Michael K. Brady & J. Joseph Cronin Jr.

Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach

Through qualitative and empirical research, the authors find that the service quality construct conforms to the structure of a third-order factor model that ties service quality perceptions to distinct and actionable dimensions: outcome, interaction, and environmental quality. In turn, each has three subdimensions that define the basis of service quality perceptions. The authors further suggest that for each of these subdimensions to contribute to improved service quality perceptions, the quality received by consumers must be perceived to be reliable, responsive, and empathetic. The authors test and support this conceptualization across four service industries. They consider the research and managerial implications of the study and its limitations.

The conceptualization and measurement of service quality perceptions have been the most debated and controversial topics in the services marketing literature to date. This debate continues today, as is evident from the ongoing and largely failed attempts either to integrate the SERVQUAL/SERVPERF conceptualization into new industries (e.g., Dean 1999; Durvasula, Lysonski, and Mehta 1999; Kettinger, Lee, and Lee 1995) or to replicate its conceptual structure (e.g., Asubonteng, McCleary, and Swan 1996; Kettinger and Lee 1995; Mels, Boshoff, and Nel 1997; Robinson 1999; Van Dyke, Kappelman, and Prybutok 1997). Indeed, perceived service quality has proved to be a difficult concept to grasp. It has been referred to as "elusive" (Parasuraman, Zeithaml, and Berry 1985; Smith 1999), and research relative to the construct is still considered "unresolved" (Caruana, Ewing, and Ramaseshan 2000, p. 57) and "far from conclusive" (Athanassopoulos 2000, p. 191). A call for research that specifically examines the "dimensionality" of the service quality construct (Parasuraman, Zeithaml, and Berry 1994, p. 221) has yet to be successfully addressed.

In the literature, there has been considerable progress as to how service quality perceptions should be measured (e.g., Babakus and Boller 1992; Brown, Churchill, and Peter 1993; Cronin and Taylor 1992; Parasuraman, Zeithaml, and Berry 1985, 1988, 1991, 1994; Teas 1993) but little advance as to what should be measured. Researchers generally have adopted one of two conceptualizations. The first is the "Nordic" perspective (Grönroos 1982, 1984), which defines the dimensions of service quality in global terms as consisting of functional and technical quality. The second, the "American" perspective (Parasuraman, Zeithaml, and Berry 1988), uses terms that describe service encounter characteristics (i.e., reliability, responsiveness, empathy, assurances, and tangibles). Although the latter conceptualization dominates the literature, a consensus has not evolved as to which, if either, is the more appropriate approach. Moreover, no attempt has been made to consider how the differing conceptualizations may be related.

Although it is apparent that perceptions of service quality are based on multiple dimensions, there is no general agreement as to the nature or content of the dimensions. Two (e.g., Grönroos 1982; Lehtinen and Lehtinen 1982; Mels, Boshoff, and Nel 1997), three (e.g., Rust and Oliver 1994), five (e.g., Parasuraman, Zeithaml, and Berry 1988), and even ten (e.g., Parasuraman, Zeithaml, and Berry 1985) dimensions have been proposed. However, it is apparent that service quality evaluations are highly complex processes that may operate at several levels of abstraction (Carman 1990). The missing link appears to be a unifying theory, or conceptualization, that reflects this complexity and the hierarchical nature of the construct.

The objective of this study is to identify a new and integrated conceptualization of service quality in order to move forward with this research agenda. Given the ambiguity in the literature and the importance of developing favorable service quality perceptions among consumers (Zeithaml, Berry, and Parasuraman 1996), this new perspective is well justified.

Conceptual Background

The Origins of Service Quality Theory: The Disconfirmation Paradigm

The foundation of service quality theory lies in the product quality and customer satisfaction literature. Early conceptualizations (e.g., Grönroos 1982, 1984; Parasuraman, Zeithaml, and Berry 1985) are based on the disconfirmation paradigm employed in the physical goods literature (e.g., Cardozo 1965; Churchill and Surprenant 1982; Howard and Sheth 1969; Oliver 1977, 1980; Olshavsky and Miller 1972;

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Olson and Dover 1976). This suggests that quality results from a comparison of perceived with expected performance, as is reflected in Grönroos's (1982, 1984) seminal conceptualization of service quality that "puts the *perceived* service against the *expected* service" (Grönroos 1984, p. 37, emphasis in original). In addition to adapting the disconfirmation paradigm to the measurement of service quality, Grönroos (1982) identifies two service quality dimensions, as shown in Figure 1, Panel A. Functional quality represents how the service is delivered; that is, it defines customers' perceptions of the interactions that take place during service delivery. Technical quality reflects the outcome of the service act, or what the customer receives in the service encounter.

The disconfirmation paradigm also is the basis for Parasuraman, Zeithaml, and Berry's (1985) SERVQUAL model (see Figure 1, Panel B), which views service quality as the gap between the expected level of service and customer perceptions of the level received. Whereas Grönroos (1982) suggests two dimensions, Parasuraman, Zeithaml, and Berry (1988) propose five: the reliability, responsiveness, assurances, empathy, and tangibility characteristics of the service experience.

Alternative Conceptualizations of Service Quality

Three themes are evident in more recent work on service quality. First, several studies advance modified versions of the SERVQUAL model (e.g., Boulding et al. 1993; Cronin and Taylor 1992; DeSarbo et al. 1994; Parasuraman, Zeithaml, and Berry, 1991, 1994; Zeithaml, Berry, and Parasuraman 1996). These modifications drop expectations alto-gether (e.g., Cronin and Taylor 1992), add dimensions to the expectations portion of the model (such as "will" and "should" expectations; see Boulding et al. 1993), or employ alternative methods (such as conjoint analysis) to assess service quality perceptions (Carman 2000; DeSarbo et al. 1994).

A second theme involves the heightened interest in the technical and functional quality dimensions Grönroos (1982, 1984) identifies. For example, Rust and Oliver (1994) offer a three-component model: the service product (i.e., technical quality), the service delivery (i.e., functional quality), and the service environment (see Figure 1, Panel C). Rust and Oliver do not test their conceptualization, but support has been found for similar models in retail banking (McDougall and Levesque 1994) and health care samples (McAlexander, Kaldenberg, and Koenig 1994).

The third theme relates to the structure of the service quality construct. Because of the reports of SERVQUAL's inconsistent factor structure, Dabholkar, Thorpe, and Rentz (1996) identify and test a hierarchical conceptualization of retail service quality that proposes three levels: (1) customers' overall perceptions of service quality, (2) primary dimensions, and (3) subdimensions (see Figure 1, Panel D). This multilevel model recognizes the many facets and dimensions of service quality perceptions. In other words, retail service quality is viewed as a higher-order factor that is defined by two additional levels of attributes.

In summary, scholars have advanced modified versions of either Parasuraman, Zeithaml, and Berry's (1988) five-

FIGURE 1
Conceptualizations Advanced in the Literature
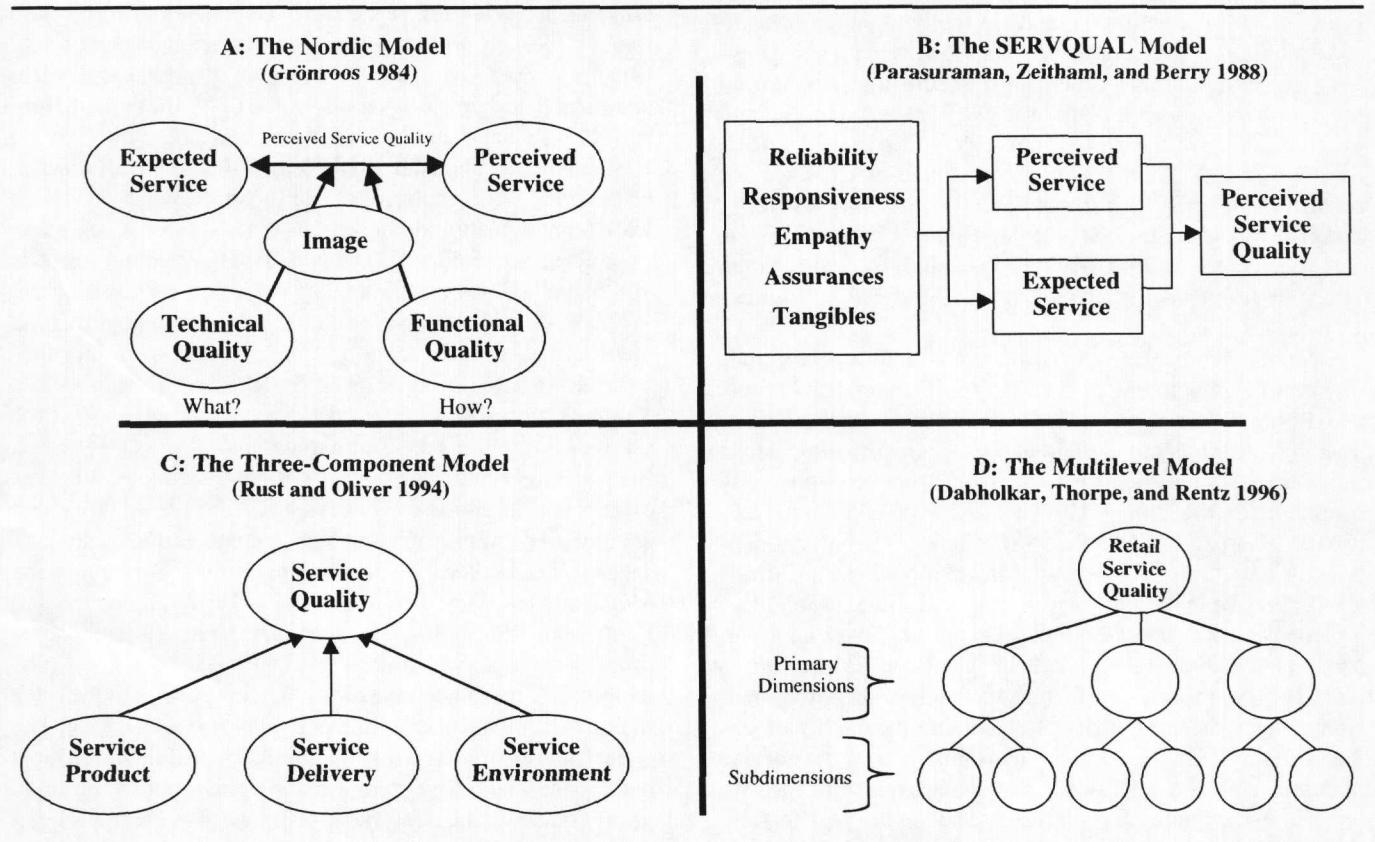
factor American model or Grönroos's (1982) two-factor Nordic conceptualization (Rust and Oliver 1994). That is, service quality is defined by either or all of a customer's perception regarding (1) an organization's technical and functional quality; (2) the service product, service delivery, and service environment; or (3) the reliability, responsiveness, empathy, assurances, and tangibles associated with a service experience.

When assessed collectively, the SERVQUAL model appears to be distinct from the others because it uses terms that describe one or more determinants of a quality service encounter. In other words, the five dimensions of SERVQUAL are terms that might be used to refine some aspect of service quality. However, of major concern should be the question as to what should be reliable, responsive, empathic, assured, and tangible if service excellence is to be ensured. From a theoretical perspective, if service quality perceptions represent a latent variable, something specific must be reliable, responsive, empathetic, assured, and tangible.

We suggest that identifying this "something" is critical in the literature. Specifically, a conceptualization that recognizes the significance of the SERVQUAL factors and defines what needs to be reliable and so forth will respond to the call (e.g., McDougall and Levesque 1994; Oliver 1997) for identifying the attributes that influence service quality perceptions. Such a framework is needed if the true effects of service quality perceptions are to be better understood by both marketing researchers and practitioners.

We adopt Rust and Oliver's (1994) view that the overall perception of service quality is based on the customer's evaluation of three dimensions of the service encounter: (1) the customer–employee interaction (i.e., functional quality; see Grönroos 1982, 1984), (2) the service environment (see Bitner 1992), and (3) the outcome (i.e., technical quality; see Grönroos 1982, 1984). Given the growing support for revisiting Grönroos's seminal conceptualization (e.g., Bitner 1990; Lassar, Manolis, and Winsor 2000; Mohr and Bitner 1995; Oliver 1997; Rust and Oliver 1994) and the recent evidence that the service environment affects service quality perceptions (e.g., Baker 1986; Bitner 1990, 1992; Spangenberg, Crowley, and Henderson 1996; Wakefield, Blodgett, and Sloan 1996), a framework that incorporates these three dimensions is justified.

We also adopt the view that service quality perceptions are multilevel and multidimensional (Dabholkar, Thorpe, and Rentz 1996). Carman (1990) was perhaps the first to note that customers tend to break service quality dimensions into various subdimensions. Such a structure more fully accounts for the complexity of human perceptions (Dabholkar, Thorpe, and Rentz 1996). There is theoretical support for a multidimensional, multilevel model (e.g., Carman 1990; Czepiel, Solomon, and Surprenant 1985; Dabholkar, Thorpe, and Rentz 1996; McDougall and Levesque 1994; Mohr and Bitner 1995), but there has been little effort to identify the attributes or factors that define the subdimensions. Given the complexity of evaluating the quality of service interactions, the service environment, and the service outcome, this is a significant gap. To address this gap, we undertook the qualitative study described in the next section.

The Qualitative Study

A review of the services marketing literature reveals many examples of qualitative research. Parasuraman, Zeithaml, and Berry (1985) use it to identify dimensions for their SERVQUAL model. On the basis of a qualitative study, Bitner, Booms, and Mohr (1994) and Bitner, Booms, and Tetreault (1990) categorize various determinants of critical service encounters. Likewise, Grove and Fisk (1997) and Tax, Brown, and Chandrashekaran (1998) employ this approach to study customer interactions and service complaint handling. We use qualitative research to identify the subdimensions customers consider when evaluating the quality of the interaction, physical environment, and outcome dimensions of a service experience.

The qualitative data were obtained from responses to open-ended surveys that were administered by trained student assistants. Data collection took place over three weeks and yielded a final usable sample of 391 completed surveys. The age, sex, and income level of respondents were controlled by a quota sampling method. Respondents were asked to complete an open-ended questionnaire about the specific attributes they perceived as influences on the interactions, environments, and outcomes encountered during recent service experiences. Responses were collected across eight industries (amusement parks, full-service restaurants, health care facilities, hair salons, automobile care facilities, dry cleaning, jewelry repair, and photograph developing) and multiple service providers in each industry. The industries and providers were chosen to maximize the diversity of outlets and ensure recent use of the service by the respondents.

The respondents were encouraged to list all factors that influenced their perception of each of the three primary dimensions, with one exception. Dabholkar, Thorpe, and Rentz (1996) report that in their study, respondents regularly listed price as a factor, but the literature clearly suggests that price is a determinant of service value (e.g., Bitner and Hubbert 1994; Chang and Wildt 1994; Drew and Bolton 1987; Heskett, Sasser, and Hart 1990; Zeithaml 1988). More specifically, price is a component of sacrifice that, when combined with service quality, defines a customer's value assessment. Therefore, we followed Dabholkar, Thorpe, and Rentz's (1996) methodology in eliminating price from the decision set.

To code the data, we used an inductive categorization method that involves labeling recurring factors found in a passage of text (Spiggle 1994; Strauss and Corbin 1990). Similar processes are referred to as content analysis in the services literature (de Chernatony and Riley 1999; Tax, Brown, and Chandrashekaran 1998), and the method is used extensively in consumer behavior research to identify and document thematic relationships among various text passages (McCracken 1988; Richins 1997; Schouten and McAlexander 1995; Thompson 1997, 1999; Thompson and Hirschman 1995). In our case, three independent coders processed the survey results to identify and categorize the factors that influenced customer perceptions of the service interaction, physical environment, and service outcome. The coders were familiar with qualitative research procedures but not the marketing literature and were unaware of any a priori conceptualization. The process was therefore data dri-

ven, as the objective was to identify emergent factors from the open-ended responses (Spiggle 1994).

Coders discussed disagreements; if a resolution could not be reached, the incident counted against the reliability assessment (Kassarjian 1977). All potential subdimensions emanating from the responses were counted, but only those judged distinct from the other variables in the model were included in the conceptualization. Also, subdimensions needed to be consistently attributed to their respective primary dimensions; if a factor was listed under more than one primary dimension, it counted against the reliability estimate. Coder reliability was 89%.

The categorization yielded nine distinct subdimensions that were divided evenly among the three primary dimensions, as shown in Figure 2. Although the terms varied slightly, the factors were consistent. Moreover, a subsequent review of the literature revealed much support for the relationships identified between the factors and the primary dimensions. For example, subdimensions of interaction quality (i.e., attitude, behavior, and expertise) and physical environment quality (i.e., ambient conditions, design, and social factors) are similar to those specified in the literature (e.g., Baker 1986; Bitner 1992; Bitner, Booms, and Tetreault 1990). These qualitative results are further discussed in the section on hypotheses, along with the literature that supports the findings.

## Conceptualizing Service Quality: A Hierarchical Approach

Our model suggests that each of the primary dimensions of service quality (interaction, environment, and outcome) has three subdimensions. Furthermore, customers aggregate their evaluations of the subdimensions to form their percep-

tions of an organization's performance on each of the three primary dimensions. Those perceptions then lead to an overall service quality perception. In other words, customers form their service quality perceptions on the basis of an evaluation of performance at multiple levels and ultimately combine these evaluations to arrive at an overall service quality perception.

In addition to the qualitative study, the work of Parasuraman, Zeithaml, and Berry (1985, 1988) was used to refine the definition of the subdimensions. There is debate about SERVQUAL's five-factor structure, but there is wide agreement that these dimensions are important aspects of quality service (Fisk, Brown, and Bitner 1993). For example, it is clear that reliable service is an important part of attaining a favorable perception of quality. Yet there are many aspects of a quality service encounter that should be reliable, such that reliability is not a clear dimension unless it is known what needs to be reliable. We maintain that the dimensionality problems with SERVQUAL/SERVPERF (Cronin and Taylor 1992; Parasuraman, Zeithaml, and Berry 1994) hinge on this issue.

We therefore reposition the SERVQUAL factors as modifiers of the nine subdimensions (see Figure 2). These subdimensions provide the necessary foundation for answering the question of what needs to be reliable, responsive, and so on. In turn, the SERVQUAL dimensions capture how consumers differentiate performance on these dimensions. In other words, they define how the subdimensions are evaluated. Undeniably, the relative importance of the SERVQUAL factors may vary across each dimension depending on individual or situational differences. That is, the SERVQUAL factors theoretically may be an important determinant of any of the nine subdimensions. This may account for the problematic factor structure of the

FIGURE 2
The Research Model
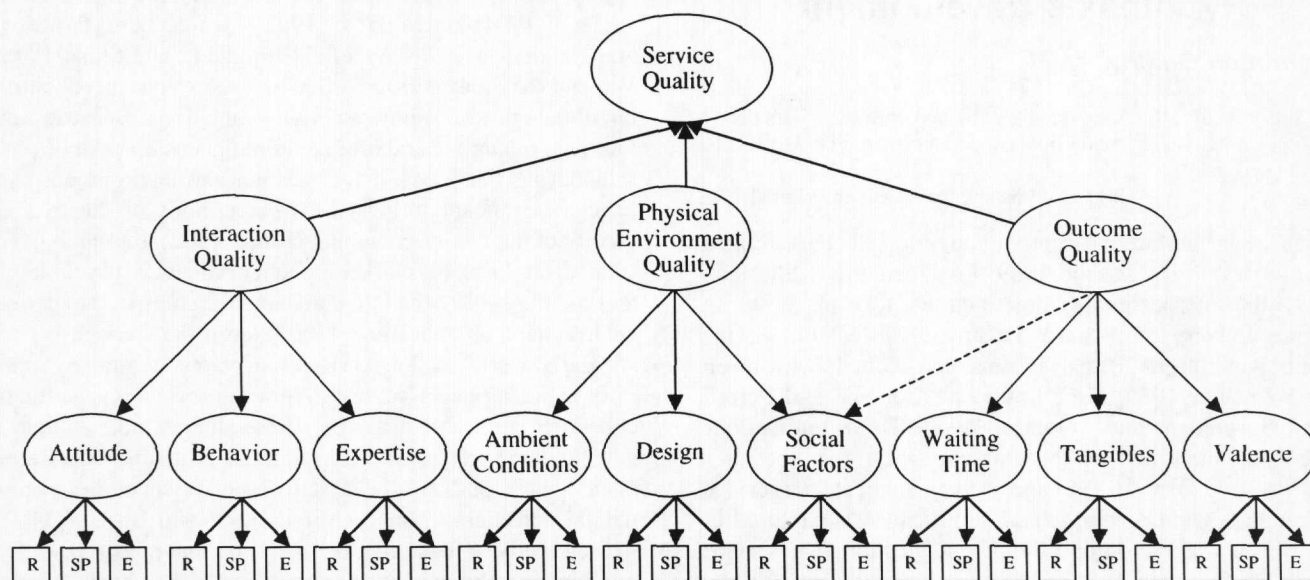
Note: R = a reliability item, SP = a responsiveness item, E = an empathy item. The broken line indicates that the path was added as part of model respecification.

SERVQUAL scale (e.g., Babakus and Boller 1992; Carman 1990; Cronin and Taylor 1992; McDougall and Levesque 1994; Parasuraman, Zeithaml, and Berry 1994; Simon 1995).

In our revised framework, the reliability, responsiveness, and empathy variables are retained, but they are not identified as direct determinants of service quality. Rather, they serve as descriptors of the nine subdimensions identified in the qualitative study. The tangibles dimension is not identified as a descriptor because of evidence that customers use tangibles as a proxy for evaluating service outcomes (Booms and Bitner 1981; McDougall and Levesque 1994). This evidence is supported by our qualitative data, because respondents regularly listed tangible elements as influencing their perceptions of service outcome quality. Therefore, tangibles are included as a subdimension of outcome quality. The assurance dimension was subsequently dropped because it did not remain distinct in factor analyses. Specifically, assurance measures have been found to load on several different factors depending on the industry context (see Babakus and Boller 1992; Carman 1990; Dabholkar, Shepherd, and Thorpe 2000; Frost and Kumar 2000; Llosa, Chandon, and Orsingher 1998; McDougall and Levesque 1994; Mels, Boshoff, and Nel 1997), and they failed to remain distinct in a pretest that was conducted as part of our research.

The conceptualization of service quality advanced here recognizes the complexity of the construct and the two seemingly conflicting perspectives advanced in the literature. We suggest that neither perspective is wrong; each is incomplete without the other. Our qualitative research identifies nine subdimensions that define the three direct determinants of service quality. Thus, these subdimensions reflect the composite set of factors customers consider when they evaluate the quality of the service interaction, environment, and outcome. On the basis of that underlying logic, we tested several hypotheses.

Hypothesis Development

Interaction Quality

Services are often inextricably entwined with their human representatives. In many fields, a person is perceived to *be* the service.

—G. Lynn Shostack (emphasis in original)

Because services are inherently intangible and characterized by inseparability (Bateson 1989; Lovelock 1981; Shostack 1977), the interpersonal interactions that take place during service delivery often have the greatest effect on service quality perceptions (Bitner, Booms, and Mohr 1994; Bowen and Schneider 1985; Grönroos 1982; Hartline and Ferrell 1996; Surprenant and Solomon 1987). These interactions have been identified as the employee–customer interface (Hartline and Ferrell 1996) and the key element in a service exchange (Czepiel 1990). Their significance is captured in Surprenant and Solomon's (1987) suggestion that service quality is more the result of processes than outcomes. Therefore, there is strong support in the literature for including an interaction dimension in the conceptualization of perceived service quality.

H$_1$: Perceptions of the quality of service interactions directly contribute to service quality perceptions.

Our qualitative study indicates that three distinct factors constitute customer perceptions of interaction quality. With few exceptions, the responses referred to some aspect of the attitude, behaviors, and/or expertise of the service personnel. Consider the following comment: "The staff was friendly [attitude], knowledgeable [expertise], and I was greeted as soon as I walked in the door [behavior]." Additional examples are presented in Table 1.

A review of the literature supports these factors as subdimensions of interaction quality. For example, Czepiel, Solomon, and Surprenant (1985, p. 9) suggest that the attitude, behavior (in their term, "manifest" function), and skill of service employees define the quality of the delivered service and ultimately "affect what clients evaluate as a satisfactory encounter." Similarly, Bitner, Booms, and Tetreault (1990) divide the employee–customer interaction into three distinct aspects: demeanor, actions, and skill of employees in resolving failed service incidents. Grönroos (1990) also suggests that the attitudes, behavior, and skills of employees are factored into service quality assessments. Finally, Bitner (1990) proposes that the attitudes and behavior of service personnel largely influence consumer perceptions of functional quality. She adds that these perceptions are subsequently combined with customer evaluations of technical quality and the service environment to define service quality.

H$_2$: Perceptions of employee attitudes directly influence the quality of service interactions.

H$_3$: Perceptions of employee behaviors directly influence the quality of service interactions.

H$_4$: Perceptions about employee expertise directly influence the quality of service interactions.

Service Environment Quality

A body of work (e.g., Baker 1986; Baker, Grewal, and Parasuraman 1994; Bitner 1990, 1992; Spangenberg, Crowley, and Henderson 1996; Wakefield, Blodgett, and Sloan 1996; Wener 1985) considers the influence of the physical or "built" environment on customer service evaluations. Because services are intangible and often require the customer to be present during the process, the surrounding environment can have a significant influence on perceptions of the overall quality of the service encounter (Bitner 1992). Research from such disciplines as marketing, environmental psychology, and sociology has been integrated into the study of the service environment, or what Bitner (1992) terms the "servicescape."

Early works in the services marketing literature exemplify the discipline's interest in how the servicescape affects consumer service evaluations. These studies indicate that it is a fundamental factor. Parasuraman, Zeithaml, and Berry (1985) were perhaps the first to identify several environmental considerations. Rys, Fredericks, and Luery (1987), in their study of restaurant patrons, find that customers infer quality on the basis of their perceptions of the physical facilities. In a cross-sectional qualitative study, Crane and Clarke (1988) report that the servicescape influences perceptions, because customers in four different service industries listed

TABLE 1
Examples from the Qualitative Research of the Nine Subdimensions as Determinants of Service Quality

Attitude
• "The receptionist seemed very snotty. The nurse and doctor were nice, but the attitude of the receptionist ruined my visit."
• "The attitude and personality of the service personnel definitely influenced my opinion. They were very friendly and warm."

Behavior
• "When I told the waitress that my order was wrong, she apologized and promptly brought over the correct order. Excellent service!"
• "The one incident that stands out in my mind was when some money had fallen out of my pocket.... The workers ran me down to give me my money back."

Expertise
• "The first person I spoke with did not seem to know much about what I needed. Even after I had finally selected the tires I wanted, he did not seem to be experienced in entering the data in the computer. My perception of the personnel was directly affected by their lack of knowledge of what they sold."
• "The service personnel really knew their jobs. They were very knowledgeable about the park and knew the answers to all of my questions."

Ambient Conditions
• "The office was peaceful and tranquil. It had nice plants all over, and they had beautiful soft music in the background that calmed my nerves a bit."
• "The photo shop was decorated with bright lights and lots of color. This caught my eye and evoked warm, comfortable feelings."

Design
• "The doctor's office was clean, but people were sitting too close to each other. Germs were spread whenever some-

one sneezed or coughed. But the examination rooms were spread out and private, so I felt comfortable talking to the doctor."
• "The photo processing area was located in an inconvenient area. It was at the front of the store where all of the traffic was coming in. This made it hard to organize a line."

Social Factors
• "Another factor that influenced my perception of the service surroundings was the volume of business. I equate volume with quality; the more people inside, the higher the quality of the restaurant."
• "It wasn't a pleasant experience, since everyone there was pretty unhygienic."

Waiting Time
• "The amount of time that it took to receive my car was the determining factor of my evaluation of the service outcome, which was a poor one. Even though the car was in great condition, the length of time it took to do it was unreasonable."
• "Overall I didn't like the outcome because it took the doctor only three minutes to check me, and I had to wait three hours just to see him."

Tangibles
• "The operation was a success. There were no scars."
• "The quality of the whole park left an impression on me. The food was great, all the rides were clean, and I left with some nice souvenirs."

Valence
• "I didn't like the experience because I didn't feel well. I think if I had felt better, I would have had a better time."
• "I would have had more fun if my kids had behaved better. They made it difficult for me to have a good time."

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the service environment as a consideration factor in their service quality evaluations. Similar results have also been reported for patient evaluations of the service provided by their physicians (Baumgarten and Hensel 1987; McAlexander, Kaldenberg, and Koenig 1994). In view of the prominence of the environment during service delivery, it appears that the servicescape plays an integral role in the formation of service quality perceptions.

H₅: Perceptions of the quality of the physical environment directly contribute to service quality perceptions.

Our qualitative study reveals that three factors influence the perceived quality of the physical environment: ambient conditions, facility design, and social factors (for examples, see Table 1). Ambient conditions and design factors (facility layout in Bitner 1992) are well supported by prior research (Baker 1986; Baker, Grewal, and Parasuraman 1994; Bitner 1992). Ambient conditions pertain to nonvisual aspects, such as temperature, scent, and music (Bitner 1992). Facility design refers to the layout or architecture of the environment and can be either functional (i.e., practical) or aesthetic (i.e., visually pleasing).

The last factor, social conditions, refers to the number and type of people evident in the service setting as well as their behaviors (Aubert-Gamet and Cova 1999; Grove and Fisk 1997). The negative influence of unruly crowds or the disturbance caused by a crying baby fall in this category. This factor was identified by Baker (1986), but there is disagreement over it in the literature. Bitner (1992, p. 66) suggests the term "social cues," which refer to the "signs, symbols, and artifacts" evident in the service setting that influence customer perceptions.

Our qualitative data support Baker's (1986) conceptualization, because respondents repeatedly cited social factors as influencing their perception of the service environment. In contrast, only a handful listed factors pertaining to what might be considered signs, symbols, or artifacts, and nearly all these cases were categorized under the service outcome as indicative of a tangible aspect of the service. There seems to be ample justification for including ambient, design, and social factors as underlying dimensions of the service environment.

H₆: Perceptions of ambient conditions in the service facility directly influence the quality of the physical environment.

H₇: Perceptions of the facility design directly influence the quality of the physical environment.

H_8: Perceptions of social conditions in the service facility directly influence the quality of the physical environment.

Outcome Quality

There is consensus in the literature that the technical quality of a service encounter significantly affects customer perceptions of service quality (e.g., Carman 2000; Grönroos 1982, 1984, 1990; Rust and Oliver 1994). Grönroos (1984, p. 38) defines this factor as "what the customer is left with when the production process is finished." Czepiel, Solomon, and Surprenant (1985) refer to the technical outcome as the "actual" service and posit that it is a determinant in assessing the quality of a service encounter. Rust and Oliver (1994) refer to the service outcome as the "service product" and suggest that it is the relevant feature customers evaluate after service delivery. McAlexander, Kaldenberg, and Koenig (1994) refer to the service outcome in health care industries as "technical care" and find that it is a primary determinant of patients' service quality perceptions. Similarly, de Ruyter and Wetzels (1998) include the service outcome in their health care investigation and find a direct link to service quality. On the basis of the literature and our qualitative study, as well as its pragmatic appeal, it is reasonable to expect outcome quality to affect perceived service quality.

H_9: The service outcome directly contributes to service quality perceptions.

Marketing scholars have yet to identify attributes that define outcome quality. Grönroos (1984) and Rust and Oliver (1994) simply state that this is what the customer is left with when service is rendered. Given the lack of empirical work, we used the results of our qualitative study to identify the subdimensions of outcome quality.

Our survey indicated that waiting time influences outcome quality perceptions. In most cases, responses were negative, though a few were positive when the service delivery was especially timely. In either case, the effect of waiting on outcome quality appears strong. This has considerable support in the literature. Parasuraman, Zeithaml, and Berry (1985) find that customers identify service punctuality as an integral part of their overall evaluation. Maister (1985) reaches a similar conclusion on the basis of qualitative interviews with service personnel. Katz, Larson, and Larson (1991) and Taylor and Claxton (1994) provide empirical verification of this relationship in their studies of the effect of waiting time on bank and airline customers, respectively. Moreover, Houston, Bettencourt, and Wenger (1998) incorporate waiting time into their analysis of service encounter quality and find it to be an important predictor. Therefore, perceived waiting time is identified as a subdimension of outcome quality (see Figure 2).

It is intuitive to infer a negative relationship between waiting time and perceptions of outcome quality, but this only holds if waiting is measured in absolute time. That is, longer waiting periods have a negative effect on quality perceptions (Hui and Tse 1996; Katz, Larson, and Larson 1991; Taylor 1994). In our research, however, waiting time is not measured in absolute terms, because this would require controls associated with experimental conditions (Hui and Tse 1996). Rather, it is evaluated in a manner similar to that used

by Taylor and Claxton (1994). They suggest a positive relationship: More favorable perceptions of waiting time are associated with enhanced outcome quality perceptions. We conceptualize perceived waiting time as a subdimension of outcome quality and predict a positive relationship.

H_{10}: Perceptions of waiting time directly influence service outcome quality.

Another influence on service outcome perceptions is tangible elements, which represent almost half the factors cited by respondents in the qualitative study. Theory suggests that customers use any tangible evidence of the service outcome as a proxy for judging performance (see Booms and Bitner 1981; Hurley and Estelami 1998; Shostack 1977; Zeithaml, Parasuraman, and Berry 1985). The research relating physical evidence to customer evaluations is largely based on economic signaling theory (Murray 1991), but Parasuraman, Zeithaml, and Berry (1985) show that tangible evidence is a factor that service customers consider when forming quality perceptions. Furthermore, tangibles are one of the SERVQUAL dimensions that are generally retained in factor analyses (Mels, Boshoff, and Nel 1997). On the basis of our qualitative research and the literature, we propose the following:

H_{11}: Perceptions of the tangible evidence directly influence service outcome quality.

Our qualitative research also supports the addition of valence as a determinant of outcome quality. Respondents listed various factors that reflect this dimension, which covers the essence of the service outcome above and beyond waiting time and tangibles. That is, valence captures attributes that control whether customers believe the service outcome is good or bad, regardless of their evaluation of any other aspect of the experience. For example, consider a customer who approaches a bank to inquire about a mortgage loan. Service performance may be irrelevant if the loan is not approved. Our research indicates that many of the factors that shape the valence of the outcome are outside the direct control of service management, yet they still influence perceptions of the service outcome. Other examples can occur in such services as sporting events ("We lost the game"), entertainment outlets ("The movie was disappointing"), law offices ("I lost the case"), repair services ("The damage was irreparable"), and airlines ("There was a blizzard"). In these scenarios, the customer may have a positive perception of each service quality dimension, but the negative valence of the outcome can ultimately lead to an unfavorable service experience.

The theoretical basis for incorporating valence is the general belief that service quality is similar to an attitude (Cronin and Taylor 1992; Parasuraman, Zeithaml, and Berry 1985, 1988). As such, the service outcome evaluation process is similar to that described in the attitudinal literature (Fishbein 1961, 1963; Rosenberg 1956). People's attitudes toward an object are based on a summation of their beliefs and evaluations of whether those beliefs are good or bad (Lutz 1975). This good/bad dimension is termed valence and reflects the degree to which the object of interest is considered favorable or unfavorable (Mazis, Ahtola, and Klippel 1975). On the basis of our qualitative research and theory, we conceive valence as a subdimension of outcome quality.

Measures

Measures for some of the variables, such as waiting time (Taylor 1994) and tangibles (Parasuraman, Zeithaml, and Berry 1988), are identified in the literature, but these either are specific to an industry or contain potentially confounding subdimensions. It was therefore necessary to develop measures, and we followed Churchill's (1979) recommended procedure for scale development (see Parasuraman, Zeithaml, and Berry 1988).

On the basis of a review of the literature, we generated an initial pool of 59 items. We iteratively assessed the items for internal consistency (by means of coefficient alpha estimates) and factor analyzed them using convenience samples of students in undergraduate marketing classes at a large state university. We continued the process until the scales exhibited acceptable measurement properties. The result was a final group of 35 items to measure the 13 constructs in the model. Items are listed in the Appendix.

The Sample

The sample was drawn from four service industries: fast-food, photograph developing, amusement parks, and dry cleaning. These were selected because (1) each allows the customer the opportunity (albeit disproportionately) to evaluate the quality of interactions with employees, the environment, and the outcome; (2) they represent an array of service providers (Lovelock 1981); and (3) they are similar to the service industries used in other service quality research (e.g., Parasuraman, Zeithaml, and Berry 1988, 1991; Cronin and Taylor 1992). Two providers per quadrant were examined to enhance the generalizability of the results. The selection of specific firms was based both on their familiarity to the population as evidenced by responses to our qualitative survey and on their comparable service offerings.

The data were gathered in a medium-sized metropolitan area that was dominated by three state-supported universities. The survey method was self-completed questionnaires distributed at various locations. Respondents were allowed to complete only one survey and were asked to base answers on their cumulative experiences with the service provider (see the Appendix). Participants were initially screened to ensure that they had used the service within the previous 12 months. The resulting sample consisted of 1149 respondents.

To ensure authenticity of the data, 15% of the respondents (n = 175) were contacted by telephone and asked to verify selected responses to demographic questions. The surveys were also checked for obvious instances of yea-saying and incompleteness. This process eliminated less than 2% of the sample. The final sample consisted of 1133 participants. A comparison revealed that the sample closely mirrors the general population except for age (the 25–44 age group is slightly overrepresented) and education level (the sample is slightly more educated). The latter can perhaps be attributed to the presence of three universities in the area in which the survey was administered.

Assessment of the Measures

The psychometric properties of the items were evaluated through a comprehensive confirmatory factor analysis using LISREL 8. All items were tested in the same model and were restricted to load on their respective factors. Scale statistics, including intercorrelations, shared variances, and construct reliabilities, are given in Table 2. The results of the confirmatory factor analysis are presented in Table 3, along with several descriptive and diagnostic statistics (means, standard deviations, average variances extracted, parameter estimates, and t-values).

The means reported in Table 3 appear similar across constructs. However, this is somewhat misleading in that the variables were measured across the respondents' aggregate experiences and the means were reported across all four industries. When disaggregated, the means and standard

TABLE 2
Scale Statistics

Variable	INTQ	OUTQ	PHYQ	WT	TANG	VAL	ATT	BEH	EXP	AMB	DES	SOC	SQ
INTQ	**.87**	.49	.25	.14	.15	.45	.64	.59	.50	.31	.23	.30	.52
OUTQ	.70	**.90**	.36	.19	.21	.58	.52	.52	.56	.42	.29	.36	.58
PHYQ	.50	.60	**.85**	.06	.12	.37	.27	.26	.29	.64	.49	.30	.36
WT	.38	.44	.25	**.82**	.26	.26	.15	.19	.18	.08	.11	.20	.16
TANG	.39	.46	.34	.51	**.91**	.37	.14	.18	.15	.09	.10	.23	.28
VAL	.67	.76	.61	.51	.61	**.89**	.45	.50	.50	.42	.34	.42	.62
ATT	.80	.72	.52	.39	.38	.67	**.93**	.76	.61	.36	.27	.34	.50
BEH	.77	.72	.51	.44	.42	.71	.87	**.92**	.66	.35	.28	.36	.53
EXP	.71	.75	.54	.42	.39	.71	.78	.81	**.91**	.40	.30	.35	.50
AMB	.56	.65	.80	.26	.30	.65	.60	.59	.63	**.93**	.56	.36	.44
DES	.48	.54	.70	.33	.32	.58	.52	.53	.55	.75	**.85**	.41	.34
SOC	.55	.60	.55	.45	.48	.65	.58	.60	.59	.60	.64	**.72**	.49
SQ	.72	.76	.60	.49	.53	.79	.71	.73	.71	.66	.58	.70	**.90**

Notes: Intercorrelations are presented in the lower triangle of the matrix. The content reliability of each scale is depicted in boldface on the diagonal. Shared variances in percentage form are given in the upper triangle of the matrix. INTQ = interaction quality, OUTQ = outcome quality, PHYQ = physical environment quality, WT = waiting time, TANG = tangibles, VAL = valence, ATT = attitude, BEH = behavior, EXP = expertise, AMB = ambient conditions, DES = design, SOC = social factors, and SQ = service quality.

TABLE 3
Summary Measurement Results

| Variable	Mean	Standard Deviation	Average Variances Extracted	Parameter Estimates	t-Values
Interaction quality	4.76	1.43	77%	.86–.90	35.23–37.47
Attitude	4.65	1.48	82%	.86–.93	36.33–41.16
Behavior	4.63	1.40	80%	.87–.91	36.88–39.42
Expertise	4.75	1.38	77%	.84–.90	34.74–38.39
Physical environment quality	4.83	1.45	84%	.90–.93	38.37–40.40
Ambient conditions	4.76	1.46	82%	.90–.92	38.71–40.12
Design	4.84	1.27	66%	.73–.87	27.56–35.39
Social factors	4.57	1.11	47%	.62–.72	22.06–26.14
Outcome quality	4.87	1.56	81%	.87–.93	36.42–40.09
Waiting time	4.84	1.37	61%	.60–.86	20.79–33.53
Tangibles	4.66	1.43	76%	.85–.90	34.91–38.16
Valence	5.12	1.32	73%	.73–.91	27.83–39.49
Service quality	4.85	1.43	81%	.87–.93	36.60–40.21

Notes: n = 1133; χ^2 = 2442, 482 degrees of freedom; RMSR = .05; NFI = .94; CFI = .95; DELTA2 = .95; RNI = .95.

deviations were notably different both across and within service industries. For example, the amusement parks and photograph developing industries had higher means and less variation than the fast-food and dry cleaning samples. This may be a reflection of the hedonic nature of these industries. In contrast, dry cleaning had the lowest means for nearly every variable. There was also variation within the service industries. For example, the food and waiting time at one fast-food restaurant were rated much higher than those of its competitor, but the latter had a clear advantage in atmospherics. The waiting time perceptions are likely a reflection of the different queuing systems used by the two restaurants.

Because of the large sample size, the model fit was evaluated using the comparative fit index (CFI), DELTA2 (Bollen 1989), and relative noncentrality index (RNI) (McDonald and Marsh 1990), as these have been shown to be the most stable fit indices (Gerbing and Anderson 1992). Other fit indicators (chi-square, root mean square residual [RMSR] and normed fit index [NFI]) are included in Table 3 for evaluative purposes (Hu and Bentler 1999). As shown in Table 3, the results (CFI, DELTA2, RNI = .95) indicate that the comprehensive model fits the data well.

The internal consistency of the scales was assessed through the construct reliability estimates (see Fornell and Larcker 1981) reported in Table 2. The reliability estimates ranged from .72 (social factors) to .93 (attitude and ambient conditions). Convergent validity was evaluated by an examination of both the significance of the t-values and the average variances extracted (Fornell and Larcker 1981). All the t-values were significant ($p \leq .001$), and all but one of the average variance extracted estimates were greater than .50 (Fornell and Larcker 1981); the exception was social factors, which was 47%. Discriminant validity was tested by means of Fornell and Larcker's (1981) criteria, whereby the explained variance for a construct indicator (see Table 3) is compared with the shared variance (see Table 2) between the construct and the other variables in the model. The results indicate discriminant validity, because the average variance extracted by each of the scales was greater than the shared variance between the construct and all other variables.

FIGURE 3
Test of the Second-Order Factor Model
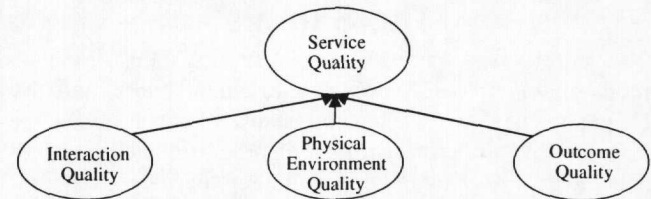
Research Methods and Results

The conceptualization depicted in Figure 2 suggests that service quality is a multidimensional, hierarchical construct. It therefore can be described as a third-order factor model suitable for testing through traditional structural equation modeling techniques. Given that our goal was to assess the proposed framework, testing the model in its entirety was a priority. Despite a lack of precedent for simultaneously analyzing a third-order factor model (Dabholkar, Thorpe, and Rentz 1996), we tested the conceptualization in a single structural model using LISREL 8. Because such a test has not been reported in the literature and because the items play a central role in this study, we performed two supplementary tests to assess further the model's structure, as shown in Figures 3 and 4. Similar to the procedure of Dabholkar, Thorpe and Rentz (1996), we first tested the primary dimensions and then tested the subdimensions. We added an analysis of the overall model to complete the three-stage design. Thus, the fit of the models determines the degree to which the items measure the same hierarchical factor as well as whether the variables depicted in Figure 2 are well supported as subdimensions of service quality (Dabholkar, Thorpe, and Rentz 1996).

The first stage of the process was to test the second-order factor model (see Figure 3). The purpose was to determine whether the three primary dimensions can be viewed as appropriate indicators of overall service quality. Because

the three primary dimensions have not been empirically tested, such an analysis has added merit. The results of the first stage test, presented in Table 4, indicate that the model fits the data well (CFI, DELTA2, RNI = .99).

The second stage assessed the nine subdimensions (see Figure 4). We argue that explicit dimensions are needed to anchor the SERVQUAL factors. Accordingly, we developed 27 descriptive measures to assess the nine subdimensions. This stage tests these descriptors as well as their relevance in conceptualizing service quality. The results reported in Table 4 support these descriptive measures (CFI, DELTA2, and RNI = .93).

The results of the overall model test are also presented in Table 4 and indicate an acceptable fit to the data (CFI = .91; DELTA2, RNI = .92). Although the structural model appears to support the conceptualization, the significance of the individual paths identified in Figure 2 provides a more comprehensive test. All the paths depicted in the research model were supported, as the t-values associated with the paths were positive and significant ($p \leq .001$). For exploratory and generalization purposes, the model was also assessed on the disaggregated industry samples. The results were similar to those reported for the overall sample (CFI estimates ranged from .89 to .92 and R^2 ranged from .76 to .89), with one exception. The path from interaction quality to service quality was insignificant in the photograph developing sample. All other paths were significant and exhibited similar loadings in each of the four subsamples.

Consideration of Alternative Paths

Although the research model is well grounded and appears to be robust, the potential for model respecification needs to be considered (Anderson and Gerbing 1988). The objective

is to increase the degree to which the conceptualization captures the data and, in turn, improve the validity of the conceptualization (Bentler and Chou 1987). In so doing, it is recommended that theoretical paths be avoided (Robles 1996). These are based on relationships established in the literature and should be eliminated from the respecification consideration set. Ignoring this decree is referred to as "data snooping" (Bentler and Chou 1987; MacCallum 1986) and is not a recommended practice.

In contrast, empirical paths have conceptual structures that are not yet well defined and therefore can be considered for respecification (Robles 1996). We identified several such paths. They were selected either because there is little research on these relationships (such as the valence construct) or because there is some evidence that a subdimension may influence more than one primary dimension (i.e., load on more than one factor). For example, it appears that waiting time may affect not only outcome quality but also perceptions of employee performance. Taylor (1994) and Taylor and Claxton (1994) infer that this can occur in the short run through the development of negative affect (e.g., anger, a bad mood). Therefore, a path between waiting time and interaction quality should be examined.

A second prospective path was identified between tangibles and physical environment quality. The servicescape literature identifies artifacts (Bitner 1992) as a possible determinant of the quality of the physical environment. As noted previously, our qualitative data support Baker's (1986) social dimension, but the path should be investigated nonetheless.

A third and fourth possible respecification was identified from Grove and Fisk's (1997) study on other customers. Their research in the amusement parks industry supports a relationship between a service firm's clientele and customer

TABLE 4
Structural Equation Results

Model (n = 1133)	χ^2	Degrees of Freedom	RMSR	NFI	CFI	Δ2	RNI
Model 1: test of the primary dimensions	67.27	14	.01	.99	.99	.99	.99
Model 2: test of the subdimensions	2260.24	312	.07	.92	.93	.93	.93
Model 3: test of the overall model	3801.38	545	.07	.90	.91	.92	.92
Model 3a: the respecified model	3604.02	544	.06	.91	.92	.92	.92

FIGURE 4
Test of the Subdimensions
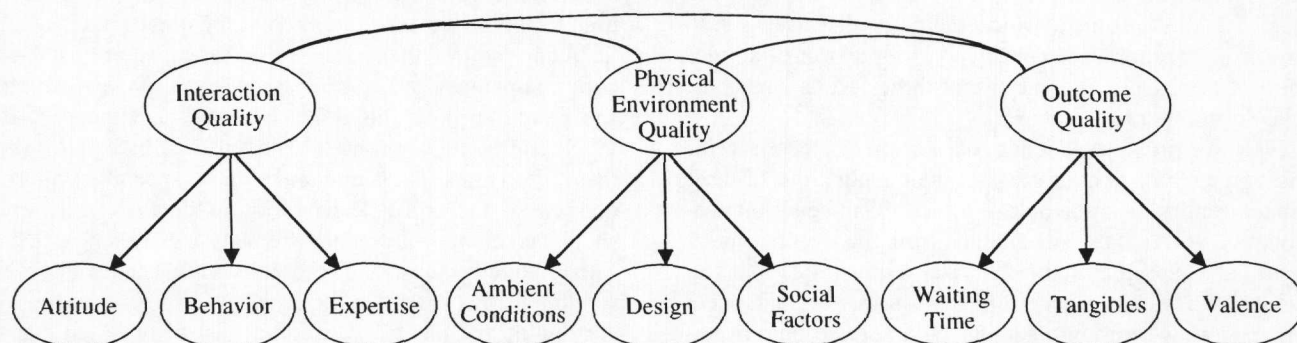
perceptions of the service outcome. Moreover, their litera-
ture review indicates that this relationship may carry over to
perceptions of the firm's employees, though this effect was
not tested. Therefore, paths between social factors a● inter-
action/outcome quality should also be considered.

These paths, along with several associated with valence,
were added to the research model both collectively and indi-
vidually (i.e., one at a time). The results were consistent
across methods and industries. With one exception, the
added paths were not supported because they either were
insignificant or did not improve the model fit or both. The
lone exception was the relationship between social factors
and outcome quality (see Figure 2). This path was signifi-
cant in all samples, and its addition consistently and signif-
icantly ($p \leq .001$) improved the model fit (see Table 4).
Moreover, a comparison of the common parameters across
the original and respecified models resulted in a correlation
between the two solutions that approaches 1.00. This both
supports the stability of the model and suggests that the
original conceptualization was incomplete before the addi-
tion of the path (Bentler and Chou 1987).

A review of the qualitative data also provided some sup-
port for this relationship; a few comments were classified as
social factors and categorized as outcome quality elements.
From a practical perspective, this addition indicates that the
appearance and behavior of other customers not only influ-
ence perceptions of the physical environment but also can
enhance or detract from the service outcome. These results
are consistent with those reported by Grove and Fisk (1997).

Discussion

Despite two decades of study and much lively debate, con-
ceptual work on service quality can best be described as
divergent. At the core of the debate are two competing per-
spectives, termed the Nordic and American schools (Asub-
onteng, McCleary, and Swan 1996; Lam and Woo 1997;
Mels, Boshoff, and Nel 1997). The point of contention is
that the former defines service quality using overall categor-
ical terms, whereas the latter uses descriptive terms. Both
perspectives highlight important aspects of service quality,
but neither fully captures the construct. The resulting
impasse has led to a call for research that reconsiders the
various dimensions of service quality.

The results presented here are an effort to integrate the
two schools and move forward. We provide qualitative and
empirical evidence that service quality is a multidimen-
sional, hierarchical construct. The paths in the research
model are all confirmed, which indicates that each subdi-
mension is appropriately conceived as an aspect of service
quality. Collectively, it appears that these results contribute
to the discipline in several areas.

First, we provide evidence that customers form service
quality perceptions on the basis of their evaluations of three
primary dimensions: outcome, interaction, and environmen-
tal quality. The first two are adapted from the Nordic school,
in particular Grönroos's (1982, 1984) seminal idea that ser-
vice quality is assessed according to customer evaluations of
outcomes as well as interactions with service employees.
The third primary dimension reflects the influence of the ser-

vice environment on quality perceptions. Therefore, we offer
the first empirical evidence for Rust and Oliver's (1994)
three-component conceptualization of service quality.

Second, our qualitative and empirical results also indi-
cate that the three primary dimensions are composed of mul-
tiple subdimensions. Customers base their evaluation of the
primary dimensions on their assessment of three correspond-
ing subfactors. The combination of all these constitutes a
customer's overall perception of the quality of service. On
the basis of these findings, it appears that a hierarchical con-
ceptualization of service quality is appropriate.

Third, the results indicate that the reliability, responsive-
ness, and empathy of service providers are important to the
provision of superior service quality, as is suggested by the
American school (e.g., Parasuraman, Zeithaml, and Berry
1985, 1988). Yet we argue that these are modifiers of the sub-
dimensions, as opposed to direct determinants. The implica-
tion is that they represent how each subdimension is evalu-
ated (reliable or not, responsive or not, and so on), whereas
the subdimensions answer the question as to what about the
service should be reliable, responsive, and empathetic.

Our study achieves two important objectives. First, it con-
solidates multiple service quality conceptualizations into a
single, comprehensive, multidimensional framework with a
strong theoretical base. Second, it answers the call for a new
direction in service quality research and may help alleviate
the current stalemate. These advances are particularly signifi-
cant because a high level of service quality is associated with
several key organizational outcomes, including high market
share (Buzzell and Gale 1987), improved profitability relative
to competitors (Kearns and Nadler 1992), enhanced customer
loyalty (Zeithaml, Berry, and Parasuraman 1996), the realiza-
tion of a competitive price premium (Zeithaml, Berry, and
Parasuraman 1996), and an increased probability of purchase
(Zeithaml, Berry, and Parasuraman 1996).

Managerial Implications

Our model can greatly assist managers in understanding how
their customers assess the quality of service experiences.
Essentially, we address three basic issues: (1) what defines
service quality perceptions, (2) how service quality percep-
tions are formed, and (3) how important it is where the service
experience takes place. These three factors require manager-
ial attention in efforts to improve consumer perceptions of
service quality. Therefore, our framework can guide managers
as they endeavor to enhance customers' service experiences.

The potential applications of this study are numerous.
From a strategic standpoint, the conceptualization can be
used to categorize customers across the nine subdimensions.
Segment profiles then can be created to identify areas of
core competency as well as service deficiencies. Isolating
and resolving problems noted by loyal customers (Bolton
1998) and by those prone to word-of-mouth behavior (Zei-
thaml, Berry, and Parasuraman 1996) is especially important
in view of the profit deterioration associated with even a
small percentage of customer defections (Reicheld 1996).
The relative performance of organizational units across the
subdimensions also can be tracked. From a competitive
standpoint, the identified variables can be used to compare
service levels with competitors' offerings. For example, the

fast-food data indicate that one competitor is a clear leader in perceptions of food quality, whereas the other derives a competitive edge from the ambience of its servicescape.

Our multilevel conceptualization is unique in that it allows for analysis at several levels of abstraction. For example, a practitioner interested in perceptions of service on a cumulative basis can use the global measures to determine an overall service quality evaluation. For researchers who focus on the quality of the primary dimensions, the six items pertaining to Rust and Oliver's (1994) conceptualization can be used as an effective service quality proxy. Or if a practitioner desires a comprehensive service quality analysis, the complete scale can be used both to determine an overall service quality assessment and to identify specific areas that are in need of attention. Analyses performed in this fashion enable managers to devote resources to improving either service quality collectively or specific aspects of the service act. This flexibility can have important implications for managers who operate in more than one service industry. As was evident in the photograph developing sample, the importance of the subdimensions can vary across service contexts (Parasuraman, Zeithaml, and Berry 1988). In that industry, the results suggest that the interaction dimension is not a key driver of service quality perceptions. Therefore, in other industries with a low level of customer–employee interaction, managers may need to concentrate only on a subset of the dimensions.

For users of SERVQUAL/SERVPERF, the findings suggest that delivering reliable, responsive, and empathetic service is indeed related to improved service quality perceptions. Of this there is little doubt, both intuitively and empirically, but the literature and this research further suggest that guidance is needed as to what is supposed to be reliable and so on. We have identified nine constructs that answer this question. With this kind of focused information, managers not only can diagnose service failures but also can isolate their origins. For example, the SERVQUAL/SERPERF items would convey that one or more aspects of the service delivery are unreliable or unresponsive or lack empathy. Alternatively, our conceptualization not only can identify waiting time as the problem but also can indicate (1) whether waiting time is consistent, (2) whether efforts are being made to minimize the wait, and/or (3) whether the company recognizes customers' time constraints. An explicit and actionable remedy then can be devised.

Research Implications

There are several implications for further research. The most obvious extension is to investigate the interrelationships between service quality and other service constructs. The discipline has made great strides in understanding the relationships between service quality and expectations, satisfaction, and service value, but additional work is needed. In particular, there is a notable lack of discriminant validity between measures of perceived service quality and customer satisfaction. Determining whether our conceptualization can help overcome this problem should be of great interest to researchers. Moreover, any improvement in the ability to capture service quality perceptions will enhance the understanding of service value. Specifically, value attributions are defined in part by what a customer "gets" from a service

experience. A more complete representation of service quality improves the ability of researchers to capture this portion of consumers' value attributions.

Given the interest in investigating internal service quality (Bitner, Booms, and Tetreault 1990; Brown and Swartz 1989; Frost and Kumar 2000; Parasuraman, Zeithaml, and Berry 1988), our conceptualization could be extended to analyze service quality from an employee perspective. Indeed, Parasuraman, Zeithaml, and Berry (1988) argue that overall service quality measures can easily be adapted to serve in such a fashion.

Further work investigating valence as a subdimension of service quality is needed. Our findings indicate that the valence of the service outcome can have an effect on overall perceptions of service quality. Because the factors driving valence tend to be beyond the control of service managers (e.g., bad weather, bad credit, the wrong verdict), more research is needed to identify possible strategies for counteracting these effects. It may be that one or more of the other subdimensions help neutralize negative valence. For example, exceptionally friendly service or a particularly attractive setting might outweigh these effects. The loyal support of athletic teams such as the Chicago Cubs and Boston Red Sox is a testament to this potential. Revenue generation for these franchises is insulated from the performance of the team largely by the tradition and atmosphere of their stadiums (i.e., the physical environment).

Finally, the scale developed in this study can be used to examine each primary dimension of service quality in greater depth. The literature review suggests that relatively few scholars have empirically analyzed the quality of the customer–employee interaction, the service environment, and the service outcome. Moreover, our findings indicate that the importance of the dimensions may vary depending on industry characteristics. Future studies could employ the items to investigate each construct more fully or even the interactions among the set. Questions remain as to whether customer perceptions of the quality of interactions, the service environment, or outcomes dominate overall service quality perceptions, as well as such issues as customer willingness to revisit or offer positive word-of-mouth endorsements. Our model can facilitate these and other research efforts.

Limitations

As does any research project, our study has some limitations. The four services tested account for only a small portion of service industries, which makes generalizing the results risky. Also, the 12-month interval in data collection may have influenced the variance in responses and therefore should be considered a limitation. In addition, although the measures used in the study perform well in multiple tests and across several industries, further analysis of the items is needed in other contexts to establish more definitive proof of reliability and validity.

Finally, our conceptualization is intended as a global view of service quality. Our goal was to develop a model that identifies the structure and factors considered when customers evaluate a typical service encounter and, in so doing, offer a unifying theory that draws from the literature to date.

Yet we acknowledge that it may be impossible to develop a model that is equally applicable across all service industries. For example, highly automated services (e.g., remote services) would require the evaluation of only a subset of the factors discussed here (i.e., remote services have little or no customer–employee interaction). We therefore stress that modifications of this conceptualization to account for industry-specific factors are critical.

Appendix
The Survey Items

All items were scored on a seven-point Likert scale (1 = "strongly disagree," 7 = "strongly agree"). In the following items, r indicates a reliability item, sp indicates a responsiveness item, and em indicates an empathy item.

Interaction Quality

Overall, I'd say the quality of my interaction with this firm's employees is excellent.

I would say that the quality of my interaction with XYZ's employees is high.

Attitude

You can count on the employees at XYZ being friendly (r).

The attitude of XYZ's employees demonstrates their willingness to help me (sp).

The attitude of XYZ's employees shows me that they understand my needs (em).

Behavior

I can count on XYZ's employees taking actions to address my needs (r).

XYZ's employees respond quickly to my needs (sp).

The behavior of XYZ's employees indicates to me that they understand my needs (em).

Expertise

You can count on XYZ's employees knowing their jobs (r).

XYZ employees are able to answer my questions quickly (sp).

The employees understand that I rely on their knowledge to meet my needs (em).

Service Environment Quality

I would say that XYZ's physical environment is one of the best in its industry.

I would rate XYZ's physical environment highly.

Ambient Conditions

At XYZ, you can rely on there being a good atmosphere (r).

XYZ's ambiance is what I'm looking for in a _____ (sp).

XYZ understands that its atmosphere is important to me (em).

Design

This service provider's layout never fails to impress me (r).

XYZ's layout serves my purposes (sp).

XYZ understands that the design of its facility is important to me (em).

Social Factors

I find that XYZ's other customers consistently leave me with a good impression of its service (r).

XYZ's other customers do not affect its ability to provide me with good service (sp).

XYZ understands that other patrons affect my perception of its service (em).

Outcome Quality

I always have an excellent experience when I visit XYZ.

I feel good about what XYZ provides to its customers.

Waiting Time

Waiting time at XYZ is predictable (r).

XYZ tries to keep my waiting time to a minimum (sp).

This service provider understands that waiting time is important to me (em).

Tangibles

I am consistently pleased with the _____ at XYZ (r).

I like XYZ because it has the _____ that I want (sp).

XYZ knows the kind of _____ its customers are looking for (em).

Valence

Directions: These questions refer to whether you think the outcome of your experience was good or bad. Please choose the number which best reflects your perception of whether your experience was good or bad.

When I leave XYZ, I usually feel that I had a good experience (r).

I believe XYZ tries to give me a good experience (sp).

I believe XYZ knows the type of experience its customers want (em).

Service Quality

I would say that XYZ provides superior service.

I believe XYZ offers excellent service.

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