A Measure of Service Quality for Retail Stores: Scale Development and Validation

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Current measures of service quality do not adequately capture customers' perceptions of service quality for retail stores (i.e., stores that offer a mix of goods and services). A hierarchical factor structure is proposed to capture dimensions important to retail customers based on the retail and service quality literatures as well as three separate qualitative studies. Confirmatory factor analysis based on the partial disaggregation technique and cross-validation using a second sample support the validity of the scale as a measure of retail service quality. The implications of this Retail Service Quality Scale for practitioners, as well as for future research, are discussed.

INTRODUCTION

The retail environment is changing more rapidly than ever before. It is characterized by intensifying competition from both domestic and foreign companies, a spate of mergers and acquisitions, and more sophisticated and demanding customers who have greater expectations related to their consumption experiences (Sellers 1990; Smith 1989). Consequently, retailers today must differentiate themselves by meeting the needs of their customers better than the competition. There is general agreement that a basic retailing strategy for creating competitive advantage is the delivery of high service quality (e.g., Berry 1986; Hummel and Savitt 1988; Reichheld and Sasser 1990).

The most widely known and discussed scale for measuring service quality is SERVQUAL, a scale designed to measure five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Although SERVQUAL has been empirically tested in a number of studies involving "pure" service settings (e.g., banking, long-distance telephone service, securities brokerage, and credit card service), it has not been successfully adapted to and validated in a retail store environment. In fact, little research has been conducted in retail settings, defined here as stores that offer a mix of merchandise and service. A retail store experience involves more than a nonretail service experience in terms of customers negotiating their way through the store, finding the merchandise they want, interacting with several store personnel along the way, and returning merchandise, all of which influence customers' evaluations of service quality. Thus, although measures of service quality for pure service environments and for retail environments are likely to share some common dimensions, measures of retail service quality must capture additional dimensions. Our purpose is to investigate the dimensions of service quality in a retail environment and to develop and validate a scale to measure retail service quality.

EXPLORING POSSIBLE FACTOR STRUCTURES FOR RETAIL SERVICE QUALITY

An examination of the retail literature offers little to support a theory-based factor structure of retail service quality. The retail literature focuses on service quality at either the integrated or the attribute level; there is a lack of discussion of service quality at the factor (or dimension) level. At the integrated level, Westbrook (1981) suggests that two broad categories of retailer-related experiences

are important to the customer: (1) in-store experiences and (2) experiences related to the merchandise. In-store experiences include interactions with store employees as well as the ease of walking around the store. Experiences related to merchandise include quality and availability of merchandise. Although we agree that these experiences are important to retail customers, both categories appear to encompass more than one factor or dimension. In addition, there may be an overlap between the two categories. For example, merchandise displays could be viewed both as in-store experiences and experiences related to merchandise. Viewing service quality at this integrated level does little to suggest the separate and critical dimensions of retail service quality that would be useful to retailers and researchers.

At the attribute level, researchers suggest that store layout and the quality of merchandise are important to the customer's perception and evaluation of retail stores (Gutman and Alden 1985; Hummel and Savitt 1988; Mazursky and Jacoby 1985; Oliver 1981). Store layout includes the ease of locating desired merchandise and the ease of moving around in the store. Westbrook (1981) and Mazursky and Jacoby (1985) report that other important criteria on which customers evaluate retail stores are the credit and charge account policies of the store and the ease with which stores refund or exchange merchandise. Baker, Grewal, and Parasuraman (1994) suggest that store environment encompassing ambient attributes (e.g., music), design attributes (e.g., physical facilities), and social attributes (e.g., customer responsiveness of service providers) are important to customers of retail stores in evaluating service quality. Another attribute identified as important to retail shoppers is ease of parking (Oliver 1981). Finally, Westbrook (1981) suggests that customers are sensitive to a service provider's willingness to promptly attend to problems or complaints. Although it is useful to review the retail literature to develop a list of attributes that are important to customers in evaluating retail service experiences, there is little support to suggest how these attributes may be combined into a few critical dimensions of retail service quality.

Because of the weak theoretical support for a factor structure provided by the retail literature, a review of the service quality literature was conducted to suggest possible factors for retail service quality. As mentioned earlier, researchers have attempted to test and/or adapt the SERVQUAL instrument in various settings. These settings include a health care setting (Babakus and Mangold 1989), business-to-business services (Brensinger and Lambert 1990), a dental school patient clinic, business school placement center, tire store, and acute care hospital (Carman 1990), a utility company (Babakus and Boller 1991), department stores (Finn and Lamb 1991), health care (Bowers and Swan 1992), banking, pest control, dry cleaning, and fast food (Cronin and Taylor 1992), department stores (Guiry, Hutchinson, and Weitz 1992), the computer software industry (Pitt, Oosthuizen, and Morris 1992), and banking (Spreng and Singh 1993). In general, these studies do not support the factor structure posited by Parasuraman,

Zeithaml, and Berry (1988). See Table 1 for a review of the methodology and results from these studies.

The studies of particular interest to this research are those conducted in a retail setting. Carman (1990) tested SERVQUAL mainly in pure service settings (dental school patient clinic, business school placement center, acute care hospital); the one exception was a tire store, an example of a retailer offering a mix of merchandise and services. Carman found nine factors of service quality, concluded that the five dimensions identified by Parasuraman et al. (1988) were not generic, and suggested that the instrument be adapted by adding items or factors as pertinent to different situations.

Finn and Lamb (1991) tested SERVQUAL in four different types of retail stores, ranging from "stores like Kmart" to "stores like Neiman Marcus." Using confirmatory factor analysis, Finn and Lamb were unable to find a good fit to the proposed five-factor structure and concluded that SERVQUAL, without modification, could not be used as a valid measure of service quality in a retail setting. However, they did not offer an alternative acceptable structure or measure.

In an unpublished paper, Guiry et al. (1992) modified the original 22-item SERVQUAL to a 51-item instrument by dropping 7 items and adding 36 new items designed to measure service attributes at the retail store level. Exploratory factor analysis revealed seven dimensions: (1) personal service during interaction with employees, (2) merchandise assortment, (3) store transaction procedure reliability, (4) employee availability in the store before interaction, (5) tangibles, (6) store service policy reliability, and (7) price. Although this study represents a good start toward the development of a service quality scale for the retail setting, the research was based on exploratory factor analysis and not on a theory-based factor structure. Additionally, the inclusion of price in a service quality construct explication is unusual. Although we recognize that price is an important determinant of store patronage, we view it as distinct from service quality.

Finally, in a study on customer evaluations of banking, Spreng and Singh (1993) performed a confirmatory factor analysis of SERVQUAL and found a poor fit for the five dimensions. They found a lack of discriminant validity between responsiveness and assurance and noted that although modification indices were high, there was no clear indication for ways to improve the model fit.

TRIANGULATION OF QUALITATIVE RESEARCH TECHNIQUES

Given the lack of a theory-based factor structure from the retail literature and the fact that SERVQUAL has not been supported or successfully adapted to retailing, it was deemed necessary to conduct further research to gain an understanding of the dimensions of retail service quality. To accomplish this end, qualitative research was conducted using three different qualitative methodologies— phenomenological interviews, exploratory depth

TABLE 1
Summary of SERVQUAL Replication Studies

Study	Instrument	Analysis	Factor Structure
Babakus and Mangold (1989)	15 of original 22 items	Exploratory factor analysis	One meaningful factor was found. Could not identify the a priori five-factor structure.
Carman (1990)	Modifications of SERVQUAL (using 12 to 21 of the original items in each case)	Principal axis factor analysis followed by oblique rotation	Five to nine factors were identified.
Brensinger and Lambert (1990)	All of original 22 items	Principal axis factor analysis followed by oblique rotation	A five-factor structure was found, but only four had eigenvalues > 1.
Finn and Lamb (1991)	All of original 22 items	Confirmatory factor analysis	The five-factor structure had a poor fit. No other structures were analyzed.
Babakus and Boller (1991)	All of original 22 items	Principal axis factor analysis followed by oblique rotation as well as confirmatory factor analysis (CFA)	The five-factor structure was not supported and no other structures were analyzed. CFA resulted in a two-factor structure.
Pitt, Oosthuizen, and Morris (1992)	All of original 22 items	Principal components factor analysis followed by promax rotation	The only study to obtain a five-factor structure. However, the factors were different from SERVQUAL with reliability and responsiveness loading on one factor.
Guiry, Hutchinson, and Weitz (1992)	51 items (15 from the original 22 items plus 36 added items)	Exploratory factor analysis	A seven-factor structure was found.
Cronin and Taylor (1992)	All of original 22 items	(1) Confirmatory factor analysis (CFA); (2) OBLIMIN oblique factor rotation	(1) CFA resulted in a unidimensional factor; (2) The five-factor structure had a poor fit.
Bowers and Swan (1992)	Focus groups	Qualitative methodologies	Identified the five original factors, plus four others.
Spreng and Singh (1993)	All of the original 22 items	Confirmatory factor analysis	The five-factor structure had a poor fit. Combining responsiveness and assurance into one factor did not significantly improve the fit.

interviews, and tracking the customer through the store to monitor evaluations of the shopping experience. The objective was to use a triangulation of research techniques to gain further insights into factors important to customers of retail stores in evaluating service quality.

The first study consisted of three phenomenological interviews conducted to assign meaning to the shopping experience as the *participant* sees it, not as the researcher perceives it. We used the participants' own words in follow-up questions to probe for important issues. This study found that customers were most concerned about store layout as it pertained to walking around the store and finding what they want, treatment by service employees in terms of being helped and feeling comfortable, ease of conducting exchanges and refunds and of resolving problems, and store policies regarding merchandise quality, parking, and credit card acceptance.

A second study employed six depth interviews to discover relevant determinants of the shopping experience not yet identified. Some of the findings of this study were similar to the first one. For example, customers were concerned about the ease of moving through the store, ease of finding what they were looking for, helpfulness of store employees, ease of returning merchandise, and store policies regarding credit. In addition, the depth interviews

revealed that the appearance of the store and its facilities (e.g., restrooms and fitting rooms) was important to customers. These participants also mentioned that they expected the service to be good and anything that was promised to be delivered.

Finally, the third qualitative study used a "tracking" method to monitor the thought processes of three customers as they evaluated a specific shopping experience. A portable tape recorder with a lavalier microphone was inconspicuously attached to the participant's clothing. As they moved through the store, interacted with merchandise and store employees, and made a purchase decision, the participants spoke aloud their thoughts, observations, and reactions, which were tape-recorded. By unobtrusively "monitoring" the customer's experience in the store, information regarding identified components of the shopping experience and the customers' interactions with these elements was collected without significantly altering the natural flow of the experience. These participants commented on store appearance, store layout, helpfulness of service employees, availability of service personnel at the cash registers, and quality of merchandise.

Because there is general agreement in the literature about the conceptual definition of service quality, in our qualitative studies we asked general questions about expe-

FIGURE 1
Proposed Hierarchical Structure for Retail Service Quality
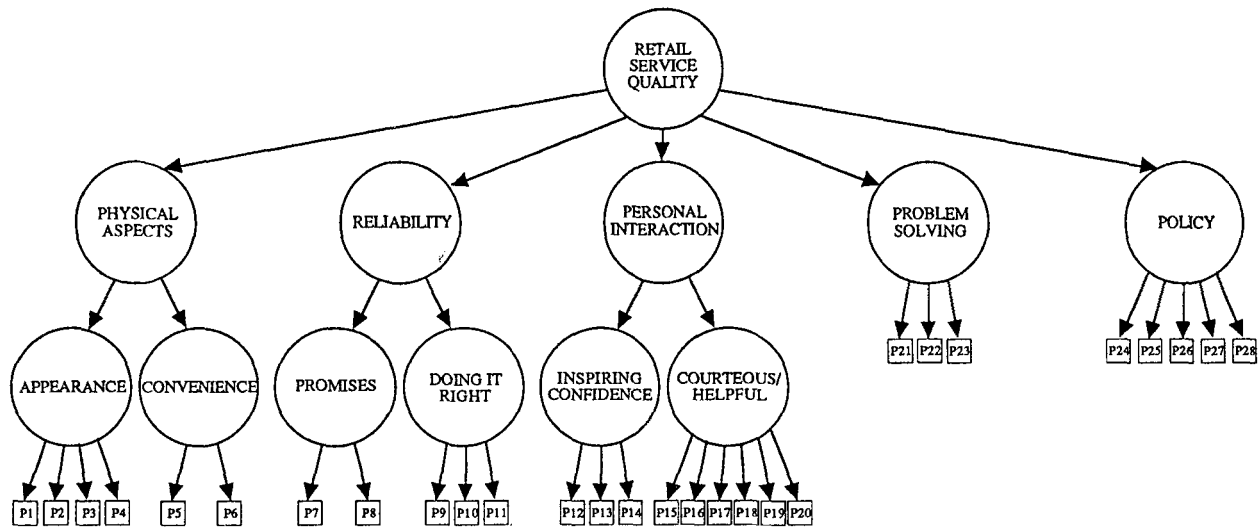
NOTE: It may be noted that the indicator numbers above do not represent the order in which these items were presented in the questionnaire, that is, the items were not grouped according to dimensions but instead were scrambled. They are numbered here to match the order in the appendix.

riences with the retail stores. This is a very common approach in qualitative research. We then selected those aspects of the consumers' experience that were consistent with the generally accepted conceptual understanding of service quality in the literature and used these (along with the literature) to suggest dimensions of retail service quality and items for measuring retail service quality. For example, if customers mentioned courteousness of the service provider and the literature also supported this notion, we included it. If they mentioned price, we excluded it because price is not part of the generally accepted understanding of service quality in the literature.

PROPOSED FACTOR STRUCTURE
FOR RETAIL SERVICE QUALITY

Combining findings from our qualitative research with the review of the retail literature and of SERVQUAL, we propose that retail service quality has a hierarchical factor structure (see Figure 1). The rationale for the hierarchical factor structure is as follows. Previous studies in which SERVQUAL had not been supported found high intercorrelations among items across factors, and several studies had found only one factor. (An initial test of SERVQUAL with our data also showed high correlations among items across factors.) These instances are strongly suggestive of the presence of a higher order factor. Parasuraman, Berry, and Zeithaml (1991) and Parasuraman, Zeithaml, and Berry (1994b) discuss these problems with dimensionality and intercorrelations using SERVQUAL and suggest that future research on service quality should investigate underlying causes and implications of empirical correlations among dimensions of service quality. Reviewing our

qualitative research, there did appear to be a common theme throughout the interviews regarding overall retail service quality. Similarly, the retail literature suggests that customers form evaluations of retail quality both at the attribute and at the integrated level. Based on these various sources, we propose that customers think of retail service quality at three different levels—a dimension level, an overall level, and a subdimension level. We propose that five dimensions—physical aspects, reliability, personal interaction, problem solving, and policy—are central to service quality; we expect them to be distinct but highly correlated. (The five basic dimensions are based on the literature review and our qualitative research as explained below and are also strongly suggested by the correlation matrix in our initial data analysis.) Because they share an underlying theme, we expect a common higher order factor to be present, which we call (overall) retail service quality. Integrating our qualitative research, initial empirical analysis, and the retail literature, it is observed that some dimensions are more complex (as explained below) in that they have more than one component to them. In these cases, we expect the dimensions to have subdimensions that combine related attributes into subgroups.

The first dimension we propose is *physical aspects*. This dimension has a broader meaning than does the SERVQUAL (Parasuraman et al. 1988) or the Guiry et al. (1992) tangibles dimension. In addition to the appearance of the physical facilities, it encompasses the convenience offered the customer by the layout of the physical facilities. Both the retail literature and our qualitative research suggest that there are two subdimensions with regard to the physical aspects of the store. Retail literature suggests that store appearance is important to retail customers (e.g., Baker et al. 1994), a notion supported by the

findings of our depth interviews and our customer tracking studies. For example, the respondents in the depth interviews referred to the cleanliness of the store, the general appearance of the store, and the appearance of public facilities. In addition, the retail literature suggests that customers value the convenience of shopping that physical aspects, such as store layout, offer them (Gutman and Alden 1985; Hummel and Savitt 1988; Mazursky and Jacoby 1985; Oliver 1981). This idea was supported by all three of our qualitative studies. For example, participants mentioned the ease of finding merchandise within the store ("I am familiar with the arrangement of merchandise, I know where to find it, it expedites the process"), and ease in moving through the aisles and racks of merchandise ("I like to be able to walk around between the racks without knocking things over").

Our second proposed dimension is *reliability*, which is similar to the SERVQUAL reliability dimension, except that it has two subdimensions and a couple of other variations. Our depth interviews revealed that customers view reliability as a combination of keeping promises ("if they tell me Thursday, then it better be there on Thursday") and "doing it right" ("I just like people to be efficient and prompt, you know, do what I need to be done and get me out of there"). This idea of subdimensions interestingly is supported by an examination of the items used in SERVQUAL to measure reliability. Some of the items refer to promises and others to doing the service right. Another variation in our reliability dimension, as compared to SERVQUAL, is that we view the availability of merchandise (Westbrook 1981) as a measure of the reliability dimension and incorporate it into our doing-it-right subdimension. Our depth interviews also revealed that customers value merchandise availability as reflecting the dependability of the store ("good service is stocking what I want"). A third variation is that although SERVQUAL views problem solving as part of reliability, we see it as a separate dimension. These variations also distinguish our reliability dimension from Guiry et al.'s (1992) procedural reliability.

The third dimension we propose is *personal interaction*. Although this sounds similar to Guiry et al.'s (1992) personal service dimension, we envision two subdimensions—service employees inspiring confidence and being courteous/helpful. We believe these subdimensions are very closely related and capture how the customer is treated by the employee. The rationale for this dimension is as follows. To begin, we noticed that the SERVQUAL dimensions of responsiveness and assurance appeared to be related and that some items from SERVQUAL's empathy dimension also seemed to overlap with this factor. This notion has support in the numerous studies that have tested SERVQUAL (Babakus and Boller 1991; Babakus and Mangold 1989; Carman 1990; Guiry et al. 1992; Pitt et al. 1992) as well as in a working paper by the authors of SERVQUAL (Parasuraman et al. 1994b). The second reason for suggesting one main dimension of personal interaction with two underlying subdimensions emerged from our qualitative research. Respondents in the phenomenological interviews consistently indicated the importance of

feeling confident about shopping at a particular store. Comments included, "I do not feel intimidated by anything at the store," "I feel very comfortable shopping at the store," and "I feel free to shop and look without feeling pressured." These comments evoke the assurance dimension of SERVQUAL, but it is not proposed as a separate dimension because the comments were interwoven with comments about courteousness/helpfulness, and both aspects (or subdimensions) appeared to be part of a larger whole, which we called the personal interaction dimension because all these comments relate to the personal interaction between the customer and the service employee in the store. Support for the courteousness/helpfulness subdimension came from all three qualitative studies. Participants in the depth interviews and customer tracking specifically mentioned helpfulness of store employees. Participants in the phenomenological interviews indicated the importance of this subdimension by comments such as, "people are friendly there," "I want to have access to someone that can help me," "the sales associates make me feel that they're there, if I need them," and "I want to be able to pick up the phone and have access to someone that can help me."

We introduce a new fourth dimension, *problem solving*, which addresses the handling of returns and exchanges as well as of complaints. Although this dimension would also involve interaction between the customer and the employee, it is specifically related to the handling of problems and therefore merits a separate dimension. Given that service recovery is being recognized as a critical part of good service (Hart, Heskett, and Sasser 1990; Kelley and Davis 1994), we expect that recognizing and resolving problems should emerge as a separate factor in customer evaluation. Westbrook (1981) found that customers were quite sensitive to how service providers attend to problems and complaints. Westbrook, along with Mazursky and Jacoby (1985), also mentions that the ease of returning and exchanging merchandise is very important to retail customers. Our own qualitative research supported these findings. Participants in the phenomenological interviews commented that this aspect was important to them ("I like stores that are very good at taking back returns" and "I like to bring something home and think about it and feel free to return it"). Participants in the depth interviews concurred ("I do not buy anything that I cannot return").

Our fifth dimension, *policy*, is again suggested both by the retail literature and our qualitative research. This dimension captures aspects of service quality that are directly influenced by store policy. When customers evaluate whether a store has convenient hours, for example, this is viewed as whether the store's policy is responsive to customers' needs. Westbrook (1981) and Mazursky and Jacoby (1985) report that an important criterion on which customers evaluate stores is the credit and charge account policies of the store. Customers also appear to value parking availability for retail shopping (Oliver 1981). These findings were supported in all three of our qualitative studies. Participants referred to the quality of merchandise ("I'm interested in the quality of clothes"), convenient parking ("I can get a fairly close parking spot"), credit card

usage ("I love having a credit card rather than writing a check, it's a very convenient tool for me").

To summarize, we propose a hierarchical factor structure for retail service quality with five basic dimensions, with overall service quality as a second-order factor, and with three of the five dimensions having two subdimensions (see Figure 1). Although this hierarchical structure can be divided into three models for the purpose of explication, the model with the five basic dimensions, the model with the second-order factor, and the model with the sub-dimensions are *not* separate models per se, but special cases of the generalized model shown in Figure 1. For example, the model with the five dimensions can be viewed as the most basic. The subdimensions model gets more specific in terms of three of the dimensions, whereas the second-order model captures the common variance among the dimensions in a meaningful way.

ITEM GENERATION AND SCALE DEVELOPMENT

Our proposed measure of retail service quality is a 28-item scale, consisting of 17 items from SERVQUAL and 11 items developed from the literature review and our qualitative research (see appendix). To generate items to measure our five main dimensions, we first scrutinized the 22 items in the SERVQUAL scale. Although we propose a different factor structure, we felt comfortable with using modified SERVQUAL items in our scale, because they are based on extensive qualitative research conducted by Parasuraman et al. (1988). Items that appropriately captured the essence of the factors were retained in our scale, whereas items that were deemed inappropriate in terms of wording/meaning were not included. (An initial test of the SERVQUAL items revealed that this latter set of items had high modification indices as well.)

A total of five items from SERVQUAL were dropped. The item "_____ will have the customer's best interests at heart" and the item "The employees of _____ understand the specific needs of their customers" were deemed to be inappropriate. Scrutiny of these items suggested that the phrases "best interests at heart" and "understand the specific needs" might be vague and confusing to respondents. Another item, "Employees at _____ are neat-appearing," was not included because the use of the words "neat appearing" is not part of everyday language and may mean different things to different people. The item "Employees in _____ are always willing to help customers," was not used after an examination of the wording revealed that the item was somewhat confounding, suggesting both personal interaction ("willing to help") and reliability ("always"). Finally, the item "_____ has employees who give customers personal attention" was not used, because we realized that another item, "_____ gives customers individual attention," essentially captured the same aspect of service quality.

The 17 items retained from SERVQUAL were assigned to the appropriate subdimension in our proposed hierarchical factor structure (see Figure 1 and appendix). Three

SERVQUAL items related to modern-looking equipment, physical facilities, and store materials (P1, P2, P3) were expected to be indicators of the appearance subdimension of the physical aspects dimension of retail service quality. The two items measuring customers' perceptions of how well the store fulfills its promises (P7, P8) were assigned to the promises subdimension of the reliability dimension. The two items relating to performing the service right the first time and error-free transactions (P9, P11) were used as indicators of the doing-it-right subdimension of the reliability dimension. Three assurance items from SERVQUAL regarding knowledge, confidence, and safety (P12, P13, P14) were assigned to the inspiring confidence subdimension of the personal interaction dimension. The fourth assurance item (P19) related to courteousness and was assigned to the courteous/helpful subdimension of the personal interaction dimension. Three responsiveness items from SERVQUAL related to prompt service, telling customers when services will be performed, and never being too busy to respond to customers' requests (P15, P16, P17) were also assigned to this subdimension, as was an empathy item on individual attention (P18). A reliability item from SERVQUAL measuring interest in solving customers' problems (P22) was predicted to load on the problem-solving dimension. Finally, the item related to convenient operating hours (P26) was expected to be an indicator of the policy dimension.

Based on the literature review as well as our own qualitative research, we developed 11 new items to measure retail service quality. An item was developed to measure the appearance of public areas (P4) as an additional indicator of the appearance subdimension of the physical aspects dimension. Two items related to store layout, which includes the ease of locating desired merchandise and the ease of moving around in the store (P5, P6), were added to the instrument to capture the convenience subdimension of the physical aspects dimension. An item on merchandise availability (P10) was added as an indicator of the doing-it-right subdimension of reliability. Given that customers expect the same level of courteous service on the telephone as they would in a face-to-face encounter, an item related to telephone courtesy (P20) was added as another indicator of the courteous/helpfulness subdimension of personal interaction. Two new items were developed for the problem-solving dimension. One measured customers' perceptions of how willingly retail stores handle returns and exchanges (P21), and the other measured customers' perceptions of the handling of complaints (P23). In addition to the earlier item on operating hours, four new items were developed for the policy dimension—an item on the quality of merchandise (P24), an item related to convenient parking (P25), and two items related to credit card policies (P27, P28).

Both perceptions and expectations items were developed to allow perceptions only, as well as disconfirmation type analysis. The perceptions items are presented in the appendix. Matching expectation items substitute "excellent retail stores" for "this store" in the perception items. For example, the expectation item to match P1 would read "Excellent retail stores will have modern-looking equip-

ment and fixtures." Only the perceptions data are analyzed and presented in this article to avoid psychometric problems with difference scores (Brown, Churchill, and Peter 1993; Cronin and Taylor 1992, 1994; Parasuraman, Zeithaml, and Berry 1994a; Teas 1993, 1994). However, the proposed factor structure *is* amenable to a disconfirmation approach, which could be used to determine gaps in service quality. As recommended by Parasuraman et al. (1991), the 7-point rating scale used in SERVQUAL was reduced to a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). To allow comparison to existing scales for the measurement of service quality (i.e., SERVQUAL), we collected data on all 22 SERVQUAL items, encompassing the five items that were not included in our measure of retail service quality.

DATA COLLECTION

Sample Selection and Size

A total of seven stores from two department store chains in the southeastern United States were involved in the study. These multiunit organizations operate stores located in similar trading areas with generally similar customer profiles. Senior management personnel of both organizations agreed to participate in the research. College students majoring in retailing, who were assigned to the stores as a requirement of their senior field experience, as well as regular store employees, administered the questionnaires. Detailed instructions and a supply of questionnaires were sent to each of the stores. A letter explaining the project was sent to each store manager, who had been apprised of it earlier by senior management. In addition, a follow-up telephone call to each store manager and each questionnaire administrator was conducted to answer any questions or concerns before data collection began. A sample of 227 respondents was obtained. The sample consisted of 197 women with a mean age of 43.03 and 27 men with a mean age of 40.85. (Three respondents chose not to provide demographic information.)

Procedure

The questionnaire was self-administered at the store location. The rationale for our data collection method is based on the theory that respondents will be more attentive to the task of completing a questionnaire and will provide more meaningful responses when they are contextualized in the environment that they are evaluating. Being in the natural environment (i.e., shopping setting) is preferable to sitting at the kitchen table at home amid distractions that take precedence over the task of completing the survey. Further, being in the relevant environment, shoppers would be more likely to focus on dimensions important to them for evaluating the quality of service at the store. The questionnaire was administered just prior to the respondents' shopping experience so that the responses reflect evaluations of previous shopping experiences at the store.

Interviewing just after a shopping experience may more closely reflect satisfaction rather than service quality (Rust and Oliver 1994).

Whereas some previous studies were administered to individuals who may or may not have ever shopped at the particular store, we collected evaluations of service quality for the specific store visited so that customers could give more meaningful responses. Further, store-specific responses are more actionable than "retail in general" responses. The data were collected during a 3-week period in the fall prior to the Christmas shopping season from the seven sample units. Every fifth adult customer entering the store was asked to complete the questionnaire provided that they had previously shopped at the store and were willing to complete the questionnaire as they entered the store. Customers who had not previously shopped at the store were excluded from the sample. Customers were sampled from morning, afternoon, and evening hours on weekdays and weekends. The questionnaires were self-administered by the respondents who were afforded a chair in a quiet area near the store entrance and a clipboard for their convenience while completing the questionnaires.

TEST OF PROPOSED FACTOR STRUCTURE OF RETAIL SERVICE QUALITY

The descriptive statistics (means and standard deviations) obtained for the items in the proposed Retail Service Quality Scale are presented in the appendix. Given that the respondents had shopped at the store before and had returned, it is not surprising that the mean values of perceptions regarding service quality items were toward the higher end of the scale. However, the standard deviations indicate that there was sufficient variation in the data.

Partial Disaggregation

To test the proposed Retail Service Quality Scale, we used confirmatory factor analysis with partial disaggregation (see Bagozzi and Heatherton 1994; Hull, Lehn, and Tedlie 1991; Marsh and Hocevar 1985). The traditional structural equations approach (or total disaggregation), which uses each item as a separate indicator of the relevant construct, provides the most detailed level of analysis for construct testing, but "in practice it can be unwieldy because of likely high levels of random error in typical items and the many parameters that must be estimated" (Bagozzi and Heatherton 1994, pp. 42-43). On the other hand, total aggregation of items within dimensions does not offer much advantage over traditional multivariate analysis, although it does provide fit indices. The partial disaggregation technique is seen as a compromise between these two extremes. It allows one to proceed with meaningful research by combining items into composites to reduce higher levels of random error and yet it retains all the advantages of structural equations, including accounting for measurement error, allowing for multiple, multidimensional variables, and testing for hierarchical factor structure.

FIGURE 2
Retail Service Quality: The Five Basic Dimensions
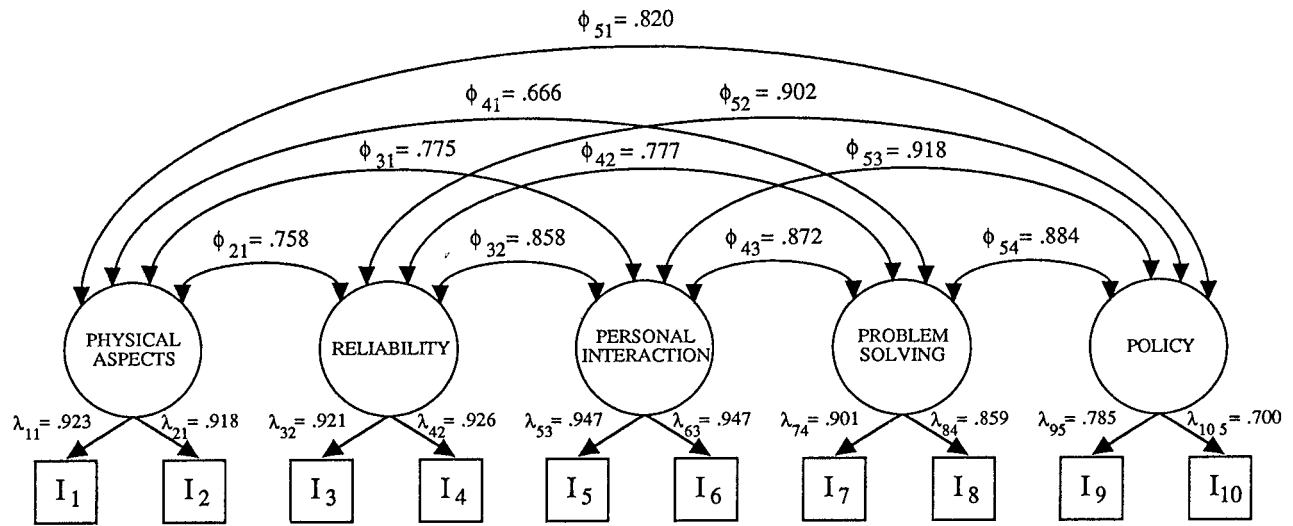
KEY: I_1 = P1 + P3 + P5
I_2 = P2 + P4 + P6
I_3 = P7 + P9
I_4 = P8 + P10 + P11
I_5 = P12 + P14 + P15 + P17 + P19

I_6 = P13 + P16 + P18 + P20
I_7 = P21 + P23
I_8 = P22
I_9 = P24 + P26 + P28
I_{10} = P25 + P27

Operationally, partial disaggregation is accomplished by randomly aggregating items that relate to a given construct so that there are two or three combined indicators instead of several single-item indicators. The rationale for *random* combination of items is that all items or indicators related to a latent variable should correspond in the same way to that latent variable; thus any combination of these items should yield the same model fit.

Test of Five Basic Dimensions

Although there are many instances of testing second-order factor models in the literature, we could not find an example of a third-order factor model. Nevertheless, despite the lack of a precedent for doing so, we tried to run a third-order factor model as shown in Figure 1, but this model was not implementable. We, therefore, decided to test the model in three stages—a test of the five basic dimensions, a test of the second-order factor, and a test of the subdimensions. These tests would reveal whether our proposed hierarchical structure was supported in part or whole.

The first step in assessing the hierarchical factor structure, as outlined above, was to test whether the five basic dimensions (see Figure 1) were well supported as descriptors of retail service quality. At this stage, we were not testing subdimensions. Hence, for example, all six indicators for physical aspects (see Figure 1) were treated as equivalent indicators of this dimension and were combined in a random manner to create two composite indicators for the construct (see Figure 2). Partial disaggregation of this model yielded an excellent fit (χ^2 = 48.92, df = 30, AGFI

= 0.92, CFI = 0.99, RMSR = .03),[1] as shown in Table 2. The factor loadings and covariances obtained from a test of the five basic dimensions are shown in Figure 2. By all indications, the model was well supported, leading us to conclude that our five basic dimensions appear to be well suited for measuring retail service quality.

### Test of Retail Service Quality as a Higher Order Factor

The next step was to determine if retail service quality may be viewed as a higher order factor to these dimensions. Using the same indicators for the dimensions as before, we modeled retail service quality as a second-order factor (see Figure 3). The first-order factors were allowed to correlate as before and the inclusion of the second-order factor resulted in lower correlations among first-order factors (not shown in Figure 3 to keep it from becoming cluttered). Partial disaggregation analysis of this model also found an excellent fit (χ^2 = 59.11, df = 30, AGFI = 0.90, CFI = 0.98, RMSR = .03), as shown in Table 2. The factor loadings and gamma values for the second-order model are shown in Figure 3. One lambda value for each dimension was set at 1.00, as is typical of second-order factor analysis. Also, an examination of the modification indices did not suggest any changes in the model. The results led us to conclude that the second-order factor structure for retail service quality is well supported. This suggests that customers evaluate retail service quality on the five basic dimensions but that they also view overall retail service quality as a higher order factor that captures a meaning common to all the dimensions.

TABLE 2
Summary Results of Confirmatory Factor Analysis for the
Proposed Factor Structure of Retail Service Quality

	χ^2	df	p	AGFI	CFI	RMSR
First study (n = 227)						
Model testing five basic dimensions of retail service quality as first-order factors	48.92	30	.02	0.92	0.99	.03
Model testing retail service quality as a second-order factor to the five basic dimensions	59.11	30	.01	0.90	0.98	.03
Model testing six subdimensions of retail service quality as first-order factors	88.71	45	.00	0.89	0.98	.03
Model testing six subdimensions of retail service quality with corresponding dimensions as second-order factors	107.20	45	.00	0.87	0.97	.03
Cross-validation study (n = 149)						
Model testing five basic dimensions of retail service quality as first-order factors	32.21	30	.36	0.93	1.00	.02
Model testing retail service quality as a second-order factor to the five basic dimensions	61.00	30	.01	0.86	0.98	.03
Model testing six subdimensions of retail service quality as first-order factors	81.03	45	.01	0.87	0.97	.04
Model testing six subdimensions of retail service quality with corresponding dimensions as second-order factors	76.11	45	.01	0.87	0.98	.04

FIGURE 3
Retail Service Quality: Service Quality as a Second-Order Factor to the Five Basic Dimensions
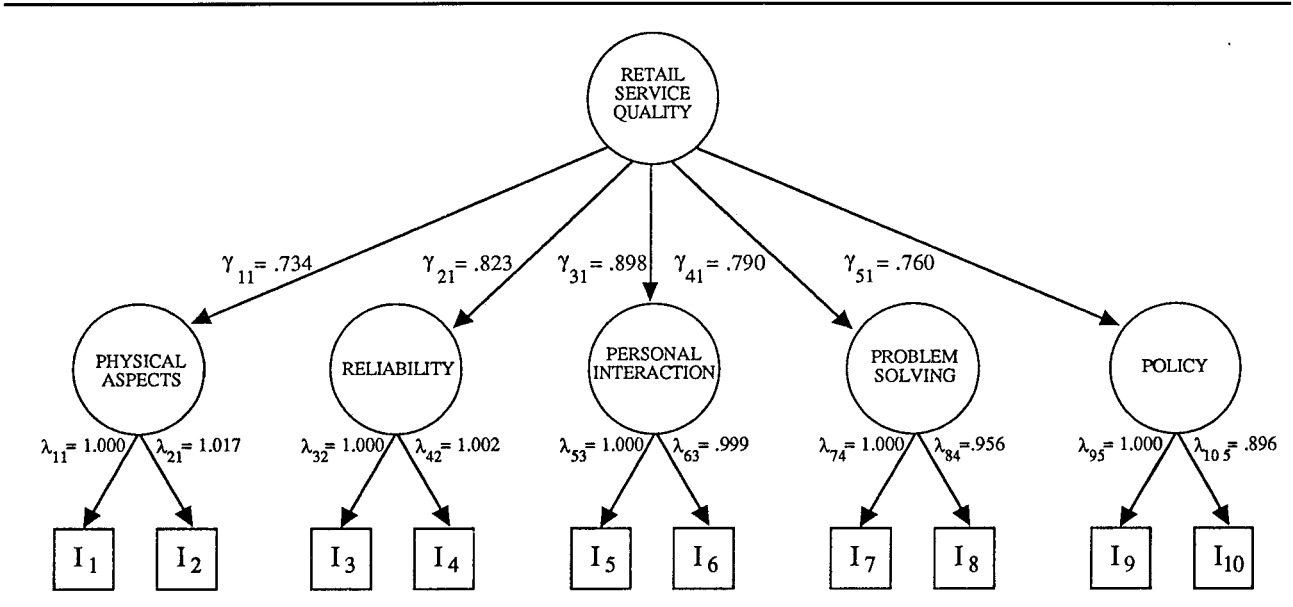
KEY: I_1 = P1 + P3 + P5
I_2 = P2 + P4 + P6
I_3 = P7 + P9
I_4 = P8 + P10 + P11
I_5 = P12 + P14 + P15 + P17 + P19

I_6 = P13 + P16 + P18 + P20
I_7 = P21 + P23
I_8 = P22
I_9 = P24 + P26 + P28
I_{10} = P25 + P27

Test of Six Subdimensions

The last test of the proposed hierarchical factor structure was the test for subdimensions. Three of the basic dimensions of our hierarchical structure for retail service quality had been proposed to have two subdimensions each (see Figure 1). Hence a model to test this structure viewed these three dimensions as second-order factors to the six subdimensions (see Figure 4). The indicators for each subdimension or first-order factor were randomly combined into two composite indicators. A partial disaggrega-

tion analysis of this model showed a good fit, both at the first-order level (χ^2 = 88.71, df = 45, AGFI = 0.89, CFI = 0.98, RMSR = .03), and at the second-order level (χ^2 = 107.20, df = 45, AGFI = 0.87, CFI = 0.97, RMSR = .03), as shown in Table 2. The factor loadings, covariances, and gamma values are indicated in Figure 4.

Thus all three levels of our proposed hierarchical structure are very strongly supported, suggesting that the full model of retail service quality (see Figure 1) is valid. What this means is that consumers evaluate retail service quality according to the proposed five basic dimensions, and in

FIGURE 4
Retail Service Quality: The Six Subdimensions
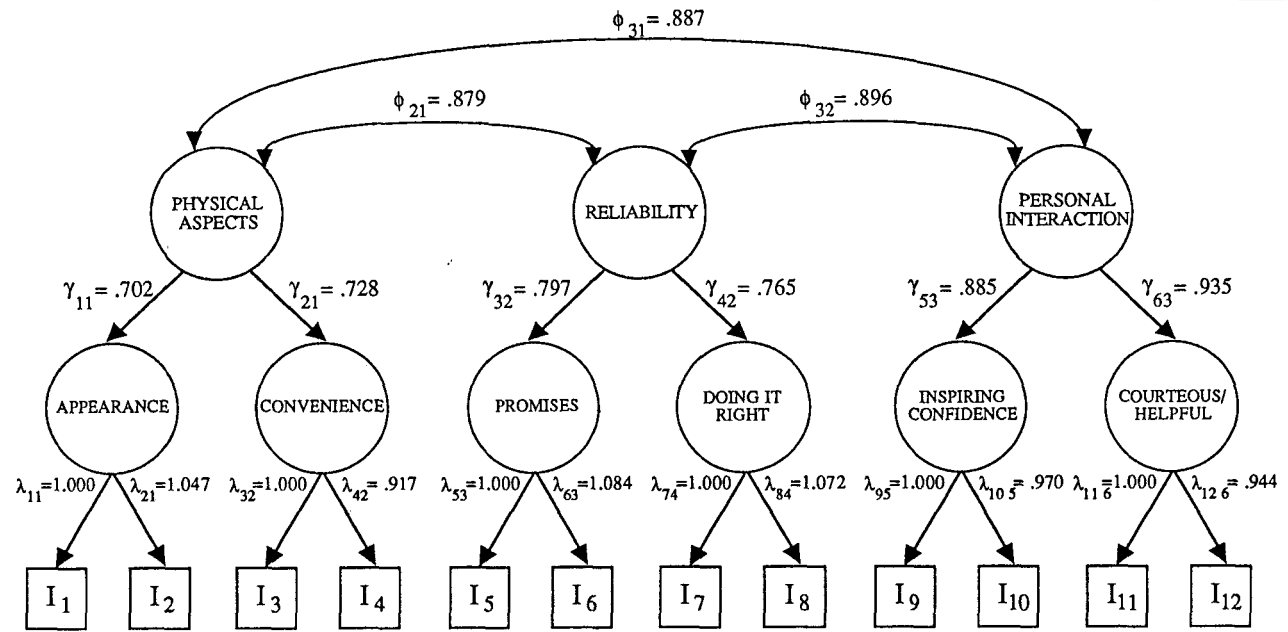
KEY: I_1 = P1 + P10
I_2 = P2 + P19
I_3 = P6
I_4 = P7
I_5 = P4
I_6 = P20

I_7 = P15
I_8 = P13+ P14
I_9 = P12 + P28
I_{10} = P27
I_{11} = P16 + P21 + P29
I_{12} = P22 + P31 + P32

addition, they view overall service quality as a higher order factor and that some of the basic dimensions have subdimensions associated with them in the consumer's mind.

CROSS-VALIDATION STUDY

Even though our proposed factorial structure has an excellent fit with the data, we recognize that the results could be specific to this particular sample. Therefore, a second study using the same instrument was conducted to validate our findings. The study was conducted during a 7-day period at two store units of one of the same organizations involved in the main study. A total of 149 completed questionnaires were collected. The procedure for the main study was duplicated in the cross-validation study with the exception of using student assistants to collect the data, rather than retail interns or store employees. The results of this study are also presented in Table 2. It is seen that the model testing the five basic dimensions had an excellent fit (χ^2 = 32.21, df = 30, AGFI = 0.93, CFI = 1.00, RMSR = .02),[2] thus providing cross-validation for the five basic dimensions. The second-order model also had an excellent fit (χ^2 = 61.00, df = 30, AGFI = 0.86, CFI = 0.98, RMSR = .03), thus cross-validating the existence of retail service quality as a higher order factor to the five dimensions. Finally, the model testing the six subdimensions also showed an excellent fit, both at the first-order level (χ^2 =

81.03, df = 45, AGFI = 0.87, CFI = 0.97, RMSR = .04), and at the second-order level (χ^2 = 76.11, df = 45, AGFI = 0.87, CFI = 0.98, RMSR = .04), thus providing cross-validation for the subdimensions. Thus the validation study also supported the entire hierarchical factor structure.

CONSTRUCT RELIABILITY AND VALIDITY OF THE RETAIL SERVICE QUALITY SCALE

Construct reliabilities were computed from confirmatory factor analyses conducted separately for each dimension and subdimension of the Retail Service Quality Scale that had four or more items, and these reliabilities ranged from 0.81 to 0.92 (see Table 3). Cronbach's alpha was computed for dimensions and subdimensions with fewer than four items, and the values for alpha ranged from 0.83 to 0.89 (see Table 3). The construct reliability of the overall scale computed from a confirmatory factor analysis conducted on all the items was 0.74 (see Table 3). The high construct reliabilities suggest that service quality analysis could be appropriately conducted at the dimension or subdimension level, as well as at the overall level.

Given that we have developed a new scale to measure the construct of retail service quality, it is appropriate to examine construct validity—specifically in terms of convergent, discriminant, and predictive validities. Convergent validity of the Retail Service Quality Scale cannot be

TABLE 3
Construct Reliability and Predictive Validity of
Retail Service Quality Scale

	Number of Items	Construct Reliability	Predictive Validity With Correlations	
			Intention to Shop	Intention to Recommend
Overall scale	28	0.74	0.65	0.70
Dimensions				
Physical aspects	6	0.85	0.55	0.64
Reliability	5	0.90	0.44	0.54
Personal interaction	9	0.90	0.58	0.59
Problem solving	3	0.87[a]	0.66	0.64
Policy	5	0.92	0.63	0.66
Subdimensions				
Appearance	4	0.81	0.45	0.53
Convenience	2	0.89[a]	0.50	0.62
Promises	2	0.83[a]	0.44	0.51
Doing it right	3	0.86[a]	0.39	0.51
Inspiring confidence	3	0.84[a]	0.66	0.63
Courteous/helpful	6	0.89	0.63	0.62

a. Cronbach's alpha (given that these dimensions/subdimensions had fewer than four items each and hence construct reliability from separate confirmatory factor analyses would not be meaningful).

ascertained in the typical sense of using different methods to test the construct because we only used one method. However, given that all the items loaded highly on the factors to which they were assigned is itself a test of convergent validity of the scale. A test of discriminant validity is especially important, given that some of the dimensions are highly correlated. One accepted test of discriminant validity is to determine whether the covariance and two standard errors add to less than 1.00. We used this procedure on all possible pairs of the five dimensions and found values ranging from 0.75 to 0.98. Thus all dimensions are statistically distinct even after correcting for measurement error and *do* have discriminant validity. In a practical sense, they *are* highly correlated, and in particular, the policy dimension is very highly correlated with the reliability and personal interaction dimensions. This could explain why there is so much common variance to make a higher order factor structure appropriate.

To determine the predictive validity of the retail scale, data had been collected on two dependent variables—intentions to shop at the store and intentions to recommend the store to others. Each variable was measured using two 7-point semantic differential scales with endpoints *likely/unlikely* and *possible/impossible* as well as a third 5-point intention scale with anchors *definitely would, probably would,* and so on, to *definitely would not shop/recommend.* Predictive validity was ascertained using correlations between the retail service quality scale (at the dimension, subdimension, or overall scale level) and these two dependent variables. The results are presented in Table 3 and show strong predictive validity for the Retail Service Quality Scale at the dimension, subdimension, or overall level.[3]

DISCUSSION

Our proposed measurement tool is suited for studying retail businesses that offer a mix of services and goods, such as department or specialty stores, to gather benchmark data regarding current levels of service quality as well as to conduct periodic "checks" to measure service improvement. The instrument could serve as a diagnostic tool that will allow retailers to determine service areas that are weak and in need of attention. One way to do this is by testing the three forms of the generalized hierarchical model. If retailers are greatly concerned about parsimony, they may use only the model with the five basic dimensions. However, given that no additional items are needed to run the model with subdimensions, retailers may appreciate the additional information on subdimensions obtained by further partitioning the variance. Finally, by proposing retail service quality as a second-order factor, retailers can capture the extent of common variance or the extent to which the basic dimensions represent overall service quality.

Another way to use the instrument as a diagnostic tool at different levels of analysis does not require the use of structural models. Service quality analysis can be performed at the overall level (using the full scale in an additive fashion), at the factor level (using items within a given dimension in an additive fashion), and at the subdimension level (using items within a given subdimension in an additive fashion). Analysis of data at these different levels would allow evaluations of overall quality and dimension quality and would permit managers to identify problem areas within their stores (at the dimension or subdimension level) to concentrate resources on improving particular aspects of service quality.

The hierarchical structure of the scale has implications for practitioners as well as academics. Practitioners are often interested in determining overall service quality as well as dimensions of service quality. Past studies have typically used single-item measures of overall service quality where it is possible that customers could focus on certain aspects of the services in their minds while responding to these questions. Consequently, these measures may not accurately reflect overall service quality. Although no researcher can claim to definitively capture customer perceptions of overall service quality, we believe that we come closer to capturing these overall evaluations because the second-order factor extracts the underlying commonality among dimensions. If the respondents have thoughtfully answered all the questions, then in addition to obtaining their evaluations of the dimensions, the second-order factor model captures the common variance among these dimensions, reflecting the respondents' overall assessment of service quality. Future academic research on scale development in a variety of contexts could investigate the appropriateness of hierarchical structures for scales. In addition to determining any common variance as explained, an investigation of subdimensions would allow researchers to further partition the variance in a meaningful way.

An obvious extension of this research is to conduct replication studies for other retailers who offer a mix of services and goods. In addition, the scale can be modified to measure service quality at a departmental level within the store if the retail manager wants to compare customer evaluations across departments. It can also be easily modified to compare evaluations of retail service quality for competing retailers. We see the scale as a generalized retail service quality scale that can be adapted to specific circumstances. For example, future research could explore whether an adaptation of this scale, de-emphasizing the personal interaction dimension, would be appropriate for self-service stores.

Continued refinement of the retail service quality scale proposed and supported in this study is certainly possible based on further qualitative research and changes in retailing trends. Such modifications could include the addition or deletion of items, or even a modification of the hierarchical factor structure if so indicated. Although we at-

tempted to cover all aspects of retail service quality by examining the retailing literature and by conducting a broad range of qualitative research, we recognize that there may be aspects of retail service quality that may have been omitted or that may become relevant as new trends in retailing evolve. In future research, customers may reveal new aspects of retail service quality that are important to them, and these would have to be incorporated in the scale to ensure a valid measure of retail service quality on an ongoing basis.

The development and testing of the Retail Service Quality Scale has implications for other service industries as well. Based on this study, as well as the other studies cited, it appears that a measure of service quality across industries is not feasible. Therefore, future research on service quality should involve the development of industry-specific measures of service quality following the triangulation of qualitative research procedures and the cross-validation technique used in this study.

APPENDIX
Factor Structure for the Retail Service Quality Scale

SERVQUAL Dimension	Retail Service Quality Dimension	Retail Service Quality Subdimension	Perception Item	Mean	SD
Tangibles	Physical aspects	Appearance	P1. This store has modern-looking equipment and fixtures.	4.19	1.01
Tangibles	Physical aspects	Appearance	P2. The physical facilities at this store are visually appealing.	4.39	0.85
Tangibles	Physical aspects	Appearance	P3. Materials associated with this store's service (such as shopping bags, catalogs, or statements) are visually appealing	4.37	0.85
(NI)	Physical aspects	Appearance	P4. This store has clean, attractive, and convenient public areas (restrooms, fitting rooms).	4.37	0.84
(NI)	Physical aspects	Convenience	P5. The store layout at this store makes it easy for customers to find what they need.	4.34	0.92
(NI)	Physical aspects	Convenience	P6. The store layout at this store makes it easy for customers to move around in the store.	4.39	0.92
Reliability	Reliability	Promises	P7. When this store promises to do something by a certain time, it will do so.	4.30	0.83
Reliability	Reliability	Promises	P8. This store provides its services at the time it promises to do so.	4.37	0.76
Reliability	Reliability	Doing it right	P9. This store performs the service right the first time.	4.30	0.83
(NI)	Reliability	Doing it right	P10. This store has merchandise available when the customers want it.	4.21	0.91
Reliability	Reliability	Doing it right	P11. This store insists on error-free sales transactions and records.	4.21	0.89
Assurance	Personal interaction	Inspiring confidence	P12. Employees in this store have the knowledge to answer customers' questions.	4.48	0.64
Assurance	Personal interaction	Inspiring confidence	P13. The behavior of employees in this store instill confidence in customers.	4.40	0.76
Assurance	Personal interaction	Inspiring confidence	P14. Customers feel safe in their transactions with this store.	4.54	0.72
Responsiveness	Personal interaction	Courteousness/ helpfulness	P15. Employees in this store give prompt service to customers.	4.48	0.74
Responsiveness	Personal interaction	Courteousness/ helpfulness	P16. Employees in this store tell customers exactly when services will be performed.	4.25	0.83
Responsiveness	Personal interaction	Courteousness/ helpfulness	P17. Employees in this store are never too busy to respond to customer's requests.	4.39	0.77
Empathy	Personal interaction	Courteousness/ helpfulness	P18. This store gives customers individual attention.	4.46	0.75
Assurance	Personal interaction	Courteousness/ helpfulness	P19. Employees in this store are consistently courteous with customers.	4.54	0.71
(NI)	Personal interaction	Courteousness/ helpfulness	P20. Employees of this store treat customers courteously on the telephone.	4.33	0.86

APPENDIX Continued

SERVQUAL Dimension	Retail Service Quality Dimension	Retail Service Quality Subdimension	Perception Item	Mean	SD
NI)	Problem solving	None	P21. This store willingly handles returns and exchanges.	4.54	0.73
Reliability	Problem solving	None	P22. When a customer has a problem, this store shows a sincere interest in solving it.	4.45	0.75
(NI)	Problem solving	None	P23. Employees of this store are able to handle customer complaints directly and immediately.	4.40	0.75
(NI)	Policy	None	P24. This store offers high quality merchandise.	4.40	0.94
(NI)	Policy	None	P25. This store provides plenty of convenient parking for customers.	4.60	0.67
Empathy	Policy	None	P26. This store has operating hours convenient to all their customers.	4.34	0.83
(NI)	Policy	None	P27. This store accepts most major credit cards.	4.58	0.72
(NI)	Policy	None	P28. This store offers its own credit card.	4.76	0.57

NOTE: The items are labeled P_i to denote perceptions. (NI) = Item is not included in SERVQUAL.

ACKNOWLEDGMENTS

NOTES

1. The same procedure was used on the five SERVQUAL dimensions (using the 22 original items) to provide a standard of comparison with our proposed scale. The model fit for SERVQUAL (χ^2 = 140.75, df = 30, AGFI = 0.76, CFI = 0.92, RMSR = .04) was found to be not as good. Although the CFI does indicate that this model is acceptable, our scale has a much better fit. Further, our scale has greater content validity for the retail context given the extensive qualitative research and review of the retail literature carried out to develop the relevant dimensions, whereas SERVQUAL is not specifically geared to retailing.

2. Again, a comparison with the five SERVQUAL dimensions was conducted and revealed that the fit using SERVQUAL was acceptable (χ^2 = 95.68, df = 30, AGFI = 0.80, CFI = 0.94, RMSR = .03), but not as good as the fit for our proposed scale.

3. We attempted to use structural equations to test predictive validity, but due to high multicollinearity among the five dimensions, we found only some of the dimensions to have a significant effect on the dependent variables. Yet the variance explained (R^2) was quite high—.55 for intention to recommend the store to others and .52 for intention to shop at the store in the future—thus suggesting high predictive validity. We conducted a test for multicollinearity using forward stepwise regression and confirmed that it was very high. Therefore, we decided to use correlations as an unbiased indicator of predictive validity.

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