Customer expectation dimensions of voice-to-voice service encounters: a scale-development study

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Abstract *Listening to the voice of the customer has been embraced in marketing theory and practice for a long time. However, the wide scale implementation of call centers has only recently enabled managers to take this adage to the next level. At the same time, it is acknowledged that the evaluation of service delivery often depends on the so-called "service encounter", or the time of interaction between the service firm and customer. Extensive research has been conducted in the field of traditional face-to-face encounters, but no attempt has yet been made to categorize customer expectations with regard to employee behavior during voice-to-voice encounters. Therefore, the aim of this study is to develop a measurement instrument that identifies key customer expectation dimensions with regard to call center representative (CCR) behavior. Based on the services marketing literature, 13 potential attributes were empirically tested on an effective sample of 206 respondents. This resulted in a model consisting of four different sub-scales that were labeled "adaptiveness", "assurance", "empathy", and "authority". The results of the validity- and reliability-testing confirm the solidity of the measurement instrument.*

Introduction

Rapid technological evolution in the fields of information and communication technology is changing the nature of marketing products and services. An increasing number of firms have included call centers as communication platforms to integrate services and sales functions in dealing with large numbers of customers via remote, real time contact (Anton, 1996; Dawson, 1998). Call centers deal with both the telephonic voice-to-voice and voice-to-technology (interactive voice response) contact between the customer and the firm. Call centers are becoming increasingly important, both as an interaction channel and as an important source of customer-related information.

As call centers become more important for customer relationship management, call center representatives (CCR) become increasingly important to the link between companies and customers. It is often times that customers view the service quality of the organization as a whole based on their interaction with the CCR. For consumers, the evaluation of a service often depends on the evaluation of the "service encounter" or the time the customer interacts with the firm (Bitner, 1990). Quality, in this context, is the net aggregated value of benefits perceived in the service encounter over what the

customer had been expecting (Klaus, 1985). Therefore, firms have to pay particular attention to consumers' perceptions of the service process. According to Bearden *et al.* (1998, p. 794), the benefits of increased quality of the service process will be twofold:

(1) firms will improve the ability to attract new customers; and

(2) retention rates among current customers will increase.

Consumer perceptions are strongly influenced by the attitudes and behaviors of contact employees when evaluating the quality of the service delivered (Bowen and Lawler, 1992). Since the contact employees are usually a customer's first point of connection with the firm, they have the responsibility to sell the firm's services, deliver on the promises offered by the firm, and build an image (Bettencourt and Brown, 1997). Since it is becoming increasingly difficult to create a competitive advantage from the range of services offered, in many service firms, it is the contact employees, and not the services themselves, which are the source of differentiation and create a competitive advantage (Pfeffer, 1994).

To serve the customer right and effectively, contact employees need to know what customers desire. In the case of face-to-face encounters, people can create quality perceptions relating to physical characteristics of the contact employee and the environment where the service takes place. Interaction by telephone restricts the evaluation of the service delivery to such an extent that consumers will have to base their perceptions solely on the interpersonal traits of the contact employee.

Therefore, with the increase of companies installing call centers for their customer service operations, customer evaluations of the service encounter are changing. Although the importance of understanding customer expectations in voice-to-voice encounters is obvious, there is little guidance from the research literature as to what customer expectations are with respect to contact employees' behavior during these voice-to-voice encounters. In the eyes of the customer, what aspects characterize a truly service-oriented call center representative (CCR)? What do customers expect from a CCR during a voice-to-voice encounter? There is a clear need for answers to these questions. Therefore, the objective of this study is to develop an instrument for measuring customer expectations with regard to voice-to-voice encounters. The article will be structured along the same lines as Boshoff's (1999) measurement development paper on a service recovery scale (RECOVSAT). First the theoretical framework will be outlined. Second, the empirical study and its results will be described. Finally, this article will elaborate on the conclusions of this study and end with sections on its theoretical and managerial implications.

Theoretical framework

The basic personality attributes of CCRs come from examining the services marketing literature. The set of attributes that seem to define the personality of CCRs are drawn from three studies, namely:

(1) Bearden *et al.* (1998);

(2) Boshoff (1999); and

(3) Parasuraman *et al.* (1985).

Presenting a contingency framework as a means of understanding the relationship between the level of customer contact and service satisfaction, Bearden *et al.* (1998) present three moderating characteristics that influence this relationship:

(1) customer characteristics;

(2) service characteristics; and

(3) service employee characteristics.

The first two characteristics will not be included here, since they are not related to the scope of this study. Bearden *et al.* (1998) proposed that the service employee characteristics of self-efficacy, adaptability, and empathy moderate the relationship between the level of contact and perceived service satisfaction. As call centers are set up by firms to provide customers instant access to answers on questions and problems and telephonic services are considered as high level contact between customer and contact personnel (Bearden *et al.*, 1998), these three characteristics are expected to apply to and determine customer expectations of voice-to-voice service encounters.

In addition to self-efficacy, adaptability, and empathy, a selection from the attributes empirically determined by Boshoff (1999) to measure satisfaction with specific service recovery is deemed plausible as building blocks for our measurement instrument. Call centers often have a crucial role in customer service recovery. The eight plausible attributes of Boshoff's (1999) scale instrument (RECOVSAT) are:

(1) time;

(2) communication style;

(3) empathy (already included from Bearden *et al.*'s (1998) study);

(4) reliability;

(5) perceptions of commitment to service quality and customer satisfaction;

(6) empowerment;

(7) staff attitude; and

(8) explanation.

The other seven attributes used by Boshoff (1999) are not included in our study because these are specifically related to service recovery encounters and/or face-to-face service encounters. Finally, in addition to the attributes originating from the studies of Bearden *et al.* (1998) and Boshoff (1999) Parasuraman *et al.* (1985) provide three additional determinants of service quality that may be suitable to fit a true service-oriented CCR, namely:

(1) competence;

(2) security; and

(3) knowing/understanding the customer.

A discussion of these attributes follows.

Self-efficacy
The employee's belief that he/she is competent to execute the required activities related to the job is referred to as self-efficacy (Bearden *et al.*, 1998; Hartline and Ferrell, 1996). In a study of hotel services and employee empowerment, Hartline and Ferrell (1996) found a positive effect of increased employee self-efficacy on customer perceived service quality. This effect is, according to Hartline and Ferrell (1996, p. 61), due to the fact that employees who believe in their own job-related abilities are "better able to handle difficulties inherent in their jobs". This premise is also expected to be an important determinant of CCR performance as CCRs work in a highly technological environment. CCRs who feel comfortable working with telecommunications and computer technology will probably provide better voice-to-voice quality service than CCRs that do not feel comfortable working with that technology.

Adaptability
Adaptability, also referred to as flexibility (Zeithaml and Bitner, 2000), reflects the CCR's "ability to adjust behavior and to handle interpersonal situations" (Bearden *et al.*, 1998, p. 804). Perceived adaptive employee behavior to customer needs is an important determinant of customer satisfaction (Hartline and Ferrell, 1996; Bitner *et al.*, 1990; 1994; Weitz *et al.*, 1986). It is important that the customer perceives the employee is doing something special for him/her, whereas the activity may be routine from the employee's point of view (Zeithaml and Bitner, 2000). In call centers, scripts are often used to help CCRs in their conversation with the customer. If the scripts are too rigid and if CCRs are not allowed to deviate from the scripts, adaptability may suffer and lead to a decrease in the level of service quality a customer perceives.

Empathy
Empathy is a characteristic that can be defined as the ability to provide the customer with "caring, individualized attention" (Parasuraman *et al.*, 1988, p. 23; Zeithaml *et al.*, 1990, p. 26). It is the ability of the CCR that shows the customer a level of personal involvement. This means treating the customer in a way that shows that the CCR cares about the customer. Communications of responsiveness and assurance create a more personal atmosphere, which is expected to be appreciated by customers; especially in longer, high level contact service encounters (Bearden *et al.*, 1998). As voice-to-voice service encounters are high level contacts, empathy is expected to be an important CCR

attribute in long voice-to-voice contacts, like contacts to build and maintain relationships. For shorter, less personally involving contacts, empathy is expected to be less important (Bearden *et al.*, 1998).

Time

Boshoff (1999, p. 238) refers to time as the "speed with which the customer complaint or wish is resolved". Time is seen as an element of trust which is an important variable of relationships between buyers and sellers (Wilson, 1995). It is important that customers do not feel pressured, but also not be held up longer than they wish to be. In the call center context, time is considered an important variable of performance (Anton, 1996). Talk time, handle time, queue time, wrap-up time and hold time are all metrics that are used by call center management to measure call center representative performance, i.e. satisfaction (Anton, 1996). Among others, the objective for management is to minimize costs, i.e. minimize talk time and minimize wrap-up time. This may be conflicting to the customer expectations about time in a voice-to-voice service encounter, in which the CCR is expected to take a reasonable time span to listen to the customer's problem in order to help him/her in a consistent way.

Communication style

Communication style refers to how the CCR handles the way in which the customer is addressing his/her service needs (Boshoff, 1999). Boshoff (1999) distinguishes two types of communication styles: convergence and maintenance. Convergence refers to a voice-to-voice encounter as a communication style in which the CCR adapts his/her "tone of voice" in accordance with the CCR's schemas held by the customer (Boshoff, 1999). In a maintenance style, the CCR displays no effort to adapt to the customer needs (Boshoff, 1999). Crosby *et al.* (1990, p. 75) found that customer perceived similarity (i.e. appearance, lifestyle, and socioeconomic status) of sales persons "plays an important role in determining sales effectiveness". This is also expected in the voice-to-voice service context in which similarity is probably largely determined by the communication style of the CCR, as physical appearance is not relevant. This may mean that CCRs sometimes have to adjust the language for different customers, for example increasing the level of sophistication with a well-experienced customer and speaking simply and plainly with a novice (Parasuraman *et al.*, 1985).

Reliability

This item refers to the service employee delivering on promises dependably and accurately (Boshoff, 1999; Parasuraman *et al.*, 1988; Zeithaml and Bitner, 2000). Reliable CCRs are expected to keep their promises and be trustworthy (Boshoff, 1999; Wilson, 1995; Crosby *et al.*, 1990). Trust is an important "building block" of relationship quality (Wilson, 1995; Crosby *et al.*, 1990). In voice-to-voice encounters, trust is expected to be a critical component of customer expectations of the CCR's behavior. As there is little other contact

then verbal language, customers must take the CCR literally at his/her word. In contrast with service encounters like e-mail or fax in which the customer has "something on paper" or face-to-face services encounters in which the customer and the service employee have "physical contact", the customer in a voice-to-voice service encounter is, for a major part, dependent on the reliability of the CCR in which there is only verbal contact.

Perceptions of commitment to service quality and customer satisfaction
This attribute reflects the customer perceived commitment of the employee to provide maximum service quality and to satisfy the customer (Boshoff, 1999). Commitment is an important relationship variable (Wilson, 1995). Therefore, we expect that in voice-to-voice encounters, with the purpose of building or maintaining relationships, commitment becomes increasingly important. A specific issue also mentioned by Zeithaml *et al.* (1990) is the performance goals used in call centers to measure representative performance, for instance maximum talk time, maximum handle time, and minimum number of calls to be answered per hour versus the CCR's commitment to service quality and customer satisfaction. Furthermore, Bitner *et al.* (1994, p. 103) state that commitment to service quality can suffer, not because the frontline employee is not willing to provide good service, but because of lack of "basic knowledge of the system and its constraints, inability to provide a logical explanation to the customer, cumbersome bureaucratic procedures, poorly designed systems or procedures, or the lack of authority to do anything". The lack of authority relates also to the next attribute.

Empowerment
"Empowerment refers to having the desire, skills, tools, and authority as a frontline employee to service the customer" (Zeithaml and Bitner, 2000, p. 302). This can be achieved, according to Bowen and Lawler (1992, p. 35), by sharing four organization ingredients with frontline employees:

(1) information about the organization's performance;

(2) rewards based on the organization's performance;

(3) knowledge that enables employees to understand and contribute to organizational performance; and

(4) power to make decisions that influence organizational direction and performance.

Bowen and Lawler (1992) also make a distinction that it depends on the kind of service that is offered whether to empower frontline employees and to what extent. In a production line context where low costs and high volumes are important, the tie to the customer is transaction-oriented, the tasks are routine and simple, the environment predictable with few surprises, and the employees have low growth and social needs so, therefore, empowerment is not necessary (Bowen and Lawler, 1992). On the contrary, empowerment is desired in a

customized, relationship-oriented service setting with non-routine, complex tasks, unpredictable situations and frontline employees with high growth, social needs and strong interpersonal skills. Hartline and Ferrell (1996) found in a hotel setting that frontline employee empowerment has a positive effect on perceived customer service quality. In call centers, the technology constrains empowerment (Bowen and Lawler, 1992). Together with too rigid scripts and insufficient access to the right customer and product information, CCRs could be discouraged and prevented from executing tasks that customers expect from them. In these instances, the role of call center management becomes very important (for example, by showing the employees how important their job is to the company).

Staff attitude
Boshoff (1999, p. 240) describes this attribute as "whether or not the service provider's employees are friendly and considerate when they deal with the customers". Aspects like having a bad day or being tired can have an impact on the attitude of the CCR and consequently on the quality of the service delivered. Since CCRs must deal with phone calls for most of the day, when a difficult or extremely angry customer calls in, there is little time for the representative to "cool down" before he/she must continue with the next call. This sometimes results in the representative dealing with the next customer(s) with a poor attitude. Again, with the way performance metrics are imposed on the agents, there is little time for them to recover from such calls, which is why attitude has such an important role in call center service quality. While it may not be the particular customer causing the poor attitude, it is extremely visible to the customer that the representative should treat them nicely and when they do not, it is also visible to the service quality measurements.

Explanation
A critical (dis)satisfactory service encounter incident is the frontline employees' response to a complaint of the customer (Bitner, 1990; Bitner *et al.*, 1990; 1994). Customers, when they call in with a complaint or for information, usually want the truth in identifying what happened and why the events occurred. The content or explanation of the response has an impact on the customer's (dis)satisfaction (Bitner, 1990; Bitner *et al.*, 1990; 1994). Clearness and truth of the explanation are deemed important to customers (Boshoff, 1999). When complaints do arise, it is usually the CCR's responsibility to explain it to the customer. If there is inadequate information, based on lack of technology or resources, it will most likely reflect on the CCR, although it affects the entire firm's image. It is important that CCRs are trained on these aspects and have access to information to provide the correct explanation to customers.

Competence
Competence means that the CCR possesses the skills and knowledge necessary to perform the service delivery (Zeithaml and Bitner, 2000). In a voice-to-voice service encounter context, CCRs must possess the required knowledge about

the products and/or services that the company offers, but also the skills to perform the multiple activities that are required to execute the job. Typical skills that a CCR must possess are a pleasant voice on the telephone and the ability to perform multiple activities at once (e.g. listening to the customer, searching for information, and inputting customer information into the database). These skills are partly innate and can partly be trained. The required basic knowledge of the services offered and technology used can be obtained via training and experience, while other personality traits are innate in the CCR and cannot be attained through training.

Security
Security can be described as the "freedom from danger, risk, or doubt" (Parasuraman *et al.*, 1985, p. 47). The customer must have the feeling that his/her dealings with the organization are confidential. Since most customers are aware of the extent of information which a firm collects and has access to about them, CCRs have to acknowledge this and act accordingly by spotting (imminent) customer uncertainties and taking these away. This is especially important in call centers in the financial industry and other industries that have extremely sensitive data about the customer. On the other hand, security also deals with the issue that customer wants to make sure and feel secure that the information they have received from the CCR is correct. If they doubt that this information is true, it can also cause problems in the perceived quality of the service delivered.

Knowing the customer
Understanding the customer's predicament means that the CCR makes the effort to understand the specific customer's needs. This means that the CCR must learn how to read customers to identify what they require and what they expect from the contact, listen to the customer closely to identify what the customer wants, make each customer feel like an individual, and recognize which customers are loyal and have a high lifetime value to the firm (Parasuraman *et al.*, 1985). Technology available in call centers can partly contribute to the CCR's knowledge of the customer. Information from customer databases with historical customer contact information and other customer related information can be consulted by the CCR during the service encounter with the customer. This information is, however, often not enough. Specifically, information about the current needs of the customer often cannot be retrieved from the database. The listening and interpretation skills of the CCR are important to retrieve this information, which cannot always be taught in training.

In summary, the literature review yielded 13 potential attributes. In the process of creating a scale model representing the desired voice-to-voice characteristics, questionnaire items had to be generated to measure the selected attributes. The following section will describe the empirical study to develop the scale model.

An empirical study
Research design
Study setting. In order to test the potential attributes that were described in the previous section, an empirical study was conducted among Dutch respondents that had previously contacted a call center. They had to at least remember one recent occasion of talking to a CCR. This was necessary to ensure the respondent's ability to provide a well-based opinion on the characteristics that they would like the CCR to possess from experience and not from expectation.

Questionnaire development. From the previous literature on service quality and service recovery, 53 items were generated to measure the 13 attributes described above as requirements for truly service-oriented CCRs. Items measuring the attributes were developed specifically for this study on the basis of 15 personal interviews with customers. All 53 items were accompanied by a seven-point Likert-type scale ranging from 1 (completely disagree) to 7 (completely agree). A number of items were reverse scored in order to detect response bias. Two questions were added to gain insight in respondents' demographic information. One question was added for respondents to indicate the number of times per month respondents usually contacted a call center and one question was added to gain insight in the preference of whether customers wanted to talk to either male or female CCRs.

After the questions were generated from the customer interviews, it was pre-tested on a sample of 30 respondents. By administering the pre-test, we could ensure that the attributes measured in the study reflected actual interactions and expectations from customers when dealing with CCRs. Results from the pre-test analysis showed that customers viewed some of the attributes as measuring the same constructs (e.g. self-efficacy and competence), which resulted in some minor changes in both the questions and the (wording of) items. It was decided to keep all items in the research so as to have contributions on a wider scale to see if these items indeed measured the same constructs from the customer point-of-view.

Data collection. Data were collected by means of personal interviews. A random sample of Dutch respondents in several cities in The Netherlands was asked to fill out the questionnaire. On average, it took the respondents about 15 minutes to fill out the questionnaire. Other data collection methods such as mail surveys and telephone surveys were also considered, but collecting the data by means of personal interviews turned out to be the best option for the following reasons. A mail survey would have been very time- and cost-inefficient and risky, because of the lack of control over the response rate. Conducting the research by phone might bias the results, since the respondents have to imagine a situation where they call a service number and not a situation in which they are called by a CCR, which can resemble a telephone survey.

Results
Sample description
A total of 211 people participated in our study. Of the 211 returned questionnaires, five questionnaires had to be withdrawn from the sample

because of mistakes in filling them out and insufficient answering patterns. As a result, 206 usable questionnaires formed the effective sample size. For the purpose of using statistical scale identification techniques (like factor analysis), the final number of observations did not entirely meet the minimum of five respondents per item to be analyzed, which is normally used as a rule of thumb in data analysis (Hair *et al.*, 1998). Nevertheless, a preferable sample size of 100 observations or larger was easily met.

Our sample could be characterized as follows. A total of 46 percent of the respondents were male. The average age of the respondents was 32.6 years and ranged from 17 to 75 years. A cumulative 27.7 percent of the respondents were people between the ages of 21 and 23 years. Regarding the frequency of contact between respondents and CCRs per month, the results showed that 93.1 percent of the respondents fell into the lower band of answering categories (less than one time per month and between one and four times per month). Of this 93.1 percent, 43.8 percent of the respondents had contact with a CCR less than one time per month, and 49.3 percent had contact between one and four times per month. Only 2.0 percent of all respondents tend to encounter a CCR more than ten times per month. Male respondents tend to have slightly more experience with service encounters over the phone. A total of 53 percent of the respondents specified having no preference for the gender of the CCR at all. Of the 47 percent that indicated some preference, 33.5 percent indicated preference for a female CCR and only 13.1 percent showed preference for a male CCR. More specifically, 46.3 percent of the male respondents showed a clear preference for a female CCR. Only 8.4 percent of the male respondents and 17.1 percent of the female respondents indicated a clear preference for male CCRs. Of the female respondents, 60.4 percent indicated no preference and of the male respondents, 45.3 percent had no preference for the gender of the CCR. In conclusion, people who indicated a clear preference for CCR gender prefer to talk to a female CCR.

Exploratory analyses/scale purification
The sample was randomly split in half. First, one half of the data was used to determine the actual number of dimensions underlying the construct. The other half of the sample was used for validating the measure that resulted from the analysis. A suggested technique for purifying the measure, factor analysis, was used in order to determine the actual number of dimensions underlying the construct.

First, we examined whether our data are suitable for factor analysis. This is done by visual inspection of the correlation matrix and anti-image matrix – Bartlett's test of sphericity – and the KMO-measure. Visual inspection of this matrix did not result in a significant number of correlations lower than 0.30, which is indicative for the appropriateness of factor analysis. Another indicator of the strength of the relationships among variables is the partial correlation coefficient. If variables share common factors, the partial correlation coefficients between pairs of variables should be small when the linear effects of the other variables are eliminated (Hair *et al.*, 1998). This means that the

partial correlation coefficients are then estimates of the correlations between the unique factors and should be close to zero. The negative value of the partial correlation coefficient is called the anti-image correlation coefficient. Examination of the anti-image correlation matrix (the off-diagonal values) reveals mostly small values. Therefore, we can conclude that the use of factor analysis is appropriate. Bartlett's test indicated that our correlation matrix is significantly different from an identity matrix (coefficient = 677.36; p-value = 0.000), and that our correlation matrix is appropriate for factoring. The appropriateness of using factor analysis is further supported by the KMO-measure, for which we obtained a value of 0.80.

The next step in the scale development process consists of an exploratory factor analysis to gain insight in the dimensionality of the scale. Principal component estimation and Varimax rotation resulted in an 11-factor solution with eigenvalues above 1.00 and more than two items loading significantly on each factor. However, not all factors allowed for a meaningful interpretation. Therefore, we decided to eliminate variables with low measure-of-sample-adequacy values. This leads to the conducting of additional factor analyses with a varying number of factors. The optimal solution, based both on interpretability and statistical measures, is formed by a four-factor model, which explains 51.9 percent of the total variance.

For each of the four factors, we assessed the internal consistency using coefficient alpha (Peter, 1979). Items with a low item-to-total correlation were deleted. The four internally consistent factors that resulted from our analyses are presented in Table I.

During this process, 63 percent of the items had to be deleted to obtain a scale with sound theoretical and statistical properties. The following items were deleted:

- five items for competence;
- three items for time;
- three items for communication;
- one item for empathy;
- three items for reliability;
- two items for perceptions of commitment to service quality and customer satisfaction;
- one item for empowerment;
- four items for staff attitude;
- one item for explanation;
- one item for security; and
- three items for knowing/understanding the customer.

Based upon the interpretation of the items that load on these scales they were labeled "adaptiveness", "assurance", "empathy", and "authority", respectively

Scale	Items	Reliability (Cronbach's α)
Adaptiveness	1. Treating different questions should be no problem for the CCR (ADAP1) 2. A CCR should be able to adapt to each and every situation (ADAP2) 3. A CCR should take my level of knowledge into account when answering a question (CUSA3) 4. A CCR should be able to remain calm and friendly even when I am angry (COMP1) 5. When I have a problem, I like the CCR to help me define the problem more specifically (COMM3) 6. I find it important that a CCR is able to help me with each and every question (EMPO1)	0.71
Assurance	1. When I have a complaint, I like the CCR to explain where this complaint comes from (EXPL1) 2. I like the CCR to explain each and every step he or she takes to answer my question (EXPL2) 3. When I have to be transferred, I like the CCR to explain why I have to be transferred (EXPL3) 4. A CCR has to give me the feeling that my information is used confidentially at any time (SECU1) 5. I like the CCR to inform me on anything that my information will be used for (SECU3)	0.70
Empathy	1. I like the CCR to imagine what I am going through when calling with a complaint (EMPA1) 2. I like the CCR to give me the feeling that I am a special customer (EMPA2) 3. I like it when I notice that the CCR treats my question as an important one (EMPA4)	0.63
Authority	1. It disturbs me when a CCR has to leave my question unanswered because of lack of authority (EMPO3) 2. It disturbs me that my call has to be returned because the CCR is not allowed to answer my question (EMPO4)	0.60

Note: Abbreviations in brackets refer to the original set of 13 dimensions: self-efficacy; adaptability; empathy; time; communication style; reliability; perceptions of commitment to service quality and satisfaction; empowerment; staff attitude; explanation; competence; security; and knowing the customer

Table I.
Final scale model
retrieved from
exploratory factor
analyses

(see Table I for the final results of the exploratory factor analyses). Several items, related to different proposed service attributes (adaptability, competence, communication style, empowerment, and perceptions of commitment to service quality and customer satisfaction) loaded on the first scale. All items had in common that the customer expects the CCR to adapt to either the question/problem or to the customer. Therefore, the first scale is labeled "adaptiveness". By adaptiveness to questions or problems, we mean that customers expect that CCRs are able to solve and help to interpret different

customer problems and questions. The CCR is expected to listen to the customer, interpret his/her problem, and provide a solid solution to the problem. By adaptiveness to the customer, we mean that the CCR is expected to assess the customer's constitution (his/her mood, his/her relationship with the firm, his/her social behavior, etc.) and adjust his/her behavior accordingly.

The second scale, labeled "assurance", includes three explanation items and two security items. CCRs that clearly explain the steps in the procedure of solving the customer's question reduce customer's uncertainty. The same counts for CCRs who explain exactly for what purposes the customer's information will be used by the firm; it reduces customer's uncertainty and gives the customer assurance.

The scale "empathy" is pretty self-explanatory since the fact that only empathy items loaded significantly on this scale. CCRs are expected to empathize with the customer's situation and give the customer the feeling that the customer and his/her problem are important to the firm.

The last scale is labeled "authority", where only items from the category empowerment loaded significantly on this scale. Empowerment can be seen as a construct that consists of two parts: authority and competence. To be empowered, a CCR first has to have the authority to perform tasks, but secondly, the CCR has to be able to perform these tasks. Given the fact that all authority items loaded on this last scale draws us to conclude that the amount of authority that a CCR needs to have in the eyes of the customer is more important than actual empowerment as a whole, the best name for this scale is "authority". Customers expect when they speak with a CCR that he/she is authorized to execute the necessary steps to help the customer. While the authority component of empowerment all loaded on this scale, the competence items of empowerment are partly included in the "adaptiveness" scale.

Confirmatory analyses

A measure or a scale is valid to the extent that it measures what it is intended to measure. More specifically, validity can be defined as the degree to which a concept and its measures achieve theoretical and empirical meaning within the overall structure of one's theory (Bagozzi, 1994). As mentioned earlier, we split our sample in half, to use one half to derive a scale, and to use the remaining half for the confirmation of the earlier results. Confirmatory analyses were used to assess the unidimensionality, reliability, and validity of our scale (Steenkamp and Van Trijp, 1991).

Unidimensionality. Unidimensionality can be defined as the existence of one construct underlying a set of items, and has been recognized as "one of the most critical and basic assumptions of measurement theory" (Hattie, 1985, p. 139). The program LISREL 8 was used to assess the unidimensionality of the constructs. The overall fit of the model provides the necessary and sufficient information to determine whether a set of items is unidimensional (Kumar and Dillon, 1987). We can conclude that our scale is unidimensional, as we obtained a good model fit: GFI = 0.93; AGFI = 0.91; TLI = 0.94; CFI = 0.95; and RMSEA = 0.032.

Reliability. Composite reliability (Jöreskog, 1971) was used to evaluate the reliability of the dimensions used in this research. The results of the reliability analysis are given in Table I. All reliability figures are equal to, or above the recommended cut-off value of 0.60. We can conclude, therefore, that the four derived scales are reliable.

Construct validity. Of all existing dimensions of validity, construct validity is the one that has received the most attention over the years and is consequently the one with the best developed technology for assessing its achievement. Indeed, researchers have often defined construct validity as the extent to which an operationalization measures the concept it is supposed to measure, a point of view similar to the general meaning of validity. Convergent validity and discriminant validity are two necessary conditions for construct validity.

Within-method convergent validity was assessed testing the significance and magnitude of each indicator's coefficient (Steenkamp and van Trijp, 1991). All items loaded significantly on their respective constructs, with a minimum *t*-value of 5.75. Furthermore, all items, except CUSA3 and EXPLI, significantly loaded higher than 0.5 on their respective constructs. This finding supports the convergent validity of our scale. See Figure 1 for detailed information.
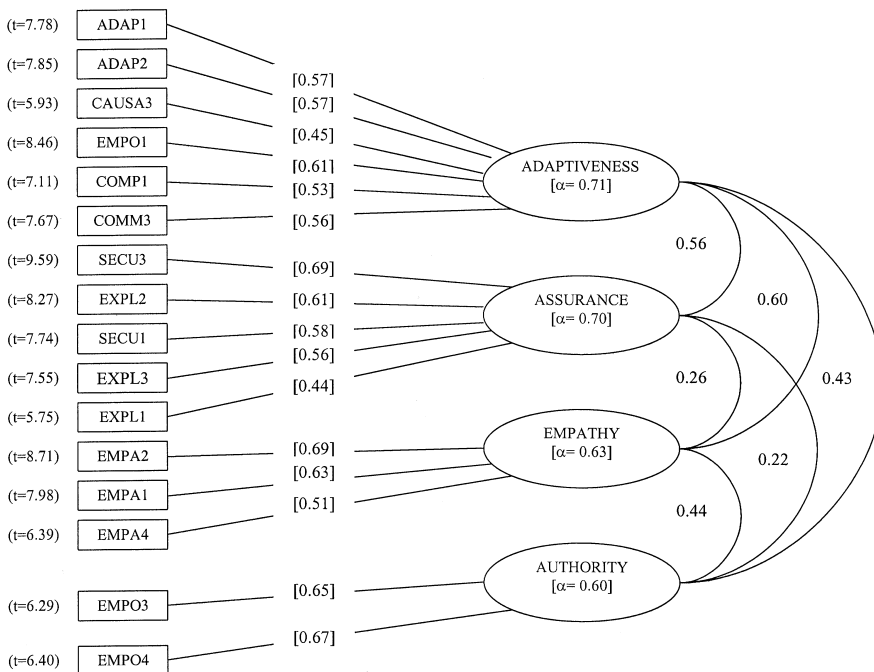
Note: All point estimates are significant at p<0.05

Abbreviations on the left hand side refer to the original set of 13 dimensions: self-efficacy, adaptability, empathy, time, communication style, reliability, perceptions of commitment to service quality and satisfaction, empowerment, staff attitude, explanation, competence, security and knowing the customer.

Figure 1.
Confirmatory factor
analysis results

Discriminant validity was evaluated by testing whether pairs of constructs were correlated less than unity. Chi-square difference tests with one degree of freedom were used to test for unity between the constructs. All tests were significant at the 0.05 significance level. Inspection of the correlation matrix and the accompanying standard errors reveals that none of the correlations are within two standard errors of 1.0, which indicates discriminant validity. Applying Fornell and Larcker's (1981) test of average trait variance extracted, all of the construct pairs demonstrate that the average variance extracted from the traits exceeds the squared correlation estimate between the two constructs. This is also indicative of the existence of discriminant validity.

The evidence of unidimensionality, construct validity, and reliability suggests that the four scales are valid. Therefore, the model could be appropriate for use as a management tool in the voice-to-voice service environment.

Discussion

The results of this study help to create a picture of customer expectations of CCR behavior in voice-to-voice encounters. Four sub-scales showed to be of major importance in this regard. This implies that it is in the interest of both researchers and managers to focus on these scales and their underlying dimensions. Customers hold certain expectations about their prospective voice-to-voice interactions with CCRs. Since these expectations are likely to determine how customers evaluate the quality of the service firm, it is in the service firm's interest to know what these expectations are. This study provides a measurement tool that gives an indication about these expectations, and meets the need for practical research in this regard. Accordingly, the fact that the sub-scales embrace eight specific service aspects from the traditional service encounter literature indicates the generalizability to the voice-to-voice service environment. Up until now, the literature has been slow in gaining insight into customer expectations with regard to voice-to-voice service behavior, and in this regard, this study contributes to the existing customer service encounter literature.

The first scale, labeled "adaptiveness", incorporates different service attributes. Just as in other sorts of service encounters, customers clearly expect CCRs to adjust their behavior to the customer, handle interpersonal situations, and adapt to various situations. CCRs are expected to be competent and skilful and, therefore, able to help the customer. Furthermore, they should not be afraid to deal with various situations during an encounter and must be capable of assessing the customer's constitution and the language to the level of sophistication of the customer accordingly.

The scale "assurance" focuses on aspects related to security and explanation. CCRs who provide clear information to the customer about the procedures will comfort the customer and take away uncertainty. Furthermore, the customer

does not only expect that the firm he/she calls will handle his/her customer information discreetly, but also that the CCR assures him/her that the information will be handled confidentially.

The scale "empathy" indicates, like in other sorts of customer service encounters, that it is important in a voice-to-voice service encounter. A CCR must be able to empathize with the customer's emotions and/or situation and to give the customer the feeling of not being "a number" to the firm. Obviously, customers dislike it when they get the feeling they are being treated as not important and that their problems are not taken seriously.

The label of the final scale, "authority", is generated from the findings that customers expect CCRs to have the authority to deal with their various problems and questions. The items loading on this scale indicate that customers find it disturbing if a CCR is not authorized to solve the customer's question or problem.

Limitations and further research

The objective of this study was to develop a measurement instrument that identifies key customer expectation dimensions with regards to CCR behavior. However, this study has some limitations that should be taken into account when interpreting the results. Since these limitations impact on further research, they will also be discussed as such in this section.

First, customer contacts to the call center happen for a variety of reasons, which lead customers to have different expectations of the service. This research did not discriminate between situations where, for instance, a customer called because he or she had a complaint and situations where he/she had a general question. One could argue that an angry customer, who calls with a severe complaint, likes to see different aspects in a CCR than a customer who calls with a general question. The level of requested empathy shown by the CCR could differ substantially in these two situations. Therefore, the results should be interpreted with some caution. Future research could take this situation specificity into account, when taking this particular research one step further.

Second, it should be noted that the study did not take international differences in customer expectations into account. The results were solely based on perceptions of Dutch customers, which mostly experience less than four voice-to-voice service encounters per month. This indicates that the generalizability of the results to industry and international situations is not guaranteed. As an increasing number of companies set up pan-European call centers, future research could focus on cultural differences that determine customer expectations about CCR behavior.

A third limitation concerns the possibility of the presence of halo effects. Halo effects occur when there is carry-over from one judgement to another (Churchill, 1995), and often can be found when itemized scales are used in questionnaires. Empirical research has indicated that respondents who are confronted by decisions that are complex, because of the many answering

alternatives involved, tend to simplify their decisions by reducing the number of alternatives they consider. This may cause bias in the final result and should be taken into consideration.

Fourth, this study mainly focussed on the potential service characteristics that a CCR should possess in the opinion of the customer. However, not only the possession of these traits, but also other aspects (e.g. working environment) influence employee behavior. It has been realized that factors, such as employee satisfaction, rewards and motivation, training and development, frontline support, etc. influence CCR behavior as well. However, these were not taken into account in this study. Taking these into account would broaden the scope of this research too much, but it could be interesting to incorporate these into future research. Future research could explore the relationship between personality and aspects of the working environment, and the effect that their possible interaction might have on the expectations of the quality of the service delivery.

Fifth, this study was solely based upon the customer's expectations of voice-to-voice service encounters, indicating that the use of interactive voice response (IVR) technology and other types of technologies (or a possible combination between voice and technology) were precluded from this research. Taking the rapid increase in use of "voice-to-technology" service techniques into account, future research might want to include these types of techniques when furthering research on customer's expectations regarding remote service delivery.

Finally, the theoretical implications of this study imply the generalizability of eight specific existing service attributes to the voice-to-voice service environment. In order to verify or deepen the results, future research could try to investigate further attributes that impact on the customer expectations of CCRs. Focus groups can be used to create "new" attributes in addition to the existing ones that were used in this research. The limitations to this study urge a careful interpretation of the results. Nevertheless, the results suggest some managerial implications.

Managerial implications

In order to manage well, managers need to ensure that the measurements accurately portray what management wants to be measured. The effective management of high quality voice-to-voice service delivery could be adversely affected by the absence of a valid measurement instrument. The evidence of good validity and reliability associated with the four-scale model suggests that this model could be a useful service management tool in the future. Several managerial implications can be drawn from the results.

First, the four-scale model, including the eight service encounter attributes and related items, can be used as a basis for internal performance and quality measurement and externally for perceived and desired quality measurement. Internally, the attributes of the scale model can be used for monitoring purposes. In most call centers, management monitors the quality of the conversations

between CCRs and customers by listening in, audiotaping conversations, and/or mystery calling. Often checklists containing quality attributes are used for consistent evaluation. Our four-scale model and eight attributes can serve as the basic model for these checklists to monitor customer-based service quality. Furthermore, management can give weightings to the different attributes when evaluating conversations. In a relationship management conversation for instance, attributes like adaptability and communication style are more important than in a conversation in which the customer asks for a brochure in which time is considered more important. Further research is necessary to determine these relative weightings for the different conversation types. Externally, the attributes of the four-scale model can serve as the basis for a built-in caller satisfaction survey. By doing this, the firm is able to determine how the CCRs perform on these eight important attributes.

Second, the scales "adaptiveness", "assurance" and "empathy" account for a major part of skills. These skills can partly be taught. Training and education programs must be designed to improve the CCR skills on these attributes. Examples of programs that can achieve improvement in these skills are programs on product-, computer-, procedures-, and company knowledge. This knowledge is necessary to improve the competence and/or (procedure) assurance given by CCRs. For example, if a customer calls to get information about what products the firm sells, it is important that the CCR has enough knowledge about the different products and if not, where he/she can find the relevant information in his/her computer. If subsequently requested, the CCR must also be able to provide further information on the advantages of the products and give advice on which products suit the customer's situation best. Then, if the customer wants to order a product, the CCR must know what the ordering-, delivery-, and payment procedures are and assure a delivery time. Furthermore, training on motivation, dealing with aggression, stress management, and customer orientation can improve the CCR's skills in his/her contact with the customer. In such training programs, the CCR learns to deal with unexpected situations like how to deal with furious customers.

Third, the scale "authority" clearly indicates the customers' preference for CCRs who have decision-making power. Customers like competent CCRs who are able to help them out with each and every question or problem. When CCRs are well trained and have access to product- and customer-information databases so that they possess the ability to cover almost every question and complaint, it has been shown that customers would also prefer that CCRs have authority to use the information themselves without gaining management permission.

Finally, the resulting attributes of the scale model that is presented here can serve as useful input for recruitment and selection purposes. Assessments like personality tests and role-plays can be designed in such a way that they test among potential candidates for present levels of "adaptiveness", assurance", "empathy", and the ability to deal with "authority".

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