銘傳大學九十學年度管理科學研究所博士班招生考試

第一節

管理科學文獻評論　試題

請詳細閱讀所附能文俊，逐次回答下列問題：
1．說明上文中之「研究簡題」為何？（本題佔 10 分）
2．上文之 Hypothesis 為何？就上文之 “Conceptual Framework” 說明上文之 Hypothesis 為何是有意義的？（本題佔 20 分）
3．依據上文之 Hypothesis 就明其所涉及的 Construct，Operational Definition，Variable 為何？（本題佔 20 分）
4．就上文中之研究方法，說明上文如何驗證每一個 Hypothesis？（本題佔 20 分）
5．說明上文被刊登的理由？（本題佔 10 分）
6．您如何依據上文進行後續研究，試指出其可能的方向？（本題佔 20 分）

Valarie A. Zethaml, Leonard L. Berry, & A. Parasuraman

The Behavioral Consequences of Service Quality

If service quality relates to retention of customers at the aggregate level, as other research has indicated, then evidence of its impact on customers' behavioral responses should be detectable. The authors offer a conceptual model of the impact of service quality on particular behaviors that signal whether customers remain with or defect from a company. Results from a multicompany empirical study examining relationships from the model concerning customers' behavioral intentions show strong evidence of their being influenced by service quality. The findings also reveal differences in the nature of the quality-intentions link across different dimendsions of behavioral intentions. The authors' discussion centers on ways the research approach of their study can be helpful to researchers and managers.

Delivering quality service is considered an essential strategy for success and survival in today's competitive environment (Dawkins and Reichheld 1990; Parasuraman. Zeithaml, and Berry 1985; Reichheld and Sasser 1990; Zeithaml, Parasuraman, and Berry 1990). During the 1980s, the primary emphasis of both academic and managerial effort focused on determing what service quality meant to customers and developing strategies to meet customer expectations (e.g., Parasuraman, Zeithaml, and Berry 1985, 1988). Since then, many organizations – including those whose primary offerings involve physical goods such as automobiles or computers – have instituted measurement and management approaches to improve their service. The serve-quality agenda has now shifted and reconfigured to include other issues. The issue of highest prioity today involves understanding the impact of service quality on profit and other financial outcomes of the organization (Greising 1994; Rust, Zahorik, and Keiningham 1995).

Executives of many companies in the 1980s were willing to trust their intuitive sense that better service would lead to improved financial success and thus commited resources to improved service prior to having documentation of the financial payoff. Some of these companies, such as Federal Express and Xerox, have been richly rewarded for their efforts (Germano 1992; Kearns and Nadler 1992). But executives in other companies have been reluctant to invest in service improvements without solid evidence of their financial soundness. And in the current era of downsizing and streamlining, interest in tools to ascertain and monitor the payoff from service investment is high.

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Research on the relationship between service quality and profits has begun to accumulate, and one thing is clear. The link between service quality and profit is neither straightforward nor simple (Greising 1994; Zathorik and Rust 1992). The intermediate links between service quality and profits have not been well understood. To delineate the complex relationship between these two variables, researchs and managers must investigate and understand many other relationships, each of which is an integral part of the composite. One such relationship – between service quality and behavioral intentions – is the primary focus of our present research. In the remainder of this introductory section, we provide a general overview of the extant knowledge about the link between service quality and profits. We then outline our specific objectives and how our study attempts to extend current knowledge.

Seminal studies using the PIMS (Profit Impact of Market Strategy) data set have uncovered significant associations among service quality, marketing variables, and profitability. Finding from these studies show that companies offering superior service achieve higher-than-normal market share growth (Buzzell and Gale 1987), that the mechanisms by which service quality influences profits include increased market share and premium prices (Phillips, Chang, and Buzzell 1983), and that bussinesses in the top quintile of relative service quality on average realize an 8% higher price than their competitors (Gale 1992). Evidence from companies large enough to have multiple outlets also suggest a positive quality – profitability relationship: The Hospital Corporation of America found a strong link between perceived quality of patient care and profitability across its many hospitals (Koska 1990); and the Ford Motor Company 1990).

Although the previous findings document the financial and strategic impact of service quality across firms or outlets, the evidence is often too general to answer the questions foremost in executives mind: if I invest in service quality, will it pay off for my company? How will service quality pay off? How much should we invest in service quality to receive the best return? In addressing such questions, researchers (Formell and Wernerfelt 1987, 1988: Rust and Zahorik 1993; Zahorik and Rust 1992)

distinguish between offensive effects (capturing new customers) and defednsive effects (retaining customers). Determining the offensive impact of service quality parallels the age-old search for the advertising-sales connection. Service quality's effects – similar to advertising, service quality is one of many variables- including pricing, advertising, efficiency, and image - that simultaneously influence profits. Furthermore, spending on service per se does not gurarantee result, because strategy and execution must both be considered.

On the other hand, evaluating the defensive impact of service quality through customer retention promises to help companies gauge the financial impact of service quality. The relationship between retention and profits recently has been estimated by a variety of researchers (e.g., Anderson and Sullivan 1990: Fomell and Wernerfelt 1987, 1988: Reichheld and Sasser 1990) and companies(e.g., IBM). If the relationship between service quality and retention can be similarly documented, the financial implications for a given company or even a given service initiative can be calibrated. Zahorlk and Rust (1992) distinguish among five tasks that must be completed to model the impact of service on the profits: (1)identifying the key service attributes to include in the model. (2)selecting the most important attributes. (3)modeling the link between programs and attitudes. (4)modeling behavioral response to service programs, and (5)modeling the impact of service programs on profits.

The research we describe involves the first four tasks that Zahorik and Rust(1992) propose and concentrates on the fourth, namely, modeling behavioral response to quality service. All four of these tasks are firmly in the domain of marketing and the first three have been studied extensively in the last decade(for a review, see Zahorik and Rust 1992). In contrast, the fourth attribute, the impact of service quality on behavioral response, has been the subject of only a few marketing studies to date(Boulding et al. 1993: Cronin and Taylor 1992)

The underlying premise of out article is that if service quality relates to retention of customers at the aggregate(i.e.. firm) level, as other research has suggested, then evidence of its impact on customers' behavioral intentions can be viewed as signals of retention or defection and are desirable to monitor. With that in mind, out objectives are four-fold:

1. To summarize existing evidence about the behavioral consequences of service quality at the individual customer level.
2. To offer a conceptual model of the impact of service quality on particular behaviors that signal whether customers remain with or defect from the company.
3. To report the results of an empirical study examing relationships between service quality and customers' behavioral intentions.
4. To suggest a research agenda whereby information about individual-level behavioral consequences of service quality can be monitored and linked to sales and customer-retention data to provide ongoing evidence of the financial impact of service quality.

In addressing these objectives, we provide a concise synthesis of the extant literature on the subject and extend the literature in three significant ways. First, our study involves comprehensive(multicompany/ multi-industry) examination of service quality's impact at the individual-consumer level rather than at the company/ industry level, as is the case in most previous studies. Second, in addition to examining the general relationship between service quality and behavioral intentions, we explore changes in the strength of this relationship that are due to potential moderating effects of different evels of service relative to customers' expectation levels. Third, we incorporate a more extensive multiple-item behavioral-intentions measure, than has been used in

previous research and examine service quality's impact on specific types of behavioral intentions.

Conceptual Framework and Hypotheses

Background

Lowering customer defection rates can be profitable to companies. In fact, research has shown that it is a more profitable strategy than gaining market share or reducing costs.[1] For example, in an empirical study linking customer satisfaction to profits. Fomell and Werner(1987, 1988) examine the impact of complaint-handing programs on customer retention and conclude that marketing resources are better spenk keeping existing customers than attracting new ones. In support of this position. Reichheld and Sasser (1990, p.105) assert that customer defections have a stronger impact on a company's profits than "scale, market share, unit costs, and many other factors usually associated with competitive advantage." For this reason, they extol the benefits of zero customer defections as an overall company performance standard:

> Ultimately, defections should be a key performance measure for senior management and a fundamental component of incentive systems. Managers should know the company's defection rate, what happens to profits when the rate moves up or down, and why defections occur(p.111).

Research and company efforts to quantify the financial impact of defection and retention have intensified in recent years.

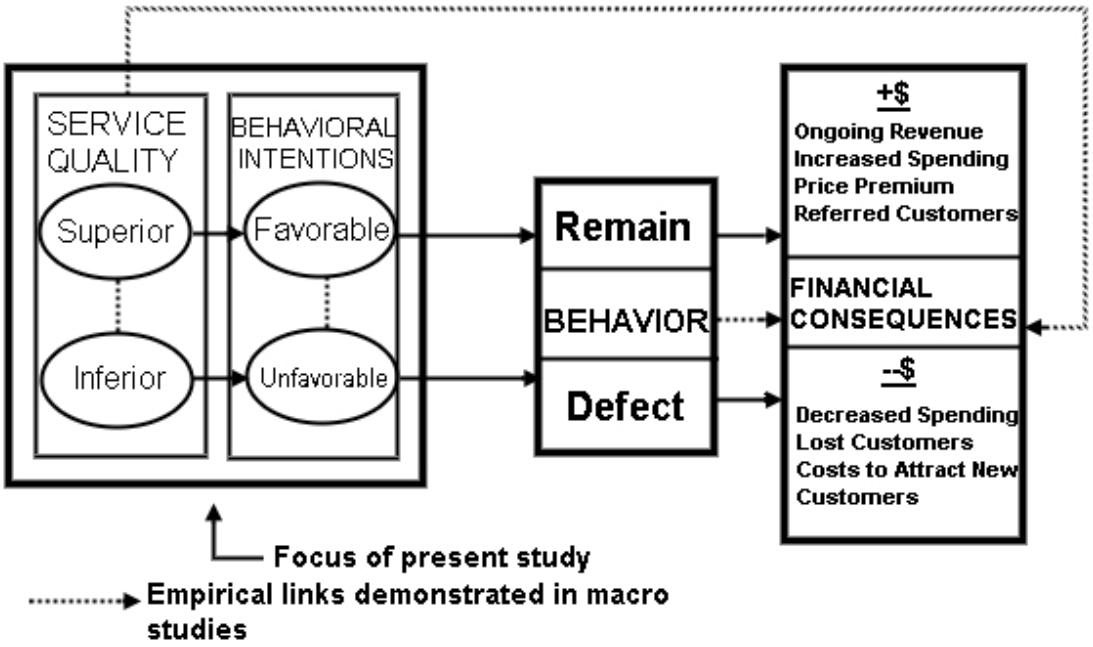
[1] This is not say that companies should focus on customer retention to the exclusion of strategies to attract new customers. For instance, share-building srtategies should be a high priority for companies that are new entrants or operate in emerging markets. However, for companies with an established customer base (especially in mature markets with entrenched competitors) the net return on investments could be much higher for retention strategies than for strategies to attract new customers.

Financial impact of defection. When customers are lost, new ones must be attracted to replace them, and replacement comes at a high cost. Capturing new customers is expensive for it involves advertising, promotion, and sales costs, as well as start-up operating expenses. New customers are often unprofitable for a period of time after acquisition: In the insurance industry, for example, the insurer typically does not recover selling costs until the third or fourth year of the relationship. Capturing customers from other companies is also an expensive proposition: Anderson and Sulivan (1990) find that a greater degree of service improvement is necessary to make a customer switch from a competitor than to retain a current customer.

Financial impact of retention. The longevity of a customer's relationship favorably influences profitability. Customers who remain with a firm for a period of years because they are pleased with the service are more likely than shorterm customers to buy additional service and spread favorable word-of-mouth communication. The firm also may be able to charge higher price than other companies charge, because these customers value maintaining the relationship. The initial costs of attracting and establishing these customers have already been absorbed and, due to experiencecurve effects, they often can be served more efficiently (Reichheld and Sasser 1990) supports this view, contending that profit on credit card service purchased by a ten-year customer is on average three times greater than for a five-year customer.

Although the financial impacts of defection and retention have been studies at a macro level(i.e., individual-level) processes through which these impacts occur have not been well understood. To attempt to fill this void, we develop and test a conceptual model focusing on individual-level behavioral consequences of service quality.

FIGURE 1
The Behaviorsl and Financial Consequces of Service Quality



A Model of the Behavioral Consequences of Service Quality

Figure 1 is a conceptual model that depics the behavioral consequences of service quality as intervering variables between service quality and the financial gains or losses from retention or defection. The left portion of the model is at the level of the individual customer and proposes that service quality and behavioral intentions are related and, thus, that service quality is a determinant of whether a customer ultimately remains with or defects from a company.

Starting on the loft, the model begins with a customer's assessment of service quality and posits that when service quality assessments are high, the customer's behavioral intentions are unfavorable and the relationship is more likely to be weakened. Behavioral intentions can be viewed as indicators that signal whether customers will remain with or defect from the company.

Some of the links in Figure 1 (shown by botted arrows) have been demonstrated empirically in several aggregate-level studies using overall multicompany analysis (e.g., Buzzell and Gale 1987; Gale 1992; Reichheld and Sasser 1990). However, the mediating roles of behavioral intentions and actual behavior on the relationship between service quality and financial performance are not well understood, especially at the individual-customer level. We attempt to add to our knowledge in this regard by undertaking an in-depth conceptual and empirical examination of the first link in the sequence of effects posited in Figure 1. As we discuss in subsequent sections, multiple measures of service quality and behavioral intentions were operationalized and used in surveys of customers from four different companies. For each of exposition in this section, the dependent construct is split broadly into favorable and unfavorable behavioral intentions.

Favorable behavioral intentions. Certain behaviors signal that customers are forging bonds with a company. When customers praise the firm, express preference for the company over others, increase

the volume of their purchases, or agreeably pay a price premium, they are indicating behaviorally that they are bonding with the company. Recent research offers some evidence that customer satisfaction and/or service-quality perceptions positively affect intentions to behavior in these ways. However, most of the research operationalizes behavioral intentions in a unidimensional way rather than delineate specific types of behavior. For example, Cronin and Taylor (1992), using a single-item purchase-intention scale, find a postive corrrlation with service quality and customer satisfaction. Anderson and Sullivan (1990), in analyzing data from a study of customer satisfaction among Swedish consumers, find that stated repurchase intention is strongly related to stated satisfaction across product categories. A study conducted by Woodside, Frey, and Daly (1989) uncovers a significant association between overall patient satisfaction and intent to choose the hospital again.

Several studies have examined the association between service quality and more specific behavioral intentions. In previous studies (see Parasuraman, Berry, and Zeithaml 1991a; Parasuraman, Zeithaml, and Berry 1998), we find a positive and significant relationship between customers' perceptions of service quality and their willingness to recommend the company. Boulding and colleagues(1993), in one of two studies they conducted, find a positive correlation between service quality and 2-item measure of repurchase intentions and willingness to recommend. In a second study involving university students, they find strong links between service quality and behavioral intentions that are of srtategic importance to the school, including saying positive things about the school, planning to contribute money to the class pledge on graduation, and planning to recommend the school to employes as a place from which to recruit.

Individual companies are also monitoring the impact of service quality on selected behavioral intentions. For example, Northwest Airlines found that the *preference index*(i.e., the preference for Northwest Airlines as the airline passengers like to fly) increased substantially in 1992, compared to 1991, following a major company effort to improve service. As measured in random surveys, preference rose in Minneapolis (from 70% to 75%), Detroit (from 49% to 59%), and Memphis (from 48% to 63%) (*Executive Report on Customer Satisfaction 1992*). Toyota found that intent to repurchase a Toyota automobile increased from a base of 37% to 45% with a positive sales experience, and form 37% to 91% with both positive sales and service experiences(McLaughlim 1993).

By integrating research fingings and anecdotal evidence, a list of specific indicators of favorable behavioral intentions can be compiled. These include saying positive things about the company or service to others (Boulding et al. 1993), recommending the company or service to others (Parasuraman, Berry, and Zeithaml 1991a; Parasuramen, Zeithaml, and Berry 1998; Reichheld and Sasser 1990), paying a price premium to the company, and remaining loyal to the company (LaBarbera and Mazursky 1983; Newman and Werbel 1973; Rust and Zahorik 1993). Loyality may be manifested in multiple ways; for example, by continuing to purchase from it, or by increasing business with it in the future.

Unfavorable behavioral intentions. Customers perceiving service performance to be inferior are likely to exhibit behaviors signaling they are poised to leave the company or spend less with the company. These behaviors include complaining, which is viewed by many researchers as a combination of negative responses that stem from dissatisfaction and predict or accompany defection (Richins 1983; Scaglione 1988).

Complaining behavior itself is conceptualized as multifaceted. According to Singh (1988), disstaisfaction leads to consumer-complaining behavior (CCB) that is manifested in *voice responses* (such as seeking redress from the seller), *private responses* (negative word-of-mouth communication), or *third-party responses* (taking legal action). His three-dimensional typology of complaining behavior, founded on the object of the complaints (seller, friend, third party), is statistically superior to previous models of CCB. Maute and Forrester(1993) find strong support for a three-way classification of dissatisfaction responses based on Hirshman's (1970) exit, voice, and loyalty responses (loyalty being the decision to remain with the company despite dissatisfaction). Solnick and Hemenway(1992) observe that though voice and exit (in their view the two main behavioral manifestations of dissatisfaction) can be substitutes for each other, they often occur thgether. In the context of a health manifestations organization, they find that complaining customers were four and one-half times more likely to leave the plan voluntarily than noncomplaining customers.

Specific indicators of unfavorable behavioral intentions suggested by the preceding discussion include different types of complaining (e.g., complaining to friends or external agencies) and contemplation fo switching to competitors. Another indicator of eventual defection is a decrease in the amount of business a customer does with a company.

Differential impact of service-quality levels. Although superior service is likely to foster favorable behaviors and reduce the likelihood of unfavorable behaviors, an important unresolved issue is the service-quality level that companies must target to have the desired impact on behaviors. How much service quality is enough to retain customers? Is there a level of service beyond which there are diminishing returns in terms of strengthening behavioral intentions? Does the degree of association between service quality and behavioral intentions change at different quality levels?

Little published evidence directly addresses these questions. However, a study by Gale(1992), which quantitatively asseses the relationship between level of service quality and willingness to purchase at AT&T, offers some indirect insight. Of AT&T's customers who rated the company's overall quality as excellent, over 90% expressed willingness to purchase from AT&T again. For customers rating the service as good, fair, or poor, the percentages decreased to 60%, 17%, and 0%, respectively. According to these data, willingness to repurchase increased at a steeper rate(i.e., by 43%) as the service-quality rating improved from fair to good than when it went from poor to fair (17%) or from good to excellent (30%). These results suggest that the impact of service quality on willingness to repurchase is most pronounced in some intermediate level of service quality.

Coyne(1989, p.73), however, makes the opposite prediction on the basis of research relating to the impact of customer safisfaction with service in a consumer-durable context:

> There appear to be thresholds of service for a affecting customer behavior…. When satisfaction rose above a certain threshold, repurchase loyalty climbed rapidly. However, between these thresholds, loyalty was relatively flat. I believe this twin threshold framework applies to a wide variety of service situations.

A similar categorization of service levels follows one definition of service quality in the literature – the exent to which a service meets or exceeds customer expectations (Parasuraman, Zeithaml, and Berry 1985, 1988) – and from recent research expectations (Zeithaml, Berry, and Parasuraman 1993). The first level is *desired service,* which is the level of service the customer hopes to receive, consisting of a blend of what the customer believes can and should be delivered. The second, lower level of expectations is *adequate service,* which is the level of service the customer will accept. Adequate

service is the minimum service a company can provide and still hope to meet customers' basic needs. A zone of tolerance, bounded on the lower end by adequate service and on the upper end by desired service, captures the range of service within which a company is meeting customer expectations.

Although the zone-of-tolerance framework seems structurally similar to Coyne's (1989) twin-threshold framework, the managerial implications of the two frameworks are different. Coyne, invoking the flat satisfaction-loyalty relationship he hypothesizes between the two thresholds, suggests that unless a company already has a strong reputation for service, it may not benefit by improving service much beyond the lower threshold: "If a company is already above the minimum acceptable threshold, but nearer the lower end of the service satisfaction band, investments to incrementally change position may not be warranted"(p.75). In contrast, we have argued previously (see parasuraman, Berry, and Zeithaml 1991b, p.47) that firms operating within the zone of tolerance, while possibly enjoying competitive advantage, should continue to improve service, even to the point of exceeding the desired service level: "To develop a true customer franchise – *unwavering* customer loyalty – firms must exceed not only the adequate service level but also the desired service level. "Although we do not refer to the slope of the service performance – loyalty relationship, our prior recommendation implies an upward-sloping (rather than flat) relationship within the zone of tolerance.

Available evidence suggests that the sensitivity of behavioral intentions to changes in service quality is likely to vary from below to within to above the zone of tolerance, though there is no comsensus about the nature of this variation across the three regions of quality. A key empirical question is whether the relationship between behavioral intentions and service quality is flat or upward sloping within the zone of tolerance and, if it is upward sloping, whether or not it is steeper than the relationship below and above the zone.

The discussion in the preceding sections implies that, though service quality is positively associated with favorable behavioral intentions, customers' perceptions of the service relative to their adequate and desired service levels moderate these associations. More formally, we posit.

H_1: The service quality – behavioral intentions relationship (a)is positive (negative) for favorable (unfavorable) behavioral intentions and (b) has a different slope below and above the zone of tolerance relative to within it.

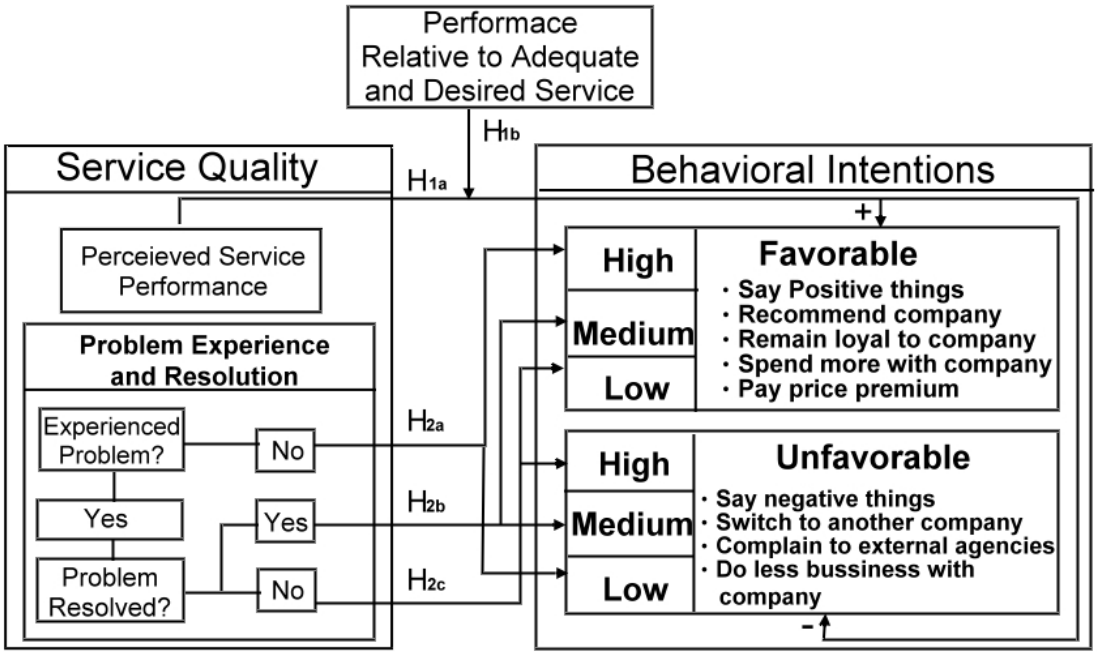
Impact of problem experuemce and resolution. Another aspect of service provision that can influence behavioral intentions involves the problem experience of customers. When customers encounter service problems, these experiences are likely to affect behavioral intentions adversely. However, the impact of problem resolution on customers' intentions is less clear. One view, based primarily on anecdotla evidence, is that superior problem occurred. For example, J.W. Marriott, chief executive officer of the Marriott hotel chain, states: "Sometimes those [disgruntled] customers whom you make that extra effort to gain back become the most loyal customers that you have" (Lovelock 1994, p.214). The reasoning underlying this view seems to be that a service problem gives a company the opportunity to demonstrate its commitment to customer service through excellent recovery efforts: On the other hand, empirical evidence suggests that service failures may weaken the customer-company bond even when the problem is resolved satisfactorily (Bolton and Drew 1992). We report (see Zeithaml, Parasurame, and Berry 1990) that customers who experienced no recent service problem with a company have significantly better service-quality perceptions than customers who experienced a recent service problem that was satisfactorily resolved. A plausible explanation for this

finding is that satisfactory problem-resolution service, though perhaps pleasing to customers, does not cause them to forget the service failure. And the memory of the failed service negatively affects exising empirical evidence on this question leads to our second hypothesis:

H_2:Favorable (unfavorable) behavioral intentions are (a) highest (lowest) for customers experiencing no service problem; (b) next highest(lowest) for customers experiencing service problems that are resolved, and (c) lowest (highest) for customers experiencing service problems that are not resolbed.

In summary, the first hypothesis suggests a positive (negative) relationship between service quality and favorable (unfavorable) behavioral intentions, the strength of which is different below and above the zone of tolerance relative to that within it. H_1, along with H_2, is depicted in Figure 2, which details the portion of the behavioral consequences model on which we focus in the present study.

FIGURE 2
Hypothesized Effects of Service Quality on Behavioral Intentions



Methodology

Sample Design and Mail Survey

Four companies that provide services to end or busioness customers were sponsors fo the research study. Questionnaires were mailed to business customers of a computer manufacturer, as well as to end customers of a retail chain, automobile insurer, and life insurer. The sponsoring companies generated mailing lists from their current customer bases. The retail chain, automobile insurer, and life insurer each provided random samples of 2400 customers. The computer manufacturer provided a larger random sample of 5270 customers, because it wanted to conduct its own detailed, segment-by-segment analysis following the completion of the main study. A total of 12,470 questionnaires were mailed.

Surveys were mailed with a cover letter and postagepaid return envelope to all customers in the sample. The cover letter appeared on company letterhead and was signed by a senior company official. Respondents were requested to return completed questionnaires to a marketing reaearch company hired to assist with data collection and coding .A reminder postcard was sent two weeks after mailing the questionnaires.

Overall response rate was 25% (3069 questionnaires). Company-specific response rates were 30%

(1566 questionnaires) for the computer manfacturer, 22%(522 questionnaires) for the retail chain; 24% (568 questionnaires) for the automobile insurer, and 17% (413 questionnaires) for the life insurer. Demographic profiles of the respondent samples were reviewed by managers in the respective companies and considered to be representative of their customer bases.

Survey Instrument

Operationalizaiton of service quality. Several measures of service quality were included in the questionnaire: (1) an overall, single-item rating scale with anchors at 1(extremely poor) and 9 (extremely good); (2) a multiple-item scale of perceived service from an expanded version of the SERVQUAL scale we originally developed (see Parasuraman, Zeithaml, and Berry 1998) and later refined (see Parasuraman, Berry, and Zeithaml 1991a); and (3) two cagegorical questions to measure whether respondents had experienced a recent service problem with the company and, if so, whether the problem was resolved to their satisfaction.

The second measure(i.e., the revised SERVQUAL battery) represented the service dimensions of reliability (five items), responsiveness (three items), assurance (four items), empathy (four items), and tangibles(five items). Consistent with the expanded conceptualization of customers' service expectations (Zeithaml, Berry, and Parasuraman 1993), respondents were asked to indicate their adequate – and desired-service levels in addition to their perceptions of each SERVQUAL item. Thus, separate ratings of adequate, desired, and perceived service were abtained on three 9-point scales (1=low, 9=high) arranged as three adjacent columns next to the SERVQUAL battery on the questionnaire[2].

The questionnaire containing the SERVQUAL battery with the three columns of ratings used in this study was one of three different questionnaire formats evaluated in a larger methodological study (Parasuraman, Zeithaml, and Berry 1994a). As such, the adequate-, desired-, and perceived-service scores used in the present study were based on a partial sample from each company (the other two questionnaire formats did not produce separate scores for these variables). A total of 1009 questionnaires contained scores for the adequate-, desired-, and perceived-service variables: 498 from the computer manufactuer, 188 from the retail chain, 191 from the automobile insurer, and 132 from the life insurer. All three questionnaire formats contained measures for the remaining study variables (overall service quality, behavioral intentions, and incidence of service-problem experience and satisfactory problem resolution). Therefore, scores for these variables were based on the full sample.

Operationalization of behavioral intentions. Previous research has not captured the full range of potential behaviors likely to be triggered by service quality. Cronin and Taylor (1992) focus solely on purchase intention and measure the construct with a single-item scale. In the first of two behavioral intentions measured. In the second study, involving service quality of an educational institution, they used a 6-item scale comprised largely of education-specific items, such as intent to contribute money to the class pledge and intent to recommend the school to employers as a place to recuit.

A 13-item battery was developed to gauge a wider range of behavioral intentions than have been suggested in the literature or by anecdotal evidence from companies.[3] This battery included items to capture several facets of behavioral intentions not incorporated in previous service-quality studies: likelihood of paying a price premium and remaining loyal to a company even when its prices go up, intent to do more business with the firm in the future, and complaint intentions when service problems

occur. The 13 items were grouped into four a prior categories: word-of-mouth communications, purchase intentions, price sensitivity, and complaining behavior. (These groupings were not made known to respondents.) The last two categories contained items not included in prior service-quality research. Each item was accompanied by a 7-point likelihood scale (1 = not at all likely, and 7 = extremely likely).

[2]The adequate- and desired-level service ratings were used in defining the lower and upper boundaries of the zone of tolerance to verify the differential slopes predicted by H_{1b} for the quality-intentions relationship.

[3]A copy of the instrument containing the behavioral-intentions and service-quality questions can be obtained from the third author.

Analyses, Results, and Discussion

Dimensions of Behavioral Intentions

Factor analysis of the behavioral-intentions battery was conducted to examine the dimensionality of the item. Because the battery was designed to represent four categories of behavioral intentions, a four-factor solution was obtained separately for each company and subjected to oblique rotation to allow for potential correlation among the categories. The item clusters implied by the factor loadings differen from the a priori clusters and varied somewhat across the four companies. The general pattems of loadings suggested that a five-factor solution may help reconcile these differences. A five-factor solution produced an unambiguous factor pattern that was consistent across all companies. This consistent pattern suggested a reconfiguration of the 13 items into five dimensions: *loyalty to company* (loyalty), *propensity to switch* (switch), *willingness to pay mor e*(pay more), *external response to problem*(internal response). In Table 1, we present the reconfigured behavioral-intentions bettery, and in Table 2, we present the factor-loading matrices supporting it, along with reliability coefficients for its multiple-item components.

Of the five factors, loyalty (with five items) and pay more(eith teo items) exhibit consistent patterns of loadings across the four companies. Switch (with two items) and external response(eith three items) also display a moderate to high degree of uniformity in factor loadings. The final dimension, internal response, contains just one item that loads on the fifth factor.

The 5-item loyalty scale has excellent internal consistency, which is evidenced by alphas ranging from .93 to .94 across the four companies. The 3-item external-response scale has alphas of at least .6, with the values in two of the four companies exceeding the threshold of .7 that Nunnally (1978) suggested. The 2-item scales measuring switch and pay more have somewhat weaker alphas, with several values falling below .6, perhaps because of too few items in the reconfigured factors. In general, the alpha score for loyalty is high, particularly for an early study. The alpha scores for the other three factors with multiple items range from adequate to weak, indicating the need to add items to the scale in further research.

Although the factor structure of the behavioral-intentions battery differs somewhat from the a priori specification, the loadings support the dichotomy in behavioral intentions of favorable and unfavorable categories. The largest factor, loyalty, contains five favorable behavioral-intentions items: saying positibe things about the company, recommending the company to somenoe who seeks advice, encouraging friends and relatives to do business with the company, considering the company the first

choice from which to buy services, and doing more business with the company in the next few years. Pay more contains two favorable items: continuing to do business with the company even if its prices increase somewhat and paying a higher price than competitors charge for the benefits currently received from the company.

The second and fourth factors comprise all unfavorable behavioral-intentions items. Switch contains two of these: doing less business with the company in the next few years and taking some business to a competitor that offers better prices. External response includes items that relate to experiencing a service problem: switching to a competitor, complaining to other customers, and complaining to external agencies such as the Better Business Bureau.

The interpretation of internal response, the fifth factor with one item (complaining to the company's employees if a service problem is experienced), is unclear. Customers more favorably disposed toward a company may be more likely to complain internally to give the company a "second chance." Conversely, disgruntled customers with an unfavorable image of the company may be more likely to complain internally to vent their frustrations. The equivocal interpretation of this factor and its being represented by just one item undermine its meaningfulness on conceptual and psychometric grounds. As such, we delected this single-item measure from all subsequent analyses.

TABLE 1
Behavioral-Intentions Battery[a]

Behavioral-Intentions Dimension	**Item Label**	**Item Wording**
Loyalty	|1	Say positive things about XYZ to other people.
	|2	Recommend XYZ to someone who seeks your advice.
	|3	Encourage friends and relatives to do business with XYZ.
	|4	Consider XYZ your first choice to buy – services.
	|5	Do more business with XYZ in the next few years.
Switch	|6	Do less business with XYZ in the next few years (-).
Pay More	|7	Take some of your business to a competitor that offer prices(-).
	|8	Continue to do business with XYZ if its prices increase somewhat.
	|9	Pay a highter price than competitors charge for the benefits you currently receive from XYZ.
External Response	|10	Switch to a competitor if you experience a problem with XYZ's service.
	|11	Complain to other customer if you experience a problem with XYZ's service.
	|12	Complain to external agencies, such as the Better Business Bureau, if you experience a problem with XYZ's service.
Internal Response	|13	Complain to XYZ's employees if you experience a problem with XYZ's service.

[a]The items were grouped as follows in the a priori categorization of the battery: Word-of-Mouth Communications - |1, |2, |3; Purchase Intentions- |4, |5, |6; Price Sensitivity - |7, |8, |9; Complaining Behavior - |10, |11, |12, |13. Each item was accompanied by a 7-point likelihood scale(1 = not at all likely and 7 = extremely likely). Items identified with a "-" were revarse scored.

TABLE 2
Factor Loading Matrices and Reliability Coefficients (Alphas) for Behavioral-Intentions Dimensions[a]

	Computer Manufacturer					Retail Chain					Automobile Insurer					Life Insurer					Combined Sample				
B-I Items[b]	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5
Loyalty [α]	[.93]				[.94]				[.94]					[.93]					[.94]						
I1	93	—	—	—	—	94	—	—	—	—	91	—	—	—	—	97	—	—	—	—	96	—	—	—	—
I2	97	—	—	—	—	94	—	—	—	—	94	—	—	—	—	95	—	—	—	—	95	—	—	—	—
I3	93	—	—	—	—	93	—	—	—	—	95	—	—	—	—	94	—	—	—	—	94	—	—	—	—
I4	65	—	—	—	—	79	—	—	—	—	87	—	—	—	—	87	—	—	—	—	79	—	—	—	—
I5	63	—	—	—	—	83	—	—	—	—	78	—	—	—	—	62	—	—	32	—	73	—	—	—	—
Switch [α]		[.67]					[.53]					[.63]					[.49]					[.61]			
I6	—	71	—	—	—	—	73	—	—	—	—	90	—	—	—	—	95	—	—	—	—	72	—	—	—
I7	—	83	—	—	—	—	85	—	—	—	—	74	—	—	—	—	—	—	70	—	—	83	—	—	—
Pay More [α]			[.73]					[.60]					[.68]					[.52]					[.69]		
I8	—	—	79	—	—	—	—	75	—	—	—	—	77	—	—	—	—	70	—	—	—	—	75	—	—
I9	—	—	88	—	—	—	—	.89	—	—	—	—	94	—	—	—	—	93	—	—	—	—	92	—	—
External Response [α]				[.60]					[.67]					[.76]					[.77]					[.70]	
I10	—	—	—	66	—	—	—	—	88	—	—	—	—	83	—	—	—	—	82	—	—	—	—	74	—
I11	—	—	—	71	—	—	—	—	82	—	—	—	—	81	—	—	—	—	76	—	—	—	—	78	—
I12	—	—	—	84	—	—	—	—	33	60	—	—	—	76	—	—	—	—	61	45	—	—	—	79	—
Internal Response [α]					[—]					[—]					[—]					[—]					[—]
I13	—	—	—	—	99	—	—	—	—	95	—	—	—	—	99	—	—	—	—	85	—	—	—	—	99

[a]Numbers within brackets are reliability coefficients. The other numbers are factor toadings obtained after oblique rotained of the initial solutions (all loadings have been multiplied by 100). Loadings of less than .3 have been omitted. The total vanance extracted by the five factors is 77%, 79%, 80%, and 78%, and the average interfactor correlation is .23, .22, .21, and .14 for the computer manufacturer, retail chain, automobile insurer, and life unsurer, respectively.

[b]Behavioral-intentions labels |1 through |13 correspond to those of the items listed in Table 1.

Relationship Between Service Quality and Behavioral Intentions

The first hypothesis predicted a positive (negative) quality-intentions relationship for favorable (unfavorable) behavioral intentions, with different slopes below and above the zone of tolerance relative to within it. This hypothesis was tested by using multiple regression analysis to example simultaneously (1) whether the slope of the relationship within the zone of tolerance was significantly different from zero and (2) whether this slope differed significantly from the slopes below and above the zone of tolerance. In accordance with procedures discussed by Cohen and Cohen (1983, Chapter 8) for conducting this type of analysis, the following regression equation was estimated:

(1) $Y = B_0+B_{d1}d_2+ B_1X+ B_2d_1X+ B_3d_3X+\varepsilon_1$

where

Y = behavioral-intentions score;

X = service-quality score;

d_1 = dummy variable with a value of 1 if the perceived service is below the zone of tolerance. 0 otherwise;

d_2 = dummy variable with a value of 1 if the perceived service is below above the zone of tolerance. 0 otherwise;

B_S = unstandardized regression coefficients; and

ε= error term.

The coefficients in Equation 1 that are relevant for examining the first hypothesis are B_1, B_2, and B_3. Specifically, B_1 represents the slope of the quality-intentions relationship within the zone of tolerance, whereas B_2 and B_3 represent changes in B_1 below and above the zone of tolerance, respectively. Thus, $B_1+ B_2$ represents the slope below the zone, and $B_1+ B_2$ represents the slope above the zone.

Service quality (the key independent variable X) was operationalized in two ways: as the rating on the 9-point overall-quality (OQ) scale and as a weighted-average perceived perforamance(WP) score across the SERVQUAL dimensions. Of late there has been debate in the literature about the most appropriate way to operationalize service quality (cf. Brown, Churchill, and Peter 1993; Cronin and Talor 1992; Parasuraman, Berry, and Zeithaml 1993; Parasuraman, Zeithaml, and Berry 1994b; Teas 1993). The central issue in this debate is whether service quality should be measured as the difference between customers' perceptions and expections ratings or simply as the perceptions ratings. Although this issue continues to be debated, there is some agreement that a study's purpose may influence the choice of which measure to use: The perceptions-only operationalization is appropriate if the primary purpose is to diagnose accurately service shortfalls (Parasurman, Zeithaml, and Berry 1994a). The purpose of our present study is the former. Moreover, as we discuss subsequently, the two expectations measures (i.e., the adequate- and dsired-service levels) were independently incorporated incorporated into the analysis to operationalize the two dummy variables d_1 and d_2. Therefore, the ratings from the SERVQUAL portion of the survey were used to operationalize service qualition of the weighted-average *performance* scores, rather than *difference* scores.

TABLE 3
Regression Analysis Results

Independent Variable (X)	Slope Within Zone of Tolerance (B_1)[a]		Change in Slope: Below Zone of Tolerance (B_2)		Change in Slope: Above Zone of Tolerance (B_3)		Adjusted R-squared Values[b]	
	WP	OQ	WP	OQ	WP	OQ	WP	OQ
Computer Manufacturer								
Loyalty	.67	.58	−.09 (ns)	−.02 (ns)	−.15 (ns)	**−.23 ($p < .1$)**	.37	.41
Switch	−.55	−.44	.23 (ns)	.08 (ns)	.33 (ns)	**.36 ($p < .1$)**	.14	.15
Pay More	.56	.54	**−.23 ($p < .1$)**	**−.25 ($p < .05$)**	−.29 (ns)	**−.52 ($p < .01$)**	.16	.19
External Response	−.2	−.12 (ns)	−.08 (ns)	−.09 (ns)	.21 (ns)	.03 (ns)	.08	.07
Retail Chain								
Loyalty	.78	.56	**−.33 ($p < .1$)**	−.11 (ns)	−.29 (ns)	−.23 (ns)	.39	.46
Switch	−.69	−.33	**.46 ($p < .05$)**	.12 (ns)	.74 (ns)	.29 (ns)	.20	.15
Pay More	.43	.18 (ns)	−.22 (ns)	.02 (ns)	−.85 (ns)	−.28 (ns)	.19	.17
External Response	−.47	−.25 ($p < .05$)	**.43 ($p < .05$)**	**.29 ($p < .05$)**	.16 (ns)	.15 (ns)	.20	.19
Automobile Insurer								
Loyalty	.78	.49	−.08 (ns)	**.25 ($p < .1$)**	−.15 (ns)	−.01 (ns)	.50	.47
Switch	−.87	−.63	**.45 ($p < .1$)**	.24 (ns)	**−.73 ($p < .1$)**	**−.69 ($p < .05$)**	.28	.28
Pay More	.39	.32	−.15 (ns)	.05 (ns)	−.14 (ns)	−.13 (ns)	.11	.15
External Response	−.57	−.57	**.55 ($p < .1$)**	**.52 ($p < .05$)**	.15 (ns)	.45 (ns)	.20	.13
Life Insurer								
Loyalty	.72	.52	.10 (ns)	.14 (ns)	.52 (ns)	1.27 (ns)	.68	.62
Switch	−.45	−.37	.14 (ns)	.13 (ns)	.92 (ns)	1.12 (ns)	.28	.30
Pay More	.40	.38	−.05 (ns)	−.10 (ns)	.25 (ns)	.62 (ns)	.08 ($p < .1$)	.12 ($p < .05$)
External Response	−.32 (ns)	−.14 (ns)	.15 (ns)	.03 (ns)	.65 (ns)	.20 (ns)	.03 (ns)	.00 (ns)
All Companies								
Loyalty	.70	.55	**−.12 ($p < .1$)**	.01 (ns)	−.10 (ns)	−.15 (ns)	.45	.48
Switch	−.67	−.47	**.35 ($p < .01$)**	**.16 ($p < .05$)**	.15 (ns)	.05 (ns)	.21	.20
Pay More	.43	.37	−.10 (ns)	−.07 (ns)	−.25 (ns)	**−.34 ($p < .05$)**	.16	.18
External Response	−.28	−.21	.06 (ns)	.06 (ns)	.22 (ns)	.12 (ns)	.11	.10

[a]The B_1 values are significant at $p < .01$ unless otherwise stated.

[b]The adjusted R-squared values are for the regression model specified in Equation 1; the values are significant at $p<.01$ unless otherwise stated.

To determine WP, a perceived performance rating was first computed for each SERVQUAL dimension by averaging the ratings on the items forming the dimension. (The coefficient alpha values for reliability [five items], responsiveness [three items] assurance [four items], empathy [four items] and tangibles [five items] ranged from .80 to .96 across the four samples.) To obtain the WP score, the average performance ratings for the dimensions were then weighted by the relative importance of the

five dimension was to them in evaluating a company's service. The relative points allocated to the dimensions were used as weights in computing the WP score.

The dummy variables d_1 and d_2 were operationalized by comparing each respondent's WP score with his or her weighted-average adequate- and desired-service scores (computed using a procedure similar to that used in determining WP). The d_1 value was 1 if WP was less than the weighted-average adequate-service score, 0 otherwise. The d_2 value was 1 if WP was greater than the weighted-average adequate-service score, 0 otherwise.

The regression analysis was performed separately for the four companies, as well as for the combined sample. In each instance, two equations were estimated for each behavioral-intentions dimension: one using WP scores and the second using OQ score across items comprising the behavioral-intentions dimension represented the dependent variable Y. In Table 3, we summarize the regression-analysis results pertaining to the first hypothesis.

The regression coefficients in tne first two colums of Table 3(B_1 values) offer strong support for the hypothesized quality-intentions links within the zone of tolerance. The coefficients for WP and OQ are all in the hypothesized directions – positive for loyalty and pay more and negative for switch and external response – and, with few exceptions, are statistically significant at $p<.01$. The pattern of B_1 values across the four companies suggests that the effects are generally stronger for loyalty and switch than for pay more and external response. The results for the combined sample provide additional insight into the relative infuences of service quality on the four behavioral-intentions dimensions: the strongest effects of both WP and OQ are on loyalty (.70 and .55), followed by switch (-.67 and -.47), pay more (.43 and .55), followed by switch (-.67 and -.47), pay more (.43 and .37), and external response (-.28 and -.21) in that order.

The regression coefficients in Table 3 in the columns for B_2 and B_3 values pertain to the differential effects predicted by H_1 (the statistically significant B_2 and B_3 coefficients are boldfaced). For each behavioral-intentions dimension within a given company, the B_2 coefficients for WP and OQ have the same sign except in a few instances. Similarly, the signs of the B_3 coefficents are identical for WP and OQ. The stability in the signs of the slope-change coefficients across two different service-quality measures is encouraging in terms of drawing inferences about the *direction* of changes in the quality-intentions link below and above the zone of tolerance. However, support for the strength of these changes is mixed, as is evidenced by the pattern of statistical significance of these coefficients. Therefore, based on the presence of significant coefficients for at least one of the two service-quality measures (WP and OQ), only the following inferences seem warranted.

In the computer-manfacturer sample, the quality-intentions relationship for loyalty and switch is flatter above the zone of tolerance (implying diminshed sensitivity to quality improvements beyond the desired-service level), but is unchanged below the zone of tolerance. The relationship for pay more is flatter both below and above the zone of tolerance. In the retail-chain sample, the relationship for loyalty, switch, and external response is flatter below the zone of tolerance (implying undiminished returns for quality beyond the desired-service level). In the automobile-insurer sample, the relationship for switch is flatter below the zone and considerably steeper above the zone. The relationship for external response in the automobile-insurer sample is similar to that in the retail-chain sample of the sample (i.e., flatter below the zone but unchanged above it). All of the slope-change coefficients in the life-insurer sample are nonsignificant. This lack of significance may be due to insufficents data points below and above the zone – only 15 respondents in the life-insurer sample had WP scores below, and

only 8 had WP scores above the zone. A similar deficency may account for the lack of significance of any of the B_3 coefficients in the retail-chain sample; only 16 respondents had WP scores above the zone.

In the combined sample, the quality-intentions relationship for loyalty and switch is flatter below but remains unchanged above the zone. Thus, exceeding the adequate-service threshold can sharply increase the payoffs (in terms of fostering customer loyalty and curtailing propensity to switch). However, the combined-sample results for the pay more dimension reveal considerable flattening of the quality-intentions relationship above the zone of tolerance. In fact, the slope for the OQ–pay more relationship changes from .37 below the desired-service level to just .03 (.37 - .34) above. Thus, companies wishing to improve service beyond the desired-service level should do so cautiously and cost-effectively, becarse recouping the added expense by charging price premiums may not be a viable option. The quality-intentions relationship for external response – which, as indicated by its B_1 coefficients, is flatter within the zone than for the other three dimensions – remains unchanged below and above the zone as well. Thus, relative to the other dimensions, external response appears much less affected by changes in quality over a wide range.

The pattern of adjusted R-squated values in the last two columns of Table 3 offer two noteworthy insights based on the overall ability of service-quality-related variables (d_1, d_2, and X) to explain the variation in scores on each behavioral-intentions dimension. First, the relationship of quality (both WP and OQ) with loyalty and switch is consistently stronger in the two pure-service companies (automobile and life insurers) than in the two product compaies (computer manfacturer and retail chain); however, the reverse is true for the quality – pay more relationship: The relationship is consistently stronger in the two product companies (for additional analyses, see the Appendix). Second, the quality – pay more relationship is consistently weaker than the combined sample. We examine the implications of these insights subsequently.

In Table 4, we summarize the mean scores for service quality and behavioral intentions by company. An across-company comparison of the mean-score patterns provides additional support for inferring that service quality is associated positively with favorable behavioral intentions and negatively with unfavorable behavior intentions. With few exceptions, the better a company's service-quality scores, the higher are its loyalty and pay more means and the lower are its switch and external response means. To illustrate, the retail chain's WP and OQ scores are considerably lower than the corresponding scores for the automobile insurer. Matching behavioral-intentions data show that the retail chain's customers are less loyal and less willing to pay more – and more prone to switch and complain externally – than the automobile insurer's customers.

TABLE 4

Mean Scores for Service Quality and Behavioral Intentions

Company	Service Quality[a]		Behavioral Intentions[b]			
	WP	OQ	Loyalty	Switch	Pay More	External Response
Computer Manufacturer	7.3	6.8	5.3	3.8	3.9	3.6
Retail Chain	6.5	6.2	4.9	3.9	3.2	4.3
Automobile Insurer	7.8	7.3	5.6	3.1	3.5	4.2
Life Insurer	7.6	7.0	5.0	3.1	3.4	3.8

[a]Mean scores on a 9-point scale. [b]Mean scores on a 7-point scale.

Impact of Service-Problem Experience and Resolution on Behavioral Intentions

H_2 predicts that customers experiencing no service problems have the best behavioral-intentions scores (highest for favorable intentions and lowest for unfavorable intentions – H_{2a}), customers experiencing problems that were resolved would have intermediate scores (H_{2b}), and customers with unresolved service problems would have the worst scores (H_{2c}). To test this hypothesis, the combined sample was classified into three groups of respondents: those experiencing problems that were resolved. Analysis of variance was conducted to determine whether scores on each behavioral-intentions dimension differed across the groups. The F-values for all four ANOVAs were significant at $p < 0.001$. Eight prespectifed contrasts (first-group mean versus second-group mean and second-group mean versus third-group mean for each of the four behavioral-intentions dimensions) were also evaluated. In Table 5, we present the group means and the significance levels for the planned contrasts.

The alpha level for testing the significance of individual contrasts was reduced by applying the Bonferroni correction to ensure that the overall probability of Type I error across all eight contrasts didi not exceed .05 (for details, see footnote b in Table 5). The evidence in Table 5 fully supports the second hypothesis for the loyalty, switch, and external response dimensions, and partially support it for the pay more dimension. The findings clearly show that customers experiencing no service problem have the strongest levels of loyalty intentions and the weakest switch and external response intentions. However, their pay more intentions are not significantly highter than those of customers experiencing service problems that were resolved satisfactorily. Among customers experiencing recent service problems, those with unresolved problems. Thus, effective service recovery significantly improves all facets of behavioral intentions to the levels expressed by customers not experiencing service problems. These results are consistent with those from a study in which Bolton and Drew (1992) examine the impact of problem experience and resolution on telephone customers' evaluation of billing service: Customers rated the service substantially lower if they had experienced a billing problem, and the effect of satisfactorily resolving the problem did not completely offset its negative impact.

Discussion and Implications

We developed a conceptual model of the behavioral and financial consequences of service qulaity (Figure 1. A portion of the model – the qulaity-intentions link – was empirically examined at the individual-customer level in a multicompany context. Two distinctive features of the study's empirical component were the development of a more extensive behavioral-intentions battery than has been used inprevious research and the investigation of changes in the quality-intentions link at different service levels relative to customers' expectations. The study's findings have important implications for researchers and managers.

Directions for Further Research

The distinctive aspects of the empirical study contribute several new insight whose implications we subsequently explore. However, our findings also reveal certain weaknesses with methodogical implications. First, the behavioral-intentions battery developed here, though more comprehensive than intentions scales used in previous studies, need further development. In particular, more items are needed to strengthen the reliability of three of its components, namely, switch, pay more, and external response. With additional items, the scales should be reevaluated for their psychometric properties.

Consideration should also be given to augmenting and including in the battery internal response – the component that was eliminated because it had only one item subjest to equivocal interpretation. As we previously mentioned, customers favorably disposed toward a company may complain to give it a second chance, while customers unfavorably disposed may also complain merely to vent their frustrations. Therefore, in expanding this component, it would be useful (from a diagnostic standpoint) to add items that capture *why* customers are likely or unlikely to complain. For example, responents could be asked to rate the likehood of the following (on the same 7-point scale used in the behavioral-intentions battery):

- Complain to XYZ's employees about a service problem because I am confident they will resolve the problem.
- Complain to XYZ's employees about a service problem to help relieve my frustration (reverse scored).

Second, additional research is needed to examine further our tentative insights pertaining to intercompany differences in the quality-intentions relationship and the changes in its slope below and above the zone of tolerance relative to within it. Although the total sample size was large for each company, the subsamples of respondents below and above the zone were relatively small, and this possibly contributed to the lack of significance of some of the slope-change coefficients. Obtaining larger samples of respondents below and above the zone in further studies would facilitate a more robust examination of changes in the quality-intentions relationship. One option for doing so is to select samples from companies that are well known for their excellent (or poor) service. Another option is to devise a suitable quota-sampling procedure to ensure large enough subsample below, within, and above the zone. Multicompany research using such sampling procedures is needed for more definitive conclusions about the intrguing differences uncovered in this study, which concern changes in the quality-intentions link within and across dimensions and companies.

In addition to addressing the prevous issues, further research should also focus on aspects of conceptual model not examined here. For example, the association between behavioral intentions and remaining with or defecting from the company merits study. Rust and Zahorik (1993) suggest ways to investigate this link, including panel data, longitudinal analysis with customers, and cross-sectional surveys asking customers about previous and current providers. Additional cross-sectional research might ask customers to indicate not only their behaviors. For example, customers could be asked whether they have said positive things about the company (actual behaviors) instead of how likely they would be to say positive things (bahevioral intentions). Such research also needs to be supplemented with longitudinal research to verify the carsal direction of the quality-intentions link. Data from studies tracking service quality and behavioral intentions in subsequent periods.

If the longitudinal data set also contains information for individual customers on variables such as purchase frequency and volume and new-customer referrals, the impact of service quality on actual behavior can be traced. Companies that have information systems linking customer data and purchase data could also examine increases or decreases in spending that result from different levels of service quality. This type of research would provide direct evidence of the financial impact of service qulaity at the individual level.

An intriguing finding worthy of further research is the pattern of across-company differences implied by the differences in the adjusted R-squared values for the various quality-intentions regression equations (Table 3). As previously highlighted, the quality-intentions link for the loyalty and

switch dimensions is consistently stronger for the two pure-service companies than for the two product companies, whereas the reverse is true for pay more. Is it possible that the *role* of service within a firm's total offering (i.e., core versus supplemental component) is a plausible explanation for this pattern of differences? Because service is all that a pure-service provider, such as a life insurance company, delivers in exchange for customers' money, customers' commitment to the company might be extremely responsive to service-quality improvements; however, these customers' willingness to pay more may not be as responsive, because they may feel they have, in effect, already paid for high-quality service. Alternatively, the pay more findings may simply refect customers' general reluctance to pay for insurance service and may not apply to pure services overall.

In contrast, because service is not the core of what a product company sells to customers, their commitment to the company may be less sensitive to changes in service quality (especially if product quality is mediocre); however, customers may be somewhat more willing to pay more for batter service, because they may consider service to be an extra feature. To what extent and under what circumstances are these speculations likely to be true? Furthermore, what is the nature and extent of the impact of factors other than the service component (e.g., price, product characteristics) on customers' behavioral intentions? Additional conceptual and empirical research addressing these issues can improve our understanding of the behaviroal consequences of service quality.

TABLE 5

Mean Behavioral-Intentions Scores for Respondents Classified According to Sevice Problem Experience

	Mean Scores for Customers Experiencing[a]			Significance Level for Planned Contrasts[b]	
Behavioral-Intentions Dimension	No Service Problems (Group 1; n=2153)	Service Problems That Were Resolved (Group 2; n=455)	Service Problems That Were Not Resolved (Group 3; n=346)	Group 1 Mean versus Group 2 Mean	Group 2 Mean versus Group 3 Mean
Loyalty	5.47	5.01	4.11	.000	.000
Switch	3.35	4.00	4.49	.000	.000
Pay More	3.76	3.63	3.11	.036	.000
External Response	3.70	3.95	4.43	.000	.000

[a]The behavioral-intentions scores are on a 7-point likelihood scale.

[b]The reported significance levels are for one-tailed tests, because H_2 implies directional comparisons of group means. Because multiple contrasts were evaluated to test this hypothesis, the Bonferroni correction was applied to the customary alpha level of .05 to control the Type I error rate. Specifically, the alpha level was lowered by a factor of eight (the total number of planned contrasts) to yield a critical alpha level of .006 for testing the significance of each constrast (Myers 1979, pp.298-900). At this reduced alpha level, seven of the eight planned contrasts are significant; the sole exception is the Group 1 versus Group 2 constrast for the pay more dimension.

Managerial Implications

The overall findings offer strong empiricald support for the intuitive notion that improving service quality can increase favorable behavioral intentions in the right directions, including striving to meet customers' desired-service levels (rather than merely performing at their adequate-service levels),

emphasizing the prevention of service problems, and effectively resolving problems that do occur. However, multuple findings suggest that companies wanting to improve service, especially beyond the desired-service level, should do so in a cost-effective manner: the quality – pay more relationship in the conbined sample, while upwardly sloping below the desired service level, becomes virtually flat above that level (Table 3); the adjusted R-squated values for the quality (Table 3); and, in each of the four companies, the mean score for pay more intentions is considerably lower than for loyalty intentions (Table 4).

In addition to these general implications, the conceptual model and the empirical findings have specific implications for firms' research and resource-allocation decisions pertaining to improving service quality. A salient issue on the service quality research agenda of many companies is understanding the impact of service quality on profits. One of the reasons it has been difficult for individual firms to calibrate this impact is that the relationship is complex and consists of multiple intervening relationships. As was suggested in our model of individual customer response, a chain of relationships is integral to the overall impact.

Companies first must examine the impact of their service-quality provision on customers' responses, including intentions signaling behavioral-intentions questions could be incorporated easily into the measurement systems currently used to capture service-quality assessments. Doing so provides a continuous source of information relating to such questions as.

- What levels of service quality must we deliver to retain customers?
- What service initiatives should we undertake to encourage customers to recommend the company, or pay a price premium?
- What attributes should we focus on to reduce the likelihood of customers spreading negative word-of-mouth communications when service problems occur?
- To retain customers, sould we spend our money on proactive service improvements or on handing complaints?

In essence, behavioral intentions become dependent variables with potentially higher validity (because they are more closely related to actual behaviors) and richer diagnostic value than the "overall service quality" or "customer satisfaction" variables currently being used in most measurement programs.

Compaies also can use surveys eliciting behavioral intentions as an early warning system to identify customers in danger of defection and to take timely corrective action. It has long been speculated that many service customers exhibit "spurious loyalty" – they remain with companies they are dissatisfied with because they see no alternatives. Local telephone customers, with no choice in service providers, are often cited as customers exhibiting spurious loyalty. Because of the deregulation of that industry – and the imminent competition among cable companies, long-distance companies, and other regional Bell companies – firms supplying local telephone service might be able to strengthen customer retention by identifying customers most in danger of defection.

Another measurement implication for companies to understand better and leverage the relationships in the conceptual model (Figure 1) is to query customers about whether they have manifested, rather than merely would manifest favorable or unfavorable behaviors. Companies should also consider connecting their marketing database to their accounting information systems to explore the links

between customers' assessments of service quality and their purchase behavior. L.L. Bean has accounting systems that track vital purchasing patterns of individual customers: what they purchase, when they buy, and how much they spend over time. Companies with such systems could benefit from integrating their customer-research database with actual purchase data to enhance their knowledge of how and to what extent behavioral intentions act as precursors of purchasing behavior.

Yet another facet of the conceptual model that merits through analysis at the individual company level involves actual increases or decreases in revenue from retention or defection of customers. Reichheld and Sasser (1990) call for accounting systems that capture the expected cash, flows from and life-time value of a loyal customer. This call could be expanded to include an examination of the revenue implications of individual behavioral-intention components as well. For example, what is the potential revenue differential between customers indicating a low versus a high propensity to switch? Is there a difference in the revenue streams from customers expressing a strong versus a weak inclination to pay a price premium for a company's service? Examining such questions will facilitate a more detailed calibration and a clearer understanding of the financial consequences of service quality.

Appendix

To formally test the significance of these and other inter-company differences implied in our discussion, an extended version of regression Equation 1 was estimated for the combined sample:

(A1) $$Y=B_0+B_{g1}g_1+B_{g2}g_2+B_{g3}g_3+B_{d1}d_1+B_{d2}d_2+B_1X+B_2d_1X+B_3d_2X$$
$$+g_1[B_{g1d1}d_1+B_{g1d2}d_2+B_4X+B_5d_1X+B_6d_2X]$$
$$+g_2[B_{g2d1}d_1+B_{g2d2}d_2+B_7X+B_8d_1X+B_9d_2X]$$
$$+g_3[B_{g3d1}d_1+B_{g3d2}d_2+B_{10}X+B_{11}d_1X+B_{12}d_2X]$$
$$+\varepsilon_1$$

where

g_1= dummy variable with a value of 1 when the company is the retail chain, 0 otherwise;

g_2= dummy variable with a value of 1 when the company is the automobile insurer, 0 otherwise;

g_3= dummy variable with a value of 1 when the company is the life insurer, 0 otherwise; and

Y, X, d_1, d_2, B's, and ε = same as those defined defined for Equation 1.

When g_1, g_2, and g_3 are 0, Equation A1 pertains to the computer manufacturer, with B_1 representing the slope of the quality-intentions relationship within the tolerance zone and B_2 and B_3 representing changes in that slope below and above the zone, respectively. Using the computer manufacturer as the reference company, B_4 through B_6, B_7 through B_9, and B_{10} through B_{12} are the corresponding slope-change coefficients for the retail chain, automobile insurer, and life insurer, respectively. As in the case of Equation 1, Equation A1 was estimated for each of the four behavioral-intentions dimensions. The results show consistent statistical significance (at $p < .05$) only for B_1. With a few exceptions (that revealed no meaningful pattern), the slope-change coefficients B_2 through B_{12} are not significant. An inadequate number of sample units with nonzone values for the variables corresponding to these eleven coeffents (and the consequent low variance for these variables) is a highly plausible explanation for this lack of significance: The percentage of respondents (relative to the total sample) with nonzero values was less than 5% for five of the variables, less than 10% for another five variables,

and less than 20% for the remaining one variable. A set of tables summarizing these regression results can be obtained from the third author.

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