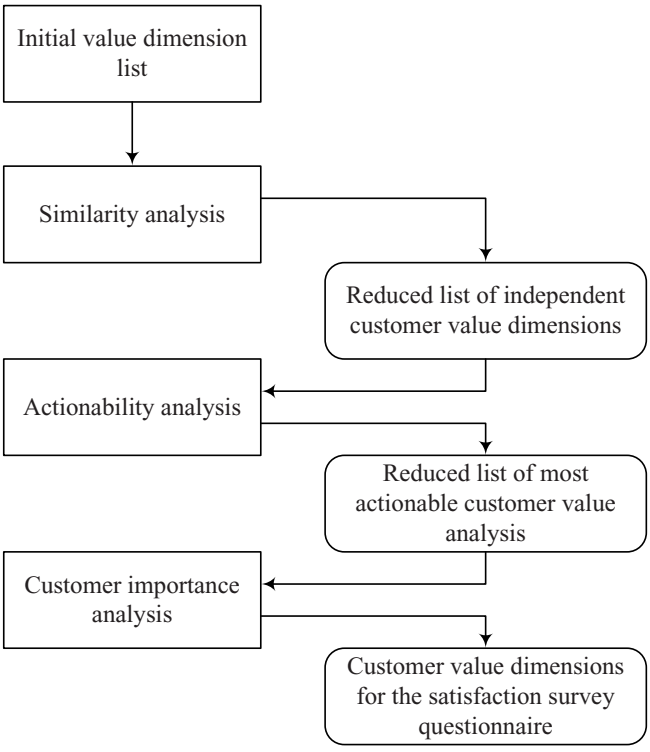


Fig. 7.6 Determining the importance of customer value dimensions (Woodruff and Gardial, 1996)

1. Utilize a technique that may discover the product attributes which will be used in the hierarchy, like preference ordering, occasion differences, or the repertory grid (Kelly, 1955; Reynolds and Gutman, 1988).
2. Select the most important attributes, and use them in a series of directed, importance probing questions (i.e. for each attribute, first ask customer why it is important to him/her, then ask why the reason from the first question is important, and finally ask in what way the answer to the second question is important to him/her).
3. Code the attributes, requirements, and motives generated from the previous steps, and tabulate their relationship.
4. Create finally a hierarchical value grip displaying the overall linkage of performance attributes, requirements, and motives.

Generally, using customer requirements in order to identify satisfaction attributes is a common approach, since customer needs play an important role in the definition of product/service quality (see section 3.1). In fact, Juran (1988) suggests that needs may be represented in a three-level hierarchical structure that takes into account the customer requirements, the consequences, and the end-benefits of these requirements.

Several researches have attempted to determine a universally accepted set of satisfaction criteria, or performance attributes that may serve as satisfaction items. For example, Garvin (1988) proposes eight distinct dimensions of product quality:

1. Performance (basic operating characteristics).
2. Features (secondary characteristics added to basic features).
3. Reliability (probability that product will operate over time).
4. Conformance (degree to which a product's design and operating characteristics meet established standards).
5. Durability (measure of product life).
6. Serviceability (speed, courtesy, competence, and ease of repair).
7. Aesthetics (subjective personal judgments regarding how a product looks, feels, sounds, tastes, or smells).
8. Perceived quality (general image of the company, reputation, and other subjective perceptions based on advertising, brand name, etc.).

Dutka (1995) offers a similar list of dimensions that may be used in the assessment of satisfaction criteria. This list contains performance attributes related to the product, the service, or the purchase process (Table 7.3). The Servqual model may also provide a similar list for the case of service quality (see section 3.2.2). All these efforts focus on developing a common framework for customer satisfaction measurement, as analytically discussed in section 7.5.1.

According to Oliver (1997), none of the previous research attempts for developing a set of customer satisfaction criteria can be successfully generalized. Usually, these lists have to be modified in practical applications by adding, deleting or changing particular attributes in order to best fit the examined business organization. For example, additional service quality dimensions have been proposed in

practical implementations of the Servqual method, although it is a generally accepted methodology having numerous applications (see for example Doll and Torkzadeh, 1988; Holmlund and Kock, 1995). Thus, these lists may only provide general guidelines in the assessment process of satisfaction criteria. On the contrary, in the case of employee satisfaction measurement, it is much easier to develop a generally accepted list of satisfaction criteria, based on the applied framework (Hackman and Oldham, 1975; Loher et al., 1985; Fried and Ferris, 1987; Champoux, 1991).

Based on the previous discussion, it is evident that the customer satisfaction criteria may be business-related or they may refer to the product/service performance. However, customer satisfaction dimensions should not be confused with the decision criteria that a consumer uses in the product/service purchasing process (Oliver, 1997). Although these different sets of attributes may appear quite similar, the customer has additional knowledge regarding the product/service usage in the case of customer satisfaction measurement.

Finally, other categories of customer satisfaction criteria may be found in the literature. For example, Dutka (1995) suggests two main categories for the attributes used in customer satisfaction surveys:

- Transaction attributes (how a single contact is perceived).
- Image attributes (overall perceptions with the customer-company experience).

This categorization should be taken into account, given that image-related attributes may affect customer judgments regarding transaction-based attributes. Furthermore, overall satisfaction is most likely based on satisfaction from a series of individual transactions.

Table 7.3 Universal performance attributes (Dutka, 1995)

Category	Attributes
Attributes related to the product	Value price relationship Product quality Product benefits Product features Product design Product reliability and consistency Range of product or services
Attributes related to service	Guarantee or warranty Delivery Complaint handling Resolution of problems
Attributes related to purchase	Courtesy Communication Ease of convenience of acquisition Company reputation Company competence

In a similar context, Vavra (1997) mentions that customer satisfaction surveys usually tap three relatively distinct areas of customer-company interaction, which include: transaction performance (measure of performance associated with a particular customer-company interaction or its intermediates), functional performance (measure of performance in satisfying customer needs), and reliability performance (measure of performance over time).

7.3.3 Satisfaction Scales

As already mentioned in section 2.1, there are four major types of measurement scale: nominal, ordinal, interval, and ratio. The quantitative technique that will be used to analyze data depends mainly on the selected type of measurement scale.

There are several different scales that have been proposed in the context of customer satisfaction surveys, depending on the measurement item or the presentation form.

According to Woodruff and Gardial (1996) the measurement scales used in customer satisfaction surveys include the following main categories (Figure 7.7):

1. *Performance perceptions*: This category refers to the performance measurement of a product's/service's attributes (Figure 7.7a). Usually, customers are asked to rate these attributes on a poor-to-excellent scale. This is the typical approach when the aim is to evaluate satisfaction drivers (i.e. particular attributes that determine overall satisfaction feelings).
2. *Disconfirmation perceptions*: In these scales the main aim is to evaluate whether a customer perceives that the performance of a product or service on particular satisfaction dimensions exceeds (positive disconfirmation), equals (confirmation), or falls below (negative disconfirmation) a complexity standard (see also section 2.4.2). Since this is a comparison scale, it ranges from "much worse" to "much better" according to the selected comparison standard (Figure 7.7b). The problem of choosing between performance and disconfirmation scales is studied by Gardial et al. (1994).
3. *Satisfaction feelings*: This category refers to the measurement of customer's overall satisfaction and dissatisfaction feelings. There are two major approaches when using this scale: the cognitive (evaluative) and the emotional approach. The former uses the words "satisfaction" and "dissatisfaction" as anchor phrases at each end of the defined scale (Figure 7.7c), while the latter focuses on the emotional perspective of customer's evaluation, which may range from mild to strong (Figure 7.7d). The importance of measuring emotional feelings and emotional commitment has been stressed by several researchers (Edwards et al., 1994). Morevoer, alternative measurement scales may be used in order to evaluate customers' satisfaction feelings or emotions (Hausknecht, 1988, 1990).
4. *Satisfaction outcome*: There are several satisfaction outcomes which are frequently measured in customer surveys. These outcomes include repurchase in-

tentions, word of mouth, customer commitment or loyalty, and repeat buying. Usually, customers are asked to answer what are the chances that he/she will buy the product/service again, recommend it to family/friends, etc. using a scale ranging from "no chance" to "certain I will" (Figure 7.7e).

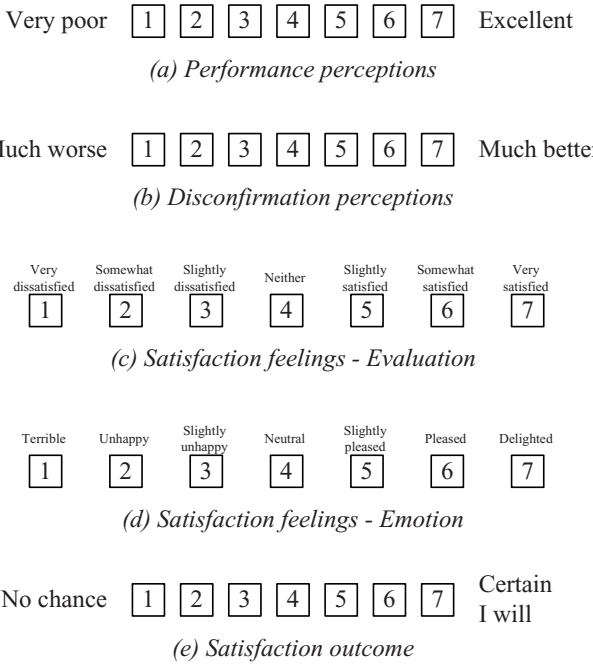


Fig. 7.7 Satisfaction scale types according to Woodruff and Gardial (1996)

Another classification of measurement scales for customer satisfaction surveys is given by Vavra (1997) and includes the following categories:

1. *Verbal scales*: This category mainly concerns ordinal scales and it is preferred in many cases since several researchers believe that this is the most colloquial way of assessing the respondent's state of mind. Such scales provide a continuum of verbal responses in a graduated order (Figure 7.8a). As already emphasized, the major disadvantage of this approach is the quantification of the scale, i.e. the estimation of the difference between the various scale levels. The choice of an appropriate vocabulary is also a difficult task in many situations. Special cases in this particular category are the scales having a checklist format where customers are asked to give a binary response (i.e. Yes/No) for the adequacy of a given service or the incidence of a given problem.
2. *Numeric scales*: This category usually refers to interval scales and attempts to overcome the problem of arbitrary quantification mentioned in the previous category. These scales are also more likely to escape the problem of multidi-

mensionality, although several researchers prefer to combine verbal and numerical scales in order to further assure that the employed scale is unidimensional. Usually, the number of satisfaction levels is assessed in such a way so as to be easily understood by customers (e.g. 0-10, 1-10, or 1-100), as shown in Figure 7.8b. One of most common problems in these scales refers to possible mixed meaning of the end-points.

3. *School grading scales*: These scales are used for performance measurement adopting a "school grading system", where grade A represents "excellent" and grade F represents "failing" (Figure 7.8c). The main advantage of this approach is that respondents are familiar and may easily understand the meaning of not only the end-points, but also the points in between. However, a school grading scale has an ordinal form, and thus it has similar disadvantages.
4. *Pictorial scales*: These particular scales are able to introduce an air of informality and humanness to a questionnaire. They appear as a useful approach when conducting face-to-face or self-completion surveys. These scales use pictures or graphs, instead of words, in order to depict the degree of gradation on the satisfaction scale. Usually, these pictures take the form of "smiley" faces or thermometers (Figure 7.8d).

(a) Verbal scale

Poor 1 2 3 4 5 6 7 8 9 10 Excellent

(b) Numeric scale

Poor A B C D F Excellent

(c) School grading scale

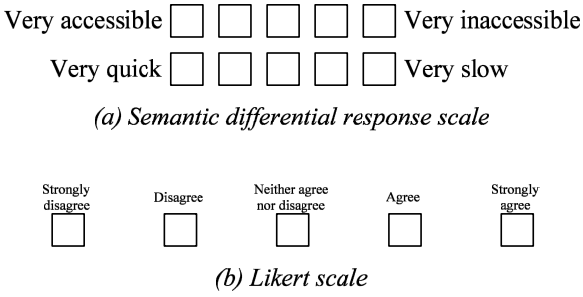
(d) Pictorial scale

Fig. 7.8 Satisfaction scale types according to Vavra (1997)

Another commonly applied measurement scale in customer satisfaction surveys refers to the semantic differential response scale. In this scale, a number of intervals separate two "bipolar" adjectives, i.e. adjectives of opposite meaning (Vavra,

1997). The end-points of the scale usually describe a satisfaction feeling or a performance attribute of the examined product or service (Figure 7.9a). Semantic differential response scales may be considered as a variation of pictorial scales, particularly when geometric figures of diminishing size are used in order to indicate different shadings of opinion.

Finally, Likert scales are the most widely used scales in any survey research (Likert, 1932; Lissitz and Green, 1975; Hayes, 1992; Dutka, 1995; Hill, 1996). These scales are designed to measure degrees of agreement with a specific statement. Figure 7.9b presents a typical Likert scale, but it should be noted that alternative forms of this scale, regarding its size or wording, have been proposed. Usually in customer satisfaction surveys, these statements refer to the adequate performance of a particular product's or service's attribute. Similar to the previous case, Likert scaling is a bipolar scaling method.



(a) Semantic differential response scale

(b) Likert scale

Fig. 7.9 Other satisfaction scale types (Hill, 1996)

It should be noted that the aforementioned types of measurement scales may be combined, when this is possible (e.g. verbal scales with smileys). Moreover, as noted in section 2.1, the type of measurement scale restricts the set of alternative quantitative techniques that will be used to analyze satisfaction data. In any case, the arbitrary quantification of a measurement scale should be avoided, since it may affect the validity of the collected information.

Other special cases of measurement scales used in customer satisfaction surveys are (Edwards and Keeney, 1946; Lodge, 1981; Hayes, 1992; Hill, 1996; Vavra, 1997):

- Magnitude estimation
- Thurstone's method of equal appearing intervals
- Guttman's scalogram
- SIMALTO (Simultaneous Multi Attribute Level Trade Off) scale

Vavra (1997) presents a comprehensive review of measurement scales in customer satisfaction research, while a large number of publications refers to the study of alternative methods for developing satisfaction scales (Fishbein, 1967; Dawes, 1972; Reckase, 1990), or the evaluation of product/service quality in rela-

tion to customer's satisfaction and expectations (Maslow, 1970; Graham and Balloun, 1973; Cohen, 1983; Sirgy, 1986).

Several researchers argue on the selection of the appropriate number of measurement levels in a customer satisfaction scale (Gerson, 1993; Dutka, 1995; Naumann and Giel, 1995; Vavra, 1997; Oliver, 1997). An odd number of levels implies the existence of a neutral level in the measurement scale and assumes that neutrality is an acceptable answer. Advocates of this approach emphasize that a neutral level simply gives, in many cases, an easy option to customers or it is used by them to express their indifference, instead of their neutrality. Regarding the size of the satisfaction scale, it should be noted that there is no universally accepted rule. However, the size of the scale should not be very small in order to ensure the reliability of the collected information, while at the same time it should not be too large so that customers may distinguish the meaning of the different levels of the scale. Oliver (1997) suggests that the number of satisfaction levels should not be smaller than three and larger than ten, while Hayes (1992) notes that satisfaction scales with more than five measurement levels do not offer any additional accuracy. Usually, customers tend to decrease the size of the scale when too many measurement levels are used.

In general, satisfaction scales should be tested during the pilot survey phase, giving emphasis on the wording and the direction of the measurement levels (Vavra, 1997). Moreover, satisfaction scales should be verified taking into account the consistency of survey results with additional corporate available information (Woodruff and Gardial, 1996).

Another important issue is raised when considering the "Do not know" option. Several researchers argue that this particular option should not be given to customers since it offers an easy way out, alleviating them from mentally working a question to reach a real point of view. Vavra (1997) notes that, in many cases, customers must have some impression, no matter how vague, of an organization's performance on all elements of its operation and products. Thus, he believes that in most satisfaction surveys it is fair to force customers to give their judgments. On the other hand, other researchers emphasize that this particular choice is an important piece of information that should not be distorted. Besides, in several situations, it is not practically possible for customers to provide an answer, due to lack of necessary knowledge. In any case, if some customers have not given their judgments in some particular questions, then this customer segment should be analyzed separately and these results should be compared to the other part of the customer sample.

Other issues that should be considered in developing customer satisfaction scales are the following:

- It is preferable to use uniform measurement scales in satisfaction questionnaires, in order to minimize the effort required by the customer to give his/her judgments (Gerson, 1993; Vavra, 1997).
- In several cases, the responses to a particular question are heavily skewed to the upper end-point ("excellent" or "extremely satisfied" level). Since it is im-

portant to have questions that produce a reasonable variation, this scale should be revised by skewed to the most frequently used end-point (Naumann and Giel, 1995; Oliver, 1997; Vavra, 1997). This problem occurs either because customers usually find it difficult to express negative judgments or because there is a highly competitive market environment (Hill, 1996).
- The set of satisfaction dimensions, even in the case of quantitative attributes (e.g. cost, waiting time) should rather be evaluated based on qualitative scales, in order to accurately record customers' perception (Oliver, 1997).

7.4 Critical Issues in Satisfaction Surveys

7.4.1 Pilot Survey

The pilot survey is the final step in the planning process of a customer satisfaction survey, aiming at testing the effectiveness of the research methodology. Usually this pretesting is focused on the questionnaire (or the interview process), which is the main survey instrument. In general, there are two different types of pilot testing (Naumann and Giel, 1995; Vavra, 1997):

- *Declared pretest*: In this case the participating customer is told that the survey is a pretest (either in the introduction or at the completion of the questionnaire). Usually this pretest has a form of personal interviews, where participants are asked to comment on particular aspects of the questionnaire (e.g. what is the meaning of a specific question, if any parts of questions are difficult to understand or confusing, and how they can be better asked).
- *Undeclared pretest*: In this case the respondent is not informed that he/she participates in a pilot survey. Thus, the whole interview process can be tested in "real-world" conditions. For example, the time required for customers to complete the questionnaire may be recorded in order to reveal potential improvements. Undeclared pretests give also the ability to directly observe customer reactions in different parts of the questionnaire.

Conclusively, the main objectives of pilot surveys are to test whether survey questions are fully understood by respondents and to examine the effectiveness of the questionnaire in terms of structure, presentation, etc. In case of a customer satisfaction pilot survey, additional scaling and measurement issues may be tested (i.e. appropriateness of satisfaction scale).

The sample size of a pilot survey is mainly a subjective decision of the survey administrator, since there are no rules or formulas that can tell how large the pretest should be (Naumann and Giel, 1995). Usually, this sample size depends on the complexity of the issues being studied and the size of the full survey. However, it should be noted that participants in the pilot study should be excluded from the fi-

nal sample, while the sample of the pilot survey should contain all different customer groups that are to participate in the full satisfaction survey.

Several researchers suggest that the questionnaire may be initially tested by organization's internal customers (Naumann and Giel, 1995). This way, the employees have the ability to give specific comments and remarks and actively participate in the customer satisfaction program. Then, the pilot survey is conducted in a set of external customers, and this process is repeated as many times as necessary, in order to ensure the reliability and the validity of the collected information.

7.4.2 Potential Problems and Errors

In general, the potential problems and errors that appear in the conduction of satisfaction surveys do not significantly differ from those of any ordinary consumer-oriented market survey.

A critical requirement for customer satisfaction survey conduct is the fulfillment of the main survey objectives. For example, if the aim of the survey is the performance evaluation of particular attributes of the product or service and the estimation of certain quantitative indices, then a quantitative survey in a large sample of customers is considered necessary. On the other hand, if the aim of the survey is mainly to explore and study customer behavior, a qualitative survey should be preferred (e.g. personal interviews, focus groups).

The general issues that should be taken into account when conducting customer satisfaction surveys may be summarized in the following (Naumann and Giel, 1995):

1. *Volatility*: It is concerned with the stability of attitudes over time. There is some evidence that the more important a particular issue is to a customer, the less volatile the attitudes will be. Also, attitudes tend to be more volatile when a customer experiences conflict among different attributes.
2. *Bias*: It occurs when a customer's response is influenced by factors other than true attributes. These factors may cover a large number of different issues, like sampling, wording of questions, scaling, sequencing, etc.
3. *Validity*: There is a number of different validity concepts, such as content, construct, predictive, and convergent validity. In simple words, validity indicates whether a question (or a survey) measures what it is supposed to measure (construct validity).
4. *Meaningfulness*: The information collected from customers should be meaningful, which means that respondents' answers should not only be sincere, but the respondents should have the necessary knowledge to form accurate answers. Answers may lack meaningfulness for a variety of reason. For example, a common mistake is that because a specific topic is important to the researcher, it is assumed that it is also equally important to respondents, which is not always true.

5. *Awareness and salience*: They are two related issues that may also determine meaningfulness. Awareness refers to the respondent's knowledge and experience, while salience concerns the importance of a particular issue to the respondent. Generally, the more important the issue, the higher the level of awareness. Moreover, the higher the level of respondent awareness, the more meaningful the responses will be.
6. *Reliability*: It is the ability to get consistent answers, time after time, with repeated samples. The reliability of a questionnaire (or a survey) is largely a function or a result of the aforementioned issues.

In particular, reliability and validity are the most frequently discussed issues in any survey. The value of a measured variable contains a systematic and a random error component, beside the true value of the variable. So, validity is related to systematic errors, while reliability concerns random errors. Although several types of validity may be assessed, the most important of them are the following (Vavra, 1997):

1. *Content validity*: It occurs when the experiment provides adequate coverage of the subject being studied. This includes measuring the right things as well as having an adequate sample.
2. *Construct validity*: It is determined by the extent to which a question represents an underlying construct (e.g. customer loyalty) and the extent to which the question relates to other associated constructs (e.g. repurchase intention, satisfaction) in an expected way.
3. *Predictive validity*: It refers to the degree to which a question can predict (or correlate with) other measures of the same construct that will be measured at some time in the future.
4. *Convergent validity*: It occurs when measures of constructs that are expected to correlate do so. This is similar to concurrent validity (which looks for correlation with other tests).

On the other hand, reliability is the extent to which a measure or an entire survey yields the same result on repeated trials, or simply how well the observed satisfaction scores are related to the true satisfaction score (Hayes, 1992). Since in customer satisfaction surveys the true level of satisfaction is unknown, it is not possible to calculate the correlation between the observed and the true scores. However, there are several ways to estimate the reliability of a questionnaire. The most common of them refers to internal consistency estimates (how well the items in the scale are interrelated) and include the following (Hayes, 1992):

- *Split-half reliability*: The method estimates internal consistency by dividing the scale into halves (e.g. odd vs. even items, first half of scale vs. last half of scale), then correlating the scores on these halves.
- *Cronbach's alpha*: This estimate of reliability is calculated using the variance of individual items and covariances between the items.

As implied from the analysis of the previous critical factors, marketing surveys, and in particular customer satisfaction surveys, are subject to a wide variety of potential errors. Although these errors may be caused by several factors, the main sources of errors include the following (Dutka, 1995):

1. *Sampling errors*: This category includes statistical errors that appear as a result of determining customer sample, usually because not every member of the population is included in the sample.
2. *Coverage errors*: These errors occur because the population was not defined correctly, and they justify the importance of defining who the customer is, before interviewing. For example, in some cases, satisfaction surveys are oriented to frequent customers, mainly because their contact or other information is available to organizations.
3. *Non-response errors*: This particular category refers to the bias caused by members of the sample who were not finally included in the survey. These errors depend mainly on the implemented type of survey (see section 7.1).
4. *Interviewer errors*: These errors are caused by interviewers who affect, by any means, the reliability of customer answers (e.g. by not following instructions, or by commenting questions and reinforcing particular response patterns).
5. *Respondent errors*: This category concerns errors that occur when customers do not give accurate information due to misunderstandings, lack of knowledge, or loss of interest, particularly in cases of lengthy surveys.
6. *Questionnaire errors*: This category refers to all type of errors related to the content and the structure of the questionnaire (e.g. wording, scales, and order of questions).
7. *Administrative errors*: These errors include data entry and analysis mistakes and refer to the business organization or the consultant who administrates the survey.

Regarding questionnaire errors, it should be emphasized that situations where customers are unable to respond to certain questions are rather common. This may occur because responders do not fully understand a particular question, or because they do not have the necessary knowledge to provide an accurate response (Naumann and Giel, 1995; Hill, 1996). A typical example in customer satisfaction surveys refers to the case where “technical” or “special” terms are used in the wording of the questionnaire. Usually, only the personnel of the business organization are familiar with these terms. Another example concerns particular questions that may have a different meaning or interpretation by the set of customers. For example, it is not clear if the question “How much satisfied are you by the quality of the products?” refers to the number of defects, the quality/price ratio, or the product’s durability (product’s life).

Consequently, choosing appropriate wording is one the most important factors that should be taken into account during the questionnaire development phase. Besides the necessary aforementioned clarity of questions, other important issues should be also considered. For example, double-barreled questions should be avoided (e.g. the answer to a question “how satisfied are you from the quality and

variety of the products?" is not clear in which attributes refers to). Thus, questions should be specific having a single issue or topic. Also, questions should be kept as simple and short as possible, since lengthy and complex tasks increase the probability of misinterpretation and confusion (e.g. questions that ask customers to recall past events or answer to hypothetical questions).

As already noted, the survey should be developed so as to ensure sincere responses. However, several components of the survey (e.g. interviewer, questionnaire) may force particular response patterns, particularly when its objectives are not clearly defined and accepted. For example, some companies combine the customer satisfaction survey conduct with several promotional activities, although these projects should be implemented separately.

In addition, customers should be given the ability to freely express possible negative judgments regarding their satisfaction from products/services or particular attributes of them. However, in several cases dissatisfied customers are asked to exert additional effort in order to give their judgments. Thus, several managers prompt that satisfaction surveys should be accompanied with an integrated complaint management system, in order to assure customers that negative judgments are worthy of being expressed. So, if there are no particular important reasons (e.g. lotteries), the anonymity of the participants is preferable, particularly when measuring customer satisfaction from a set of competitive products or services (Naumann and Giel, 1995).

Other important issues that should be considered when developing a customer satisfaction questionnaire are:

- Greater attention should be paid when asking sensitive questions (e.g. income questions). These questions are related to the concepts of privacy and confidentiality, which may vary over time, between cultures and other subgroups, and between individuals. Usually, it is better to avoid such questions, but if this is not possible, then effects in the questionnaire design phase should be countered (e.g. use open-ended questions).
- The quantitative tools that will be used to analyze data should be defined before conducting the survey. So, questions that have no apparent usefulness and any rational meaning should be excluded from the survey. On the other hand, the questionnaire should contain all the required information for the intended analyses.
- One should always stress the critical importance of the pilot survey, since this is the only way to test the questionnaire in "real-world" conditions (see also section 7.4.1).
- In several cases, the time in which a survey is conducted affects directly or indirectly the content of the collected information. This is evident is cases where some periodical factors may influence the products or services offered (e.g. tourism services).
- The results of a customer satisfaction survey should bee cross-validated by other corporate sources of information, if this is necessary.

Finally, declining customer response rates are becoming a major problem today. This is not specific to satisfaction surveys but rather to every survey research activity. Low response rates may be caused by a variety of reasons, like the fact that some people are tired of surveys and must be enticed to respond to them. Several customers are also suspicious that customer satisfaction surveys provide a cover for company's promotional activities, while others doubt that survey results may be effectively used in order to improve the quality of the offered products or services. Finally, low response rates may occur when customers do not really have enough time to participate in the survey. It should be reminded that participating in a customer satisfaction survey is time and labor intensive from the customer's perspective (Vavra, 1997).

There are several techniques that are able to increase the response rate in customer satisfaction surveys. These techniques include, amongst others, the following (DeMaio 1980; Dutka, 1995):

- Personalization of the communication process (e.g. personal salutation in an attached letter in case of a mail survey).
- Reminding actions regarding the participation in the survey (e.g. follow-up mails or telephone calls).
- Incenting customers to respond (e.g. gifts, lotteries, coupons).
- Minimizing respondent's effort (e.g. stamped envelope ready for mailing).

Several research efforts have concentrated in evaluating the increase of response rates in marketing surveys, when adopting one of the previous approaches (Hensley, 1974; Goodstadt et al., 1977; Frey, 1983; Lavrakas, 1987). However, it should be noted that the response rates depend on the entire set of the factors engaged in a satisfaction survey (survey planning, questionnaire content, time and place of the survey, etc.).

In general, business organizations should communicate survey results, as well as any decided improvement actions to customers. This may help to establish a "customer relationship" mentality and a continuously interactive communication between the organization and its customers.

7.5 Customer Satisfaction Barometers

7.5.1 Developing Satisfaction Barometers

The development and installation of a permanent customer satisfaction barometer provides the ability to evaluate current and future company's performance. Thus, a business organization has the opportunity to implement an integrated benchmarking program. The national satisfaction barometers presented in this section constitute the most important efforts of generic satisfaction barometers that refer to a group of business sectors or national economies.

The national satisfaction barometers provide useful information regarding consumer behavior given a uniform way of customer satisfaction measurement. These efforts count almost 20 years of life and focus mainly on the development of a customer satisfaction index that supplements the existing national measurement indices of each economy (e.g. consumer price index). This way, although the satisfaction level is evaluated in both micro- and macro-economical level, these applications do not concern satisfaction surveys of individual companies.

However, these customer satisfaction barometers may be considered as uniform, independent, national measures of consumer's experiences with the purchase and consumption of goods and services. The main objective of these barometers is to provide an economic indicator able to track trends in customer satisfaction and quality of goods and services produced in a national economy. As a result, provided results constitute broad-based benchmarks of any business organization, given the uniform way of measurement.

The indicators provided by these barometers may be considered as additional macroeconomic variables for understanding national economic health and development. In most of the cases, national customer satisfaction barometers apply a cause-and-effect econometric model that links customers' evaluations of their experiences with products and services to their overall satisfaction. The estimated satisfaction indices are linked, in turn, to critical behavioral consequences of satisfaction, like customer retention and price tolerance. Thereby, the satisfaction barometers may help to examine future consumer behavior, and allow managers and investors to relate satisfaction to future streams of income.

According to Fornell (2003a), the strong relation between customer satisfaction and national economic growth is justified by the economic imperative to create a satisfied customer: *"Firms that do well by their customers are rewarded with more business from buyers and more capital from investors. In the aggregate, this is how jobs and economic growth are created."* Considering that customer satisfaction barometers aim at capturing actual customer experiences, they are able to balance quantity and quality of economic output. This is extremely important because it is widely accepted that sustainable economic growth cannot be achieved by improving production and deteriorating quality level.

The most important widely developed national or international customer satisfaction index models include the Swedish Customer Satisfaction Barometer (SCSB), the American Customer Satisfaction Index (ACSI), the German Customer Satisfaction Barometer (GCSB), and the European Customer Satisfaction Index (ECSI). In this context, additional models in other countries have been also developed (e.g. Norway, Malaysia, Switzerland, Korea, South Africa, etc.). Usually, these satisfaction barometers adopt a causal modeling, so that satisfaction may be linked with satisfaction drivers and satisfaction results. This is consistent with the argument that user experienced quality can be considered both as a lagging and a leading indicator, in a sense that it is able to show what the company had done to its customers, and what the customers would do to the company, respectively (Fornell, 2003a).

7.5.2 Satisfaction Barometers and Economic Growth

Several research efforts have tried to link national customer satisfaction values with economic data (Fornell, 2001b; Andreassen and Olsen, 2004). These empirical studies are mainly focused on either national or corporate economic growth, although there is a debate over whether changes of satisfaction scores have implications for the broader economy or whether they only matter to individual companies (Barta and Chaker, 2001).

The Gross Domestic Product (GDP) is the most common measure of national economic growth, despite the strong criticism often made by economists. GDP is a measure of quantity of economic output, given that it records the sum of the value of all buyer-seller transactions. On the other hand, customer satisfaction barometers provide a measure of the quality of growth, considering that it is based on true consumption experiences. As a result, positive experiences contribute to increased customer demand and stimulate household spending. The latter is extremely important to economic growth, since consumer spending is usually the largest part of GDP.

The relationship of GDP per capita growth and changes of customer satisfaction scores in Sweden (SCSB), USA (ACSI), and Germany (GCSB) is presented in Figure 7.10. As shown, GDP and national customer satisfaction results do not move together always closely, even if lag of variables is considered. Fornell (2003b) notes that other factors, like spending orientation (durable/non durable goods), interest rates, and price rebates, may also affect this linkage.

Thus, it is clear that consumer spending is the key variable for explaining the link between customer satisfaction and national economic growth (Fornell and Stephan, 2002; Fornell, 2002, 2003a). Satisfied customers are able to increase spending because they are more likely to repurchase, buy more frequently and are less sensitive to price increases. As Fornell (2001a) emphasizes, the linkage between customer satisfaction and spending is confirmed by the fact that most buys are repeat purchases, or ongoing commitments in the case of services. However, this linkage is not always clear or direct, as shown in Figure 7.11. Several researchers note that consumer spending may increase, even though satisfaction declines due to several other factors (e.g. prices, household savings, etc.). On the other hand, negative consumer confidence about the economy and its future may result to lower spending levels, without a relative decrease in satisfaction scores. Several other researchers, studying the linkage between satisfaction and spending, emphasize also the “law of diminishing satisfaction” (i.e. the more we consume, the less the satisfaction with the same product/service is).

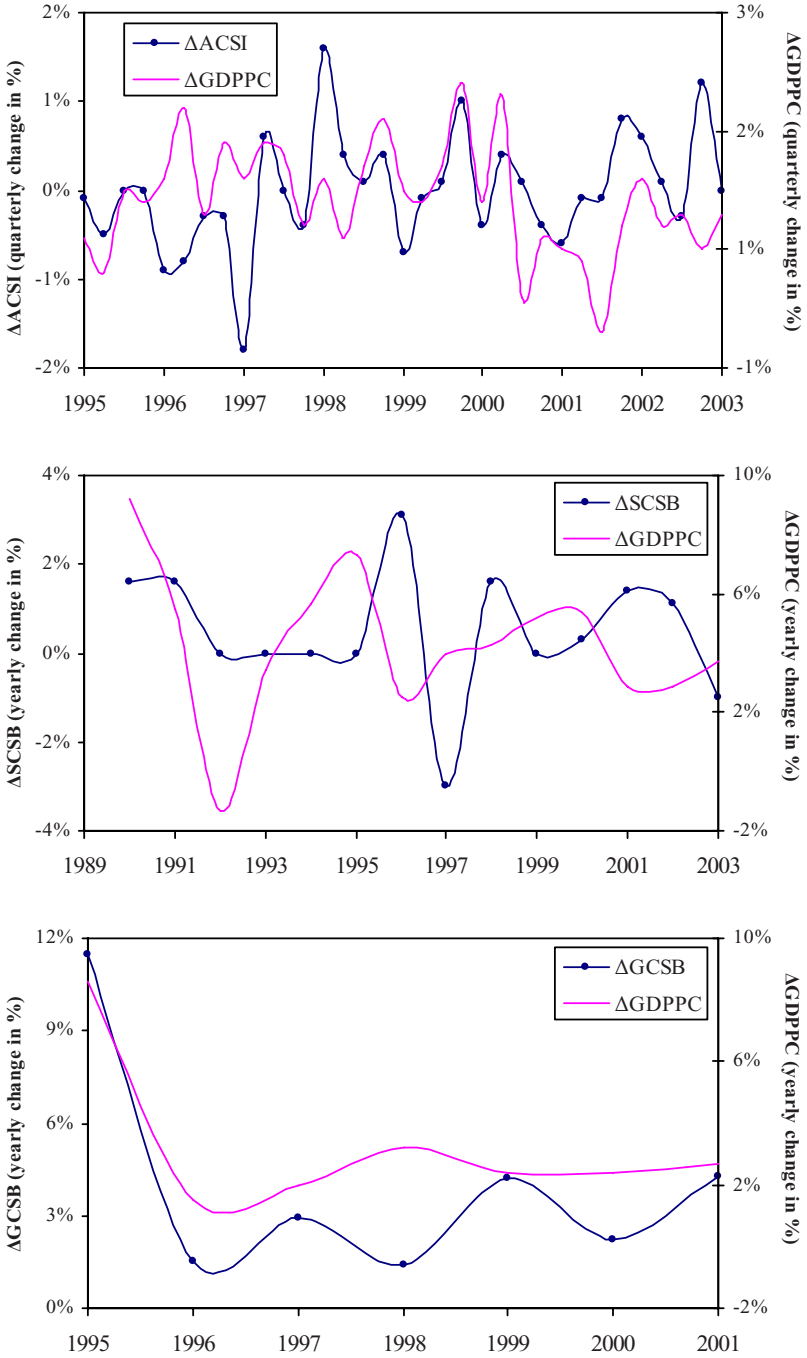


Fig. 7.10 Change in satisfaction scores and GDP per capita growth

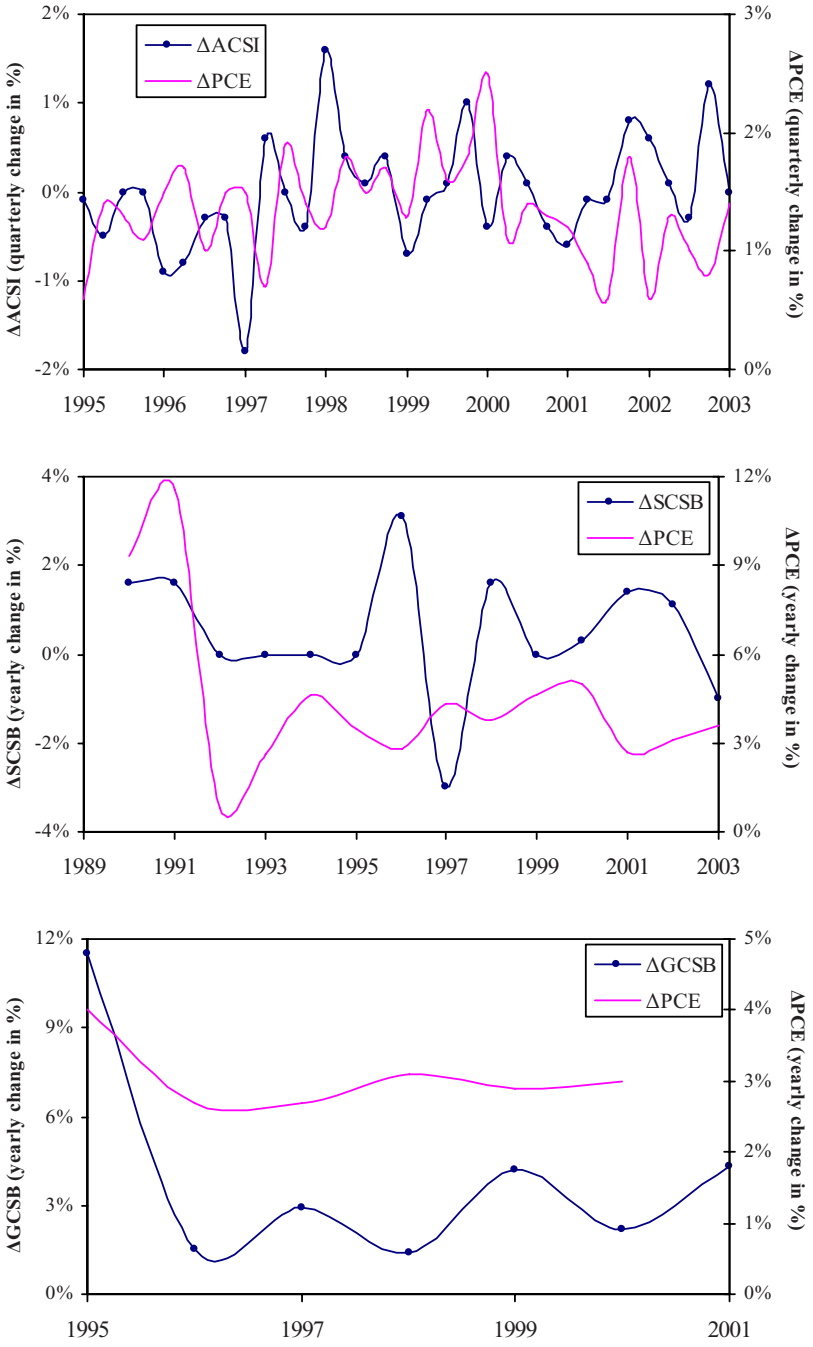


Fig. 7.11 Changes in customer scores and consumer spending growth

It should be noted that consumer spending is assumed to be driven by the aggregated household wealth (income, savings, earning from stock market, etc.). Thus, if customers are spending beyond their means, consumer expenditures are unlikely to continue increasing, even if satisfaction levels are relatively high. However, recent empirical studies have shown that housing income and wealth have a weak impact, although significant, on consumption: only 8% of the variation in consumer spending is explained by combined changes in income and housing wealth (Fornell and Stephan, 2002; Case et al., 2001).

Furthermore, usually consumer spending is related to the uncertainty of the general economic environment, as perceived by customers, including interest rates, inflation, energy prices, wages, unemployment, etc. In this context, several survey-based indicators have been proposed, like Consumer Sentiment Index (CSI) and Consumer Confidence Index (CCI). All the previous factors are assumed to influence the overall consumer's "willingness to pay", although recent studies shown that consumer sentiment/confidence has a weak only impact on customer satisfaction (Fornell and Stephan, 2002). Particularly, as noted by Fornell (2005), increase in interest rates is similar to price increase, in the sense that credit becomes more expensive. Moreover, a change in interest rates may affect the value of a satisfied customer because discounting of future income does not remain stable. This may affect corporate plans for improving customer satisfaction.

Several researches have also studied the relationship between customer satisfaction and economic growth in a corporate level. Using national customer satisfaction data, several studies show that improvement in customer satisfaction has a significant and positive impact on firms' profitability. Ittner and Larcker (1998) and Anderson et al. (2004) show that 1% change in ACSI can lead to a $240-275 million improvement in firm value. Using similar data, Gruca and Rego (2005) found that a 1% increase in ACSI results to an increase of $55 million in a firm's net operational cash flow next year and a decrease of 4% in cash flow variability. Other researchers used the SCSB and found that a 1% increase in satisfaction leads to a 2.37% increase in ROI (Return on Investment), while a 1-point increase in SCSB for 5 years is worth about $94 million or 11.4% of current ROI (Anderson et al., 1994, 1997; Anderson and Mittal, 2000). The relationship between customer satisfaction and stock prices has also been studied, showing that ACSI scores are significantly related to market value of equity (Fornell et al., 2006).

All the aforementioned studies are based on the principle that a satisfied customer is more profitable than a dissatisfied one. In addition, customer satisfaction is an important indicator of the general health of the company, since it is usually related to motivated and loyal employees, good products, and effective management.

However, a decrease in revenues during one period may lead to an increase in customer satisfaction the next period, since financial difficulties often pressure companies to try harder and improve customer service (e.g. airlines sector after 9/11 and telecommunication industry during 2003 in the US). Furthermore, corporate earnings may be affected by the competitiveness of the sector, because alternative products/services and switching costs affect the overall consumer behavior.

Increasing sales may also often lead to lower customer satisfaction, if the acquisition of new customers is not handled well. Thus, customer satisfaction is often considered as a necessary but not sufficient condition for company's growth: high levels of customer satisfaction lead to company's growth, but company's growth does not always lead to satisfied customers.

7.6 Examples of Satisfaction Barometers

7.6.1 Swedish Customer Satisfaction Barometer

The Swedish Customer Satisfaction Barometer (SCSB) was the first truly national satisfaction index, established in 1989. The SCSB counts approximately 20 years of life and the results are given every year. It is conducted under the supervision of the University of Michigan-National Quality Research Centre and the Swedish Post Office.

The required data are collected through a telephone survey from a sample of approximately 23,000 customers, while currently more than 130 companies participate in this survey. The survey is designed to obtain a nationally representative sample of customers of major companies in 32 of Sweden's largest industries. The companies surveyed in each industry sector are the largest share firms such that cumulative market share is more than 70% (Fornell, 1992).

The questionnaire employs 10-point scales to access each respondent's expectations, perceived quality, satisfaction and retention behavior. An example of the questionnaire for the auto industry is presented in Figure 7.12.

The analysis is based on the Fornell's approach (see Figure 2.10), while the model is self-weighting and estimates the indices and the strength of relationships between the variables in order to maximize the explanation of customer satisfaction, as expressed by the sample of customers. Figure 7.13 presents the SCSB model, while the Swedish national results for the overall customer satisfaction index are shown in Figure 7.14.

The main characteristic of the approach is the multiple equations that correlate customers' values and perception for quality with their satisfaction and their loyalty, as it is expressed through price elasticity and repurchase intentions (Fornell, 1992; Johnson et al., 2001).

Expectations

When you purchased your _____, you probably knew something about this particular brand. If you now think back and try to remember what kind of expectations you had about the quality of the _____, would you say that you had high or low expectations?

Very low expectations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very high expectations

Confirmation-Disconfirmation

To what extent do you think your expectations have been realized?

Much worse than expected | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Much better than expected

Price given quality

Given the quality of the _____, how reasonable do you think the price you paid was?

Very unreasonable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very reasonable

Quality given price

Given the price of the _____, what do you think about the quality you received?

Very low quality | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very high quality

Satisfaction

Given all your experiences as a _____ owner, how satisfied or dissatisfied are you with your _____?

Very dissatisfied | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very satisfied

Repurchase intentions

The next time you buy a _____, how likely is it that it will be a (manufacturer name) again?

Very unlikely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very likely

Fig. 7.12 Questionnaire example in the SCSB (Anderson et al., 1994)

Fig. 7.13 The SCSB model (www.kvalitetsindex.org)

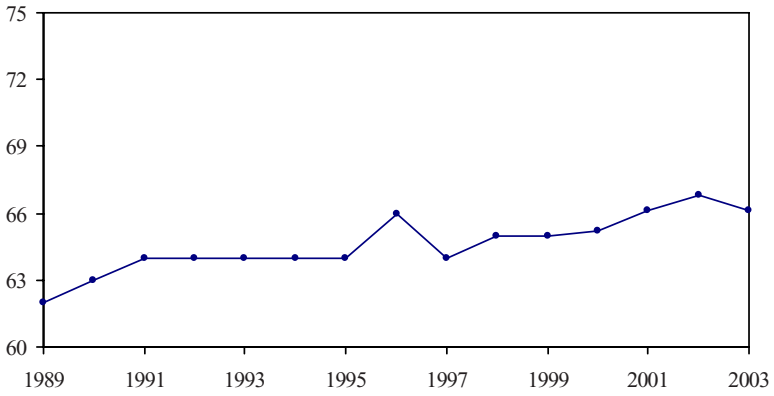


Fig. 7.14 SCSB results for 1989-2003

7.6.2 American Customer Satisfaction Index

The American Customer Satisfaction Index (ACSI) was established in 1994 following several years of development and pre-testing. It is produced through a partnership of the University of Michigan Business School, the American Society for Quality, and Arthur Andersen. The National Quality Research Centre (NQRC) at the University of Michigan Business School is responsible for researching and producing the ACSI (Fornell et al., 1996; National Quality Research Center, 1998, 2000).

The ACSI follows the general modeling and survey methodology of the SCSB adapted in the distinct characteristics of the U.S. economy and it can be considered as an effort to develop an index similar to the national consumer price index. The model links antecedents or causes of customer satisfaction (customer expectations, perceived quality and value) with satisfaction values and consequences or outcomes of customer satisfaction (customer complaints, loyalty), as shown in Figure 7.15 (Anderson and Fornell, 2000).

The ACSI model reports scores on a 0-100 scale at the national level, measuring 7 economic sectors, 39 industries (including e-commerce and e-business), and more than 200 companies and federal/local government agencies. As shown in Figure 7.16, the economic sectors measured, produce almost 73% of the Gross Domestic Product (GDP). The number of interviews increases constantly: current sample size contains more than 65,000 customers, while more than 500,000 respondents have been interviewed since the baseline study in 1994 (Bryant, 2003).

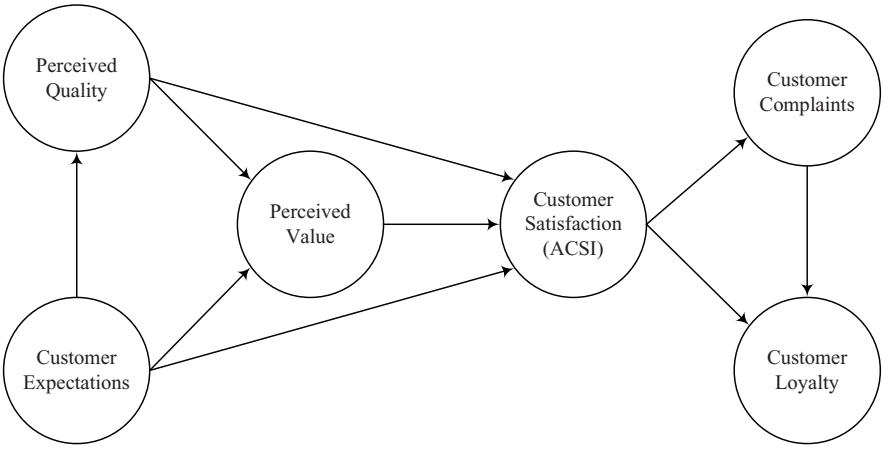


Fig. 7.15 The ACSI model (National Quality Research Center, 1998)

Using the causal analysis, the weights of the indicator variables as well as the relationship between the latent variables are estimated with a partial least squares method (Anderson and Fornell, 2000). Each company in the ASCI is weighted within its industry by its most recent years' revenue. Also, relative sales by each industry are used to determine each industry's contribution to the respective sector index (National Quality Research Center, 1998). Thus, the calculation of ACSI in each level is based on a simple weighted average model. In addition to the satisfaction scores, the ACSI provides scores for the causes and consequences of customer satisfaction and their relationships.

All companies, industries and economic sectors in the ACSI were measured at the same time only for the baseline year (1994). Since that baseline year, ACSI is updated quarterly, on a rolling basis, with new data for one or two sectors replacing data from the prior year. Thus, ACSI provides analytical results at different levels, i.e. for each economical sector, industry or a set of selective companies included in the survey. The ACSI results for the overall customer satisfaction index are presented in Figure 7.17, while an example of detailed results for the examined industries is shown in Figure 7.18.

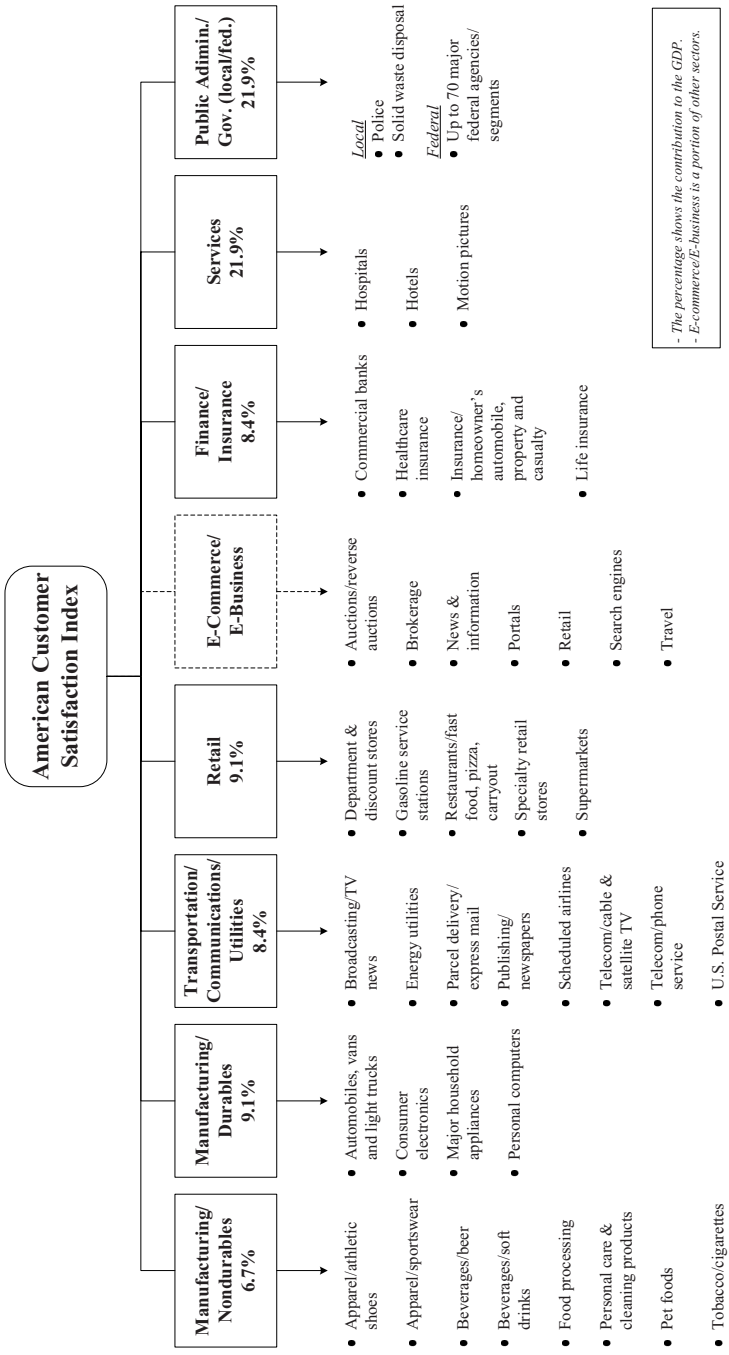


Fig. 7.16 Sectors and industries in the ACSI model (Bryant, 2003)

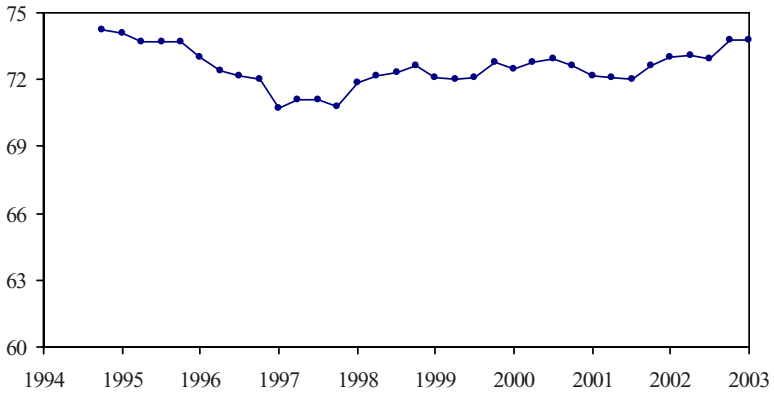


Fig. 7.17 ACSI results for 1989-2003

7.6.3 German Customer Satisfaction Barometer

The German Customer Satisfaction Barometer (GCSB) has been established by the German Marketing Association e.V. and the Deutsche Post AG and operates on a yearly basis since 1992. Its general philosophy focuses on the following points (Meyer and Dornach, 1996):

- Supplying single industries and suppliers with data to determine their position and deficiencies in market according to customers' perspective.
- Information on the customers' expectations as well as on the way through which they are modified.
- Continuous information and controlling of customer satisfaction measures.
- Developing and strengthening the customer orientation philosophy of the German industries, companies, organizations and institutions.

The required data are collected through a computer-aided telephone survey (CATI: Computer Assisted Telephone Interviewing) based on a random sample of approximately 45,000 customers, covering more than 50 industry sectors.

The results of the GCSB are shown in Figure 7.19, while it should be noted that this barometer provides analytical results for different customer segments and industry sectors, including customer satisfaction on detailed quality attributes (Figure 7.20).

The GCSB does not assume a causal model for customer satisfaction, like SCSB and ACSI, and is mainly a survey-based approach. The GCSB approach analyzes a simple questionnaire that consists of (Meyer, 1994, 1996):

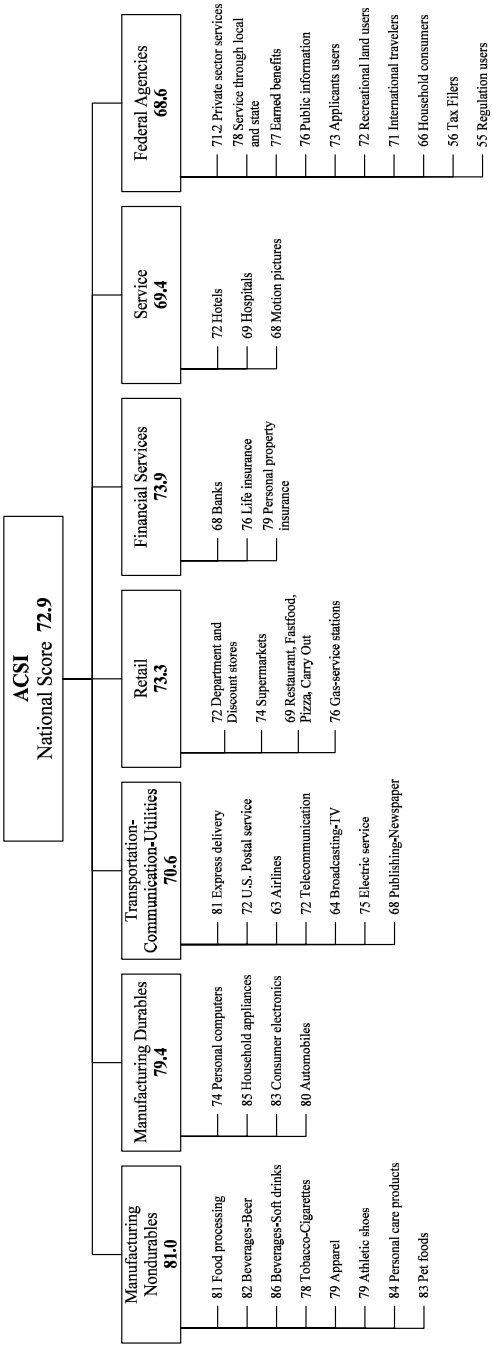


Fig. 7.18 ACSI results for different industries for year 2000 (National Quality Research Center, 2000)

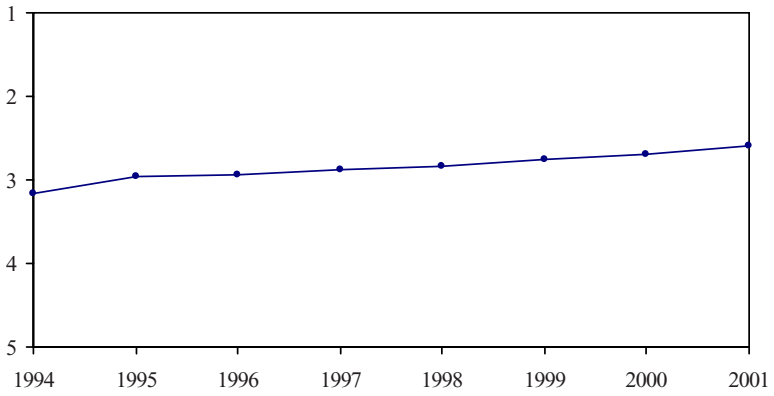


Fig. 7.19 GCSB results for 1989-2003

- Overall customer satisfaction rating.
- Customer retention questions (recommendation, repurchase intention).
- Satisfaction rating for the quality attributes of the product/service surveyed.

The GCSB supplies important data to German companies in order to implement internal, industry or international benchmarks. However, as Meyer and Dornach (1996) state, traditional quantitative performance indicators such as market share or profitability should be combined with customer satisfaction and loyalty indicators provided by GCSB. Finally, it should be noted that GCSB includes also an employee satisfaction survey.

7.6.4 European Customer Satisfaction Index

The development of the European Customer Satisfaction Index (ECSI) has been prompted by the successful application of ACSI and SCSB. ECSI was founded by the European Organization for Quality (EOQ), the European Foundation for Quality Management (EFQM) and the European Academic Network for Customer-oriented Quality Analysis, and supported by the European Commission (DG III). Although a pilot survey was conducted during 1999, where only 11 countries participated and limited number of sectors (retail, banking, telecommunications, and supermarkets) was included, the ECSI has not been able so far to provide broad-based results (Grønholdt et al., 2000; Kristensen et al., 2000; Grigoroudis and Siskos, 2004).

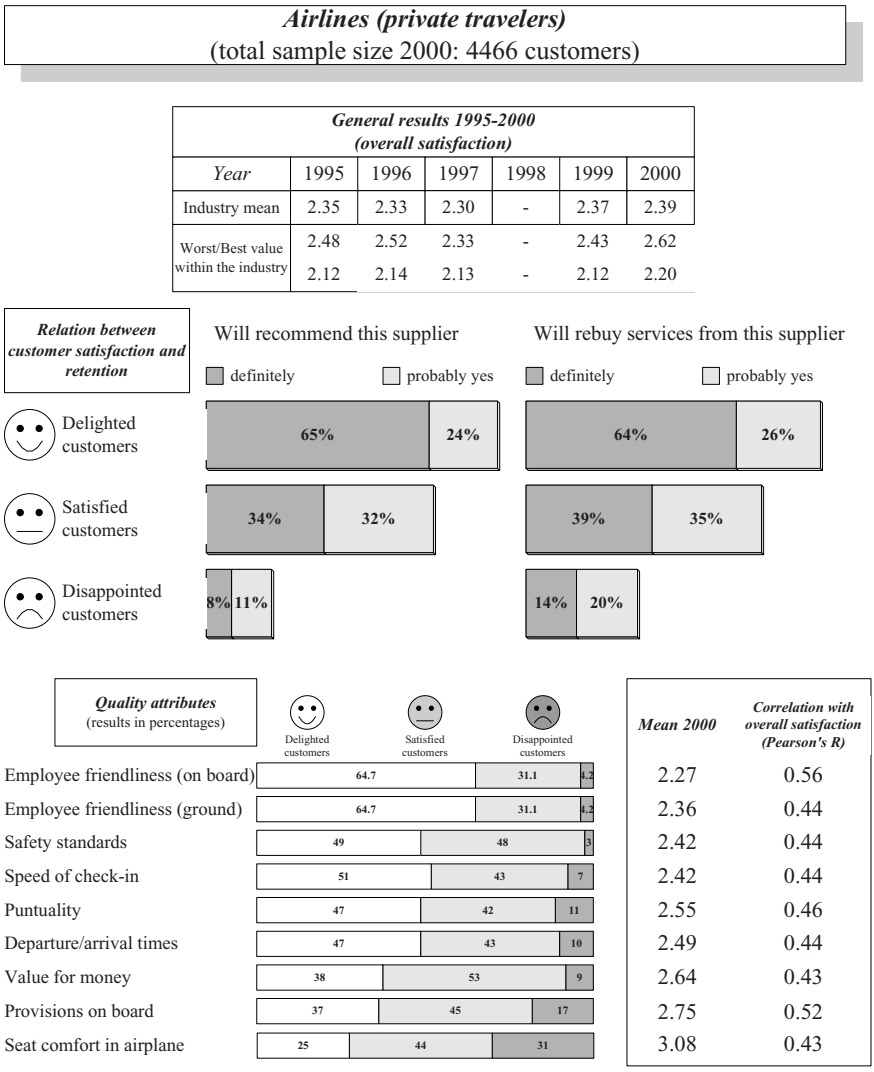


Fig. 7.20 GCSB detailed results for the airline industry

The ECSI model constitutes a modified adaptation of the ACSI model (Figure 7.21), which links customer satisfaction to its determinants and, in turn, to its consequence (Grønholdt et al., 2000). The determinants of customer satisfaction are perceived company image, customer expectations, perceived quality and perceived value. An important difference of the model compared to ACSI is that perceived quality is conceptually divided into "hardware" quality (quality of the product/service attributes) and "humanware" quality (associated customer interactive elements in service, like personal behavior and atmosphere of the service environment).

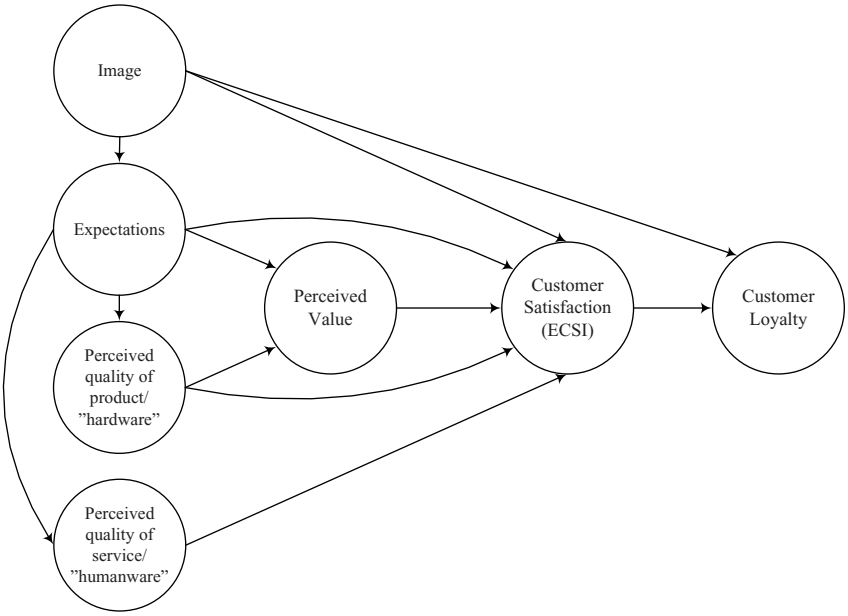


Fig. 7.21 The ECSI model (Ciavolino and Dahlgaard, 2007)

The ECSI model provides the ability to produce 4 levels of satisfaction indices, similarly to ACSI results:

- National customer satisfaction indices.
- Economical sector indices.
- Specific industry indices.
- Scores for companies and organizations within the survey.

7.6.5 Other Satisfaction Barometers

Other important customer satisfaction index models, developed during the last decade, that are able to provide systematic results, include the Norwegian Customer Satisfaction Barometer (NCSB), the Korean Customer Satisfaction Index (KCSI), the Malaysian Customer Satisfaction Index (MCSI), and the Swiss Index of Customer Satisfaction (SWICS) (Kadir et al., 2000; Johnson et al., 2001; Winnie and Kanji, 2001). Furthermore, several countries are conducting a preliminary analysis and design the installation of national satisfaction barometers, like Canada, Australia, Brazil, Argentina, and Mexico.

Additional attempts for developing a customer satisfaction barometer may refer to syndicated or multiclient surveys, which provide the ability of comparison analysis with the most important competitors.

For example, one of the first industries that have conducted syndicated satisfaction surveys was U.S. automotive industry. The American auto industry has been using surveys since 1978 to help dealers measure their performance against other competitors in order to identify operations that needed improvement. In some cases, the surveys have become unwieldy 100-questions documents (Massnick, 1997). The National Automobile Dealers Association (NADA) intervened in 1994 with a much shorter recommended approach to determining a customer satisfaction index. This approach provides a uniform methodology for measurement based on defined satisfaction dimensions (Table 7.4).

Table 7.4 NADA's survey satisfaction dimensions (Massnick, 1997)

	Purchase	Service
Partial dimensions	1. Cleanliness and condition of the car	1. Easiness of getting a service appointment
	2. Courteousness and professionalism of the salesperson	2. Explanation of repairs
	3. Sales transaction handling of the business/financial department	3. Service time
	4. Explanation of warranty and maintenance schedule	4. Proper repairs
	5. Explanation of owner's manual and operating controls	5. Service fees
Overall dimensions	1. Overall satisfaction from the purchase of the new car	1. Overall satisfaction from the service experience
	2. Overall satisfaction from the purchase and delivery process	2. Recommend (for service)
	3. Recommend (for purchase)	

7.6.6 Comparison and Discussion

Most of the aforementioned satisfaction index models have a common methodological background, which is based on a set of cause and effect relationships. Nevertheless, the comparison of these causal models reveals the following differences:

- Compared to the ACSI model, in the original SCSB perceived quality and perceived value appear as one merged variable (perceived value).
- In the ECSI model, the "hard" and "soft" aspects of perceived quality are considered separately, introducing two distinct variables. Additionally, the model includes corporate image as a latent variable having direct effects on customer expectations, satisfaction, and loyalty.
- In NCSB model, Servqual instrument is introduced to evaluate quality, while customer expectations are replaced by corporate image, based on evidence

from empirical studies, showing that expectations exert little influence to satisfaction (see Johnson et al., 2001).

- The consumer complaint variable is considered differently in these satisfaction index models, given that in many cases, customers rarely complain even if they are dissatisfied with products or services. For example, in the NCSB, it is replaced by complaint handling, while the ECSI model does not include such a variable as satisfaction consequence.

The GCSB adopts a completely different approach, aggregating customer judgments in a single satisfaction-to-dissatisfaction scale, while no system of cause and effect relationship exists. Although the GCSB survey includes measures other than satisfaction, there is no satisfaction model per se.

The aforementioned differences in the methodological approaches constitute the most important disadvantage for comparing customer satisfaction across different industries and countries, although several studies have tried to overcome the problem of variation in methodological practices (Johnson and Fornell, 1991; Martensen et al., 2000; Johnson et al., 2001; Johnson et al., 2002; Grigoroudis and Siskos, 2004). Johnson et al. (2002) suggest that observed differences in satisfaction results by SCSB, ACSI, and GCSB are relatively predictable and meaningful. Their results are mainly focused on the following:

- Satisfaction is systematically higher for products, more intermediate for services and retailers, and lower for public agencies.
- Satisfaction is also predictably higher in the United States than in Germany or Sweden.

These arguments may be justified by differences in the considered countries, which are able to affect the degree to which customers are provided with market offerings that satisfy their needs.

Almost all of the aforementioned customer satisfaction index models are estimated using the Partial Least Square (PLS) method (Fornell and Cha, 1994). PLS is well suited for this particular problem, given that it is a causal modeling method that can handle latent or unobserved variables. PLS is able to combine characteristics of multiple regression and principal components analysis, through an iterative estimation procedure.

The performance of latent variables is operationalized as weighted indices of multiple survey measures, such that the predictive power of the model is maximized. The prediction accuracy is focused on the loyalty variable, which is the most important measure because it is the main survey-based proxy for economic results (Johnson et al., 2001).

Although PLS appears similar to Structural Equation Modeling (SEM), it should be noted that SEM is a path analysis approach with latent variables, focusing on explaining covariance, while the objective of PLS is to explain variance.

However, despite the aforementioned disadvantages, these customer satisfaction barometers constitute basic economic indicators, while the implemented methodologies are quite generic, and thus applicable to very different cases. Usu-

ally, these estimated satisfaction indices provide a baseline against which it is possible to track customer satisfaction over time.