

A Longitudinal Analysis of Satisfaction and Profitability

Kenneth L. Bernhardt

GEORGIA STATE UNIVERSITY

Naveen Donthu

GEORGIA STATE UNIVERSITY

Pamela A. Kennett

UNIVERSITY OF SOUTH ALABAMA

Recently, significant attention has been focused on customer satisfaction. However, few studies link satisfaction with performance, and even fewer studies examine this link through the use of time-series data. In this study, a longitudinal analysis of satisfaction and performance for a national chain of fast-food restaurants is conducted. A total of 342,308 consumer responses, 3,009 employee responses, and 12 months of restaurant performance measures are analyzed. Whereas there is a positive and significant relationship between customer satisfaction and employee satisfaction in any one given time period, no significant relationship between customer satisfaction and performance, and employee satisfaction and performance, is uncovered in this cross-sectional analysis. However, the analysis of time-series data reveals that a positive and significant relationship exists between changes in customer satisfaction and changes in the performance of the firm. Therefore, the impact of an increase in customer satisfaction on profits, although obscured in the short run by many factors, is significantly positive in the long run. J BUSN RES 2000. 47.161–171. © 1999 Elsevier Science Inc.

Customer satisfaction has attracted significant attention from top management in many companies. Although research into this area is not new (Oliver, 1993; TARP, 1979, 1986), it has experienced a sudden surge, growing into a \$100 million industry in the United States (Loro, 1992). In a survey of 700 top executives, 64% indicated that customer satisfaction was their number one priority. The other 36% indicated it was one of their top priorities (Shoultz, 1989). This sentiment has been echoed in other surveys of upper-level management (Band, 1988; Quinlan, Zemke, Snider, Reinemunde, Ayling, Singh, Perkins, Antonini, and Loeb, 1991). The prestige of the Baldrige National Quality Award is addi-

tional evidence of the importance that corporate America has placed on customer satisfaction (Blasier and Snyder, 1992). The interest in customer satisfaction extends beyond the United States. For example, in Sweden, customer satisfaction has been measured on the national level (Fornell, 1992; Anderson and Sullivan, 1993; Anderson, Fornell, and Lehmann, 1994).

Some concern has been expressed about the heavy emphasis on customer satisfaction and whether or not it relates to bottom-line performance (Zeithaml, Parasuraman, and Berry, 1990). This concern may be well founded. Whereas customer satisfaction, and such related areas as service quality, have received significant attention in the marketing literature, this attention has not focused on modeling the impact of these constructs on profits or other performance measures (Zahorik and Rust, 1992). Instead, past research focused on such other issues as identifying key service attributes (e.g., Bitner, Booms, and Tetreault, 1990; Parasuraman, Zeithaml, and Berry, 1985); selecting important attributes (e.g., Bolton and Drew, 1991; Rust and Zahorik, 1991); modeling the linkage between service programs and attitudes and/or behavior intentions (e.g., Oliver, 1980; Westbrook and Oliver, 1991; Cronin and Taylor, 1992); and modeling behavioral response to service programs (e.g., Rust and Zahorik, 1991; Woodside, Frey, and Daly, 1989).

Few researchers have examined the link between satisfaction and performance measures. However, those who have (for example, see Rust and Zahorik, 1993; Rust, Zahorik, and Keiningham, 1995; and Boulding, Kalra, Staelin, and Zeithme, 1993), have taken a cross-sectional approach to examining the relationship (see Anderson, Fornell, and Lehmann, 1994 for an exception) and subsequently have found inconclusive results. This relationship has yet to be examined using multiple time frames. The use of longitudinal data when examining customer satisfaction and quality issues has long been advo-

Address correspondence to Dr. Kenneth L. Bernhardt, Department of Marketing, Georgia State University, Atlanta, GA 30303, USA.

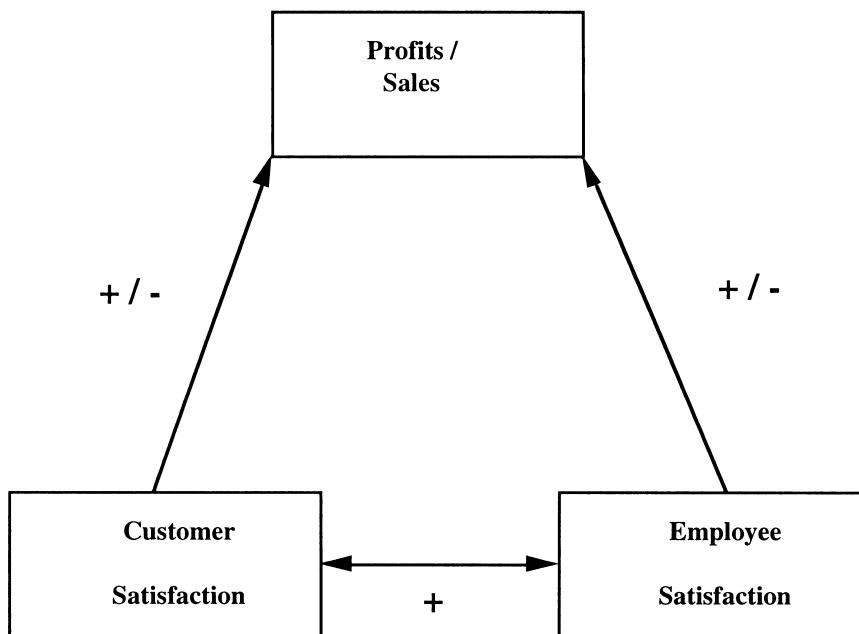


Figure 1. Relationship between customer satisfaction, employee satisfaction and profits/sales (based on previous studies).

cated by academics and practitioners (e.g., LaBarbera and Mazursky, 1983; Oliver, 1993; Rust and Zahorik, 1993; Schneider, 1991; Zeithaml, Parasuraman, and Berry, 1990). Until this relationship is examined from a long-term perspective, the real importance of customer satisfaction may not be fully appreciated.

The contribution of this study is that it reexamines the relationship between satisfaction and performance and clarifies the confusion surrounding it by examining the relationship in a longitudinal setting. Specifically, a theoretical background highlighting past research linking satisfaction with performance and reasons for the inconclusive findings in this area are presented. Once an understanding of the appropriate longitudinal framework for examining customer satisfaction and its relationship with employee satisfaction and performance is established, appropriate hypotheses are presented, and the methodology and findings of the study are furnished. Finally, in the discussion section, the conclusions and limitations are presented along with managerial and research implications of the study findings.

Theoretical Background and Hypotheses

A small core of empirical work has been conducted linking satisfaction and performance (Zahorik and Rust, 1992). These studies, taken in aggregate, explore three major relationships. Figure 1 highlights these relationships: (1) the relationship between customer satisfaction and profits; (2) the relationship between employee satisfaction and profits; and (3) the relationship between customer satisfaction and employee satisfaction.

Customer Satisfaction and Profits

Mixed results have been found for the relationship between customer satisfaction and bottom-line performance in any given time period. Intuitively, it seems that this relationship should be positive and that the higher the customer satisfaction, the more favorable the performance measures. In fact, such researchers as Nelson, Rust, Zahorik, Rose, Batalden, and Siemanski (1992) have found that this positive relationship exists and have shown that it holds for all profitability measures—earnings, net revenues, and return on assets.

However, many researchers have drawn opposite conclusions. Schneider (1991, p. 154), in his review article on service quality and profits, surmises “customer service-quality perceptions and satisfaction are sometimes, but not always, reflected in profits.” Tornow and Wiley (1991) found a negative correlation between customer satisfaction and gross profits. In another study, Wiley (1991) concluded that all dimensions of customer satisfaction related negatively to financial performance. Although these findings might seem counterintuitive, on closer examination, they may not be that surprising. In any given time period, a multitude of factors could mask the true relationship between these constructs. For example, a business might decide that increasing its customer satisfaction is important, but in doing so, it has to spend a large sum of money to implement this. This could result in high customer satisfaction, but lower profit. Or perhaps severe weather might keep a large number of customers homebound for several weeks. Although those customers who venture out could be the most satisfied, overall sales might be poor. Conversely, internal cost-cutting measures might be taken that will make a firm seem more profitable in any given time period, even if customers are not satisfied.

Given the fact that many actions of the firm that are beyond the scope of customer satisfaction have such a tremendous impact on profits in any given time period, the significant positive relationship previously discussed seems to be the exception and not the rule, and therefore given the equivocal findings, an insignificant relationship is hypothesized.

H1: There is an insignificant relationship between profit/sales in time period t and customer satisfaction at time period t .

Although the conclusions above concern the relationship between customer satisfaction and financial performance, conclusions have also been drawn concerning the relationship between customer satisfaction and nonfinancial performance. Tornow and Wiley (1991) uncovered a positive relationship between customer satisfaction and nonfinancial performance measures such as right-the-first time and customer retention. This is opposite to their conclusion concerning financial performance. Schneider (1991) also found a positive relationship between customer satisfaction and performance when nonfinancial measures were considered.

Furthermore, Cronin and Taylor (1992) explored the relationship between service quality and customer satisfaction and their subsequent effects on purchase intentions and concluded that perceived service quality leads to satisfaction, and that satisfaction, in turn, had a significant positive effect on purchase intent. Dabholkar and Thorpe (1994), Rust and Zahorik (1993), Oliver and Swan (1989), Bearden and Teel (1983), LaBarbera and Mazursky (1983), Swan and Trawick (1981), Oliver (1980), and Swan (1977) also found support for this relationship between satisfaction and purchase intentions. Boulding, Kalra, Staelin, and Zeithaml (1993) examined the effects of perceived service quality on behavioral intention. Expectations and the delivered service influenced perceived service quality, which in turn, had an impact on behavioral intentions such as willingness to provide favorable word-of-mouth and to engage in repeat business. It is, therefore, hypothesized that:

H2: There is a positive relationship between customer satisfaction at time period t and behavior intent at time period t .

Employee Satisfaction and Profits

Equally mixed results were found concerning the relationship between customer satisfaction and profits; mixed results were also found concerning the relationship between employee satisfaction and profits. When examining the relationship, Schneider (1991) drew a conclusion almost identical to his conclusion concerning the relationship between customer satisfaction and profitability, “frequently, but not always, employee data are reflected in unit profitability (p. 154).”

Paradise-Tornow (1991) concluded that overall employee satisfaction was positively related to financial performance

measures. Satisfied employees, one could argue, should be more motivated and harder working than dissatisfied ones. This effort should be reflected in the company’s performance. However, other researchers have failed to replicate these findings in similar cross-sectional studies.

For example, Tornow and Wiley (1991) found a consistent negative relationship between employee satisfaction (with such items as pay and benefits) and gross profit. Furthermore, Wiley (1991) concluded the relationship between overall employee satisfaction and financial performance was “virtually nonexistent.” He did, however, find a negative relationship between financial performance and employees’ satisfaction with training and standard processes. Just as with customer satisfaction and financial performance, the true relationship between employee satisfaction and financial performance may also be masked by any number of factors in any given time period. Employees might be happy, because their company has invested money in employee benefits or improvements that have an impact on the employee but not the customer, resulting in a short-term profit reduction. Or, in an economic downturn, employees might be happy to even have a job at the same time as sales are down. Thus, given the equivocal findings, the following hypothesis is proposed:

H3: There is an insignificant relationship between employee satisfaction at time period t and profit/sales in time period t .

Customer Satisfaction and Employee Satisfaction

The relationship between customer satisfaction and employee satisfaction is the one relationship that does not seem to yield conflicting results. In a summary of the research to date, Schneider (1991) concluded that employee and customer satisfaction are positively correlated. This positive correlation holds across numerous industries and in both consumer and business-to-business settings. Schlesinger and Zornitsky (1991) found that this relationship gets stronger as employees increase in tenure.

This relationship has been explicitly explored by both Tornow and Wiley (1991) and Wiley (1991), with almost identical findings. A strong relationship was found between customer satisfaction and employee satisfaction when satisfaction was measured for service-oriented aspects of the company. This is not surprising, given that employees and customers are usually involved in the coproduction of the services. However, when satisfaction concerning such things as pay and benefits was measured from an employee standpoint, a weak relationship was found between customer satisfaction and employee satisfaction.

Schneider and his colleagues (1980, 1985, 1991) reinforce the positive relationship between employee satisfaction and customer satisfaction. Specifically, when employees reported that service was a priority in their respective companies and spoke positively of the companies’ human resource practices,

customers reported higher service quality. Also, employee behavior could be predicted by customer perceptions, and customer behavior could be predicted by employee perceptions. Therefore, the following hypothesis is proposed:

- H4:* There is a positive relationship between customer satisfaction at time period t and employee satisfaction at time period t .

Longitudinal View

As previously suggested, the conflicting relationships between customer satisfaction and performance (profits or sales) and employee satisfaction and performance may be attributable to the fact that in all these studies cross-firm data collected at one point in time (cross-sectional data) were analyzed. Cross-firm data over time (time-series data) have not been examined to date. A positive relationship between customer satisfaction and performance may not appear in the short-run or through the examination of cross-sectional data. The relationship may only become apparent through the use of time-series data (Zeithaml, Parasuraman, and Berry, 1990, pp. 8–9). This same rationale applies to the relationship between employee satisfaction and profits. Often, efforts to increase employee satisfaction will not bring about an immediate increase in profits, but will eventuate in profits (Schneider, 1991).

Time-series data are unique, because they allow a firm to compare itself with itself over time, and to notice the impact of satisfaction alone on performance (assuming other factors, such as location, do not change over time). Cross-sectional data, on the other hand, can be misleading, because at that point, the firm is comparing itself with other firms, whose performance may fluctuate because of factors other than satisfaction alone (e.g., location, traffic, promotional considerations, and weather conditions).

The use of cross-sectional data also reflects the fact that short-run costs are often incurred when trying to improve satisfaction. In the long run, the impact of these costs is softened. In addition, it may take some time for a company's efforts to increase customer satisfaction is rewarded by consumer behavior. As stated in H2, customer satisfaction and behavioral intention are positively related. However, the consumer's behavioral intention may not be carried out until future time periods. Although the consumer's satisfaction in time period t will have an impact on behavioral intention in time period t , it may not have an impact on behavior and, as a result, the financial performance of the firm, until time period $t + n$.

Therefore, it is purported that the true impact of satisfaction on performance measures is not apparent when taking a cross-sectional approach. A longitudinal view seems to be necessary. Hypotheses 5 captures this longitudinal orientation.

- H5:* There is a positive relationship between a change in customer satisfaction in previous time periods and a change in current profits/sales.

The goal of this paper is to re-examine the cross-sectional hypotheses that were the focus of most of the previous research in customer satisfaction and then to extend this previous research through the use of time series analysis.

Method

The data for this study come from three independent sources and consist of customer satisfaction, employee satisfaction, and performance information for a national chain of fast-food restaurants. Collection of these data was spurred by the restaurant chain's initiative in 1992 of a customer/employee satisfaction-measurement program, which was one component of the over-all quality audit.

The first set of data, concerning customer satisfaction, comes from a series of surveys conducted at each local restaurant of the chain. Customers from 472 restaurants were surveyed during the time period March 1992 to March 1993. The total sample size was 342,308. The surveys were conducted in each restaurant every other month with approximately 100 questionnaires per restaurant, per data collection period obtained. The data collection was conducted by a national marketing research firm, and professional interviewers were used to collect the data. A sampling procedure was used that ensured that various days of the week and times of day were represented in approximate proportion to sales volume.

Customers were approached after they finished eating and were asked to complete a self-administered questionnaire. After completing the questionnaire, the respondents returned it to the interviewer. The overall response rate was in excess of 90%. The questionnaire itself contained an overall measure of satisfaction ("Overall, how satisfied are you with your visit to _____ today?"); evaluation of the restaurant on a series of nine quality attributes (e.g., "Please rate today's visit to this _____ restaurant on the factors listed below: (1) providing fast service, (2) cleanliness," etc.); intention to visit the restaurant again in the future ("Based on today's visit, what is the likelihood that you will eat at _____ in the future"); and various measures such as time of day, day of week. To ensure a high response rate, it was important to keep the questionnaire very short. Therefore, no demographics were asked. Previous research conducted by the fast-food chain had indicated that there was very little variability among key measures by demographics, thus justifying this decision.

The second set of data, from employees of the fast-food restaurant, was collected separately. Each restaurant was sent a package of questionnaires, and the restaurant manager was asked to distribute these to all employees together with a postage-paid return envelope addressed to an independent research supplier. The employees were assured their responses would be treated anonymously, and, therefore, were asked to complete the questionnaire and return it directly. A total of 3,099 questionnaires were returned from 382 of the 472 restaurants (average of eight per store with a range of 1 to 37).

Table 1. Relationship between Over-all Satisfaction and Quality Attributes

Attribute	Correlation with Over-all Satisfaction <i>n</i> = 342308
Restaurant appearance	0.58
Restaurant cleanliness	0.58
Employees' appearance	0.60
Received moneysworth	0.64
Consistency of food	0.62
Overall quality of food	0.60
Freshness of food	0.65
Attentiveness/courteousness of employees	0.65
Speed of service	0.58

It is possible that some restaurant managers did not distribute the questionnaires. There were no significant differences between stores whose employees responded versus those with no employees responding with regard to such measures as sales, profits, and number of employees. The over-all response rate was approximately 30%. The employee satisfaction data were collected only once, about the same time as the first customer satisfaction data collection.

Employees were asked their overall satisfaction as an employee of the company, their perceptions of the company's success in achieving its mission, ways the company could satisfy more customers, and a few demographic questions. The employee demographics included age, gender, and length of time employed at the company. These variables were selected, because the management, based on prior qualitative research, felt that they would have the biggest impact on employee satisfaction.

The last set of data, concerning restaurant performance, was provided by the company. Several measures of performance for each restaurant were examined including sales, customer counts, and profitability. An identification number for each restaurant was used to link the three databases.

Each of the questionnaires was extensively pretested. The first step in the pretest/questionnaire design was to develop an overall measure of customer satisfaction together with a number of individual attributes that represented attributes important in the determination of service quality. A series of focus groups was conducted to develop these measures. Consumers were asked to describe very positive experiences with fast-food restaurants and very negative experiences. The scenarios described were coded into such categories as overall quality of the food, speed of service, cleanliness of the restaurant, freshness of the food. A large number of possible attributes were identified in this process. Another series of focus groups was then conducted during which this extensive list of attributes was narrowed down to the final list of nine attributes found in Table 1. Little difference in importance was identified among these nine attributes.

Several alternative measures of overall satisfaction were

pretested, including several numeric scales and several different overall satisfaction measures. Consumers liked the direct measure of very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied. This scale was easy for respondents to understand, and there was little disagreement about the category descriptions. Furthermore, the scale chosen here is a common way of measuring customer satisfaction, and although numerous customer satisfaction scales exist (both single- and multi-item), no single scale seems to outperform the others (Peterson and Wilson, 1992). For example, one satisfaction scale may increase reliability and sensitivity, but decrease validity and utility, or vice versa (Peterson and Wilson). Other researchers have acknowledged similar trade-offs when choosing among satisfaction scales, especially when considering a single-item versus a multi-item scale (Parducci, 1965; Schwartz, Hipler, Deutsch, and Strack, 1985; Wedell and Parducci, 1988). Given all these considerations, coupled with the fact that the intent of the researchers was not to develop a new satisfaction measure, it was determined that the aforementioned measure of satisfaction was best suited for the study, given its simplicity and ease of use for the respondents.

Findings

The first step in the analysis was to investigate the relationship of the overall measure of customer satisfaction with the nine individual service quality attributes. Table 1 contains correlation coefficients measuring the relationship between each of the individual attributes and the over-all measure of customer satisfaction. The coefficients are all very close, ranging from 0.58 to 0.65, and significant. Therefore, the correlational evidence suggests that each attribute is important in explaining over-all customer satisfaction, and that poor performance by the chain on any one of the dimensions could cause a consumer to rate the chain low on over-all satisfaction.

Exploratory factor analysis on the nine attributes resulted in four factors. Restaurant appearance, restaurant cleanliness, and employee appearance loaded on Factor 1 (Cronbach's alpha = 0.84). Consistency of food, quality of food, and freshness of food loaded on factor 2 (Cronbach's alpha = 0.82). Attentiveness of employees and speed of service loaded on factor 3 (Cronbach's alpha = 0.71). Received money's worth, alone, loaded on Factor 4. These factors may be labeled as "appearance," "food quality," "employee factors," and "value." Although similarities exist, these factors seem to be more "context-specific" than the dimensions of SERVQUAL, which may be described as being more "general" in nature.

Cross-Sectional Analysis

The next step in the analysis was to examine the correlation between over-all customer satisfaction and performance measures, and employee satisfaction and the same performance

Table 2. Relationship between Mean Over-all Customer Satisfaction, Mean Over-all Employee Satisfaction, and Measures of Restaurant Performance

Performance Measure	Correlation with Mean Overall Customer Satisfaction <i>n</i> = 432	Correlation with Mean Overall Employee Satisfaction <i>n</i> = 382
Sales volume	0.04	0.05
Number of customers	0.01	0.07
Net profits	0.05	0.07

measures. These results are presented in Table 2. The relationship between over-all customer satisfaction and several financial performance measures is very weak ($r = 0.01$ to 0.05). The same is true for employee satisfaction ($r = 0.05$ to 0.07). These results support *H1* and *H3* and show that there is no significant (either positive or negative) relationship between satisfaction and performance in the same period.

Previous research has shown a positive relationship between customer satisfaction and employee satisfaction. The same result was found in this research. The correlation between customer satisfaction and employee satisfaction was 0.53 (significant at the .05 level), and hence, support was found for *H4*.

Next, to get another perspective on *H4*, as seen in Table 3, the 382 restaurants were divided into three categories based upon customer satisfaction scores. The first group, comprising about one-quarter of the restaurants, had over-all customer satisfaction scores at least 0.1 above the over-all chain average. The second category consisted of those restaurants (approximately half) that had customer satisfaction scores within plus or minus 0.1 of the overall chain average. The third group consisted of restaurants with customer satisfaction scores at least 0.1 below the chain average. Although continuous analysis was used to test *H4*, this analysis was done at the request of the management, who generally prefer such discrete analyses.

Mean employee satisfaction, measured using the same five-

point satisfaction scale, was above average (4.4 versus average of 4.2) for those restaurants with higher than average customer satisfaction and was below average (4.0 versus average of 4.2) for those restaurants with below average customer satisfaction scores. This result was not simply an artifact of a small group of either very satisfied or very dissatisfied employees. More than three-quarters of the restaurants with above average employee satisfaction also had above average customer satisfaction. Conversely, of the restaurants with below average customer satisfaction, only 21 percent had employee–customer satisfaction above average. Hence, this discrete analysis also shows a positive relationship between customer satisfaction and employee satisfaction.

Hypothesis 2 states that, although a relationship may not be seen in performance measures, the impact of customer satisfaction is seen in behavioral intention measures. This study provides support for this hypothesis. Specifically, the correlation between mean over-all customer satisfaction and likelihood of returning to the restaurant is 0.68, providing strong support for *H2*. Apparently, customer satisfaction, although not influencing sales and profits immediately, does affect consumers' intentions to return in the future.

To summarize, the results show a significant positive relationship between service quality attributes and over-all customer satisfaction, no significant relationship between customer satisfaction and financial performance measures, no significant relationship between employee satisfaction and financial performance measures, a significant relationship between customer satisfaction and behavioral intent, and a significant positive relationship between customer satisfaction and employee satisfaction at any one point in time (cross-sectional analysis).

Time Series Analysis

To examine *H5*, a change in customer satisfaction will be correlated with a change in financial performance, a time series analysis was conducted. Eight waves of customer satisfaction data were available, and it was decided to collapse these data into a base period and follow-up periods. The first

Table 3. Relationship Between Customer Satisfaction and Employee Satisfaction

Group	Number of Restaurants	Mean Employee Satisfaction (on a 5-pt. scale)	Percentage of Restaurants with Employee Satisfaction Above Average
Restaurants with mean over-all customer satisfaction scores above chain average ($>.1$)	100	4.4	78
Restaurants with mean over-all customer satisfaction scores at the chain average ($\leq \pm .1$)	192	4.1	46
Restaurants with mean over-all customer satisfaction scores below chain average ($>.1$)	90	4.0	21
Total	382	Average = 4.2	50

Table 4. Impact of Change in Over-all Customer Satisfaction (t to $t + 1$) on Change in Restaurant Profits ($t + 1$ to $t + 2$)

Group	Number of Restaurants	Increase in Average Monthly Profits (%)	Change in Profits vs. Average
Restaurants with mean over-all customer satisfaction increasing ($>.1$)	144	9.8	+30
Restaurants with mean over-all customer satisfaction at same level ($\leq \pm .1$)	112	7.6	+1
Restaurants with mean over-all customer satisfaction decreasing ($>.1$)	176	5.6	–26
Total	432	Average = 7.5	

two waves were combined and used as a base measure (t) and waves 3–4, 5–6, and 7–8 were combined to form three follow-up measures ($t + 1$), ($t + 2$), and ($t + 3$), respectively. The main reason for combining the data in this manner is that previous research has shown that there are minor fluctuations in customer satisfaction scores over short terms (Peterson and Wilson, 1992). Combining two waves into one measure may eliminate short-term fluctuations in these scores. The correlation between change in customer satisfaction (from t to $t + 1$) and change in profits (from $t + 1$ to $t + 2$) was 0.42 (significant at the .05 level), thus supporting $H5$. Other correlations (e.g., change in customer satisfaction (from $t + 1$ to $t + 2$) and change in profits (from $t + 2$ to $t + 3$) produced similar significant results (correlation of 0.39), and, hence, we can safely conclude that our support for $H5$ is not an artifact of our specific base and follow-up measures.

Although the correlation analysis views satisfaction and performance as continuous variables, at the recommendation of the restaurant management, a discrete (categorical) analysis was also performed. The restaurants were divided into three groups based on change in customer satisfaction scores. The groups were formed so that the group sizes were about the same. The first group, representing one-third of the restaurants, were those with mean over-all customer satisfaction scores increasing by greater than 0.1 from t to $t + 1$. The second group, consisting of almost one-third of the restaurants, were those with stable mean over-all customer satisfaction scores, with a change of equal to or less than 0.1 over the two time periods. The final group of restaurants had over-all customer satisfaction decreasing by greater than 0.1 from the base period t to the follow-up period $t + 1$.

As shown in Table 4, the increase in average monthly profits was greatest for those restaurants with increasing customer satisfaction scores (+ 9.8%) and lowest for those restaurants where customer satisfaction decreased (average monthly profits up 5.6%). The group with stable scores had profit increases right at the chain average. Put another way, those restaurants with an increase in customer satisfaction had profits 30% above chain average. Table 4 also shows that among restaurants in this group, 83% had profit increases above chain average. Those with stable customer satisfaction had profits

1% above average, with 53% of these restaurants having profit increases above the chain average. For those restaurants with decreasing customer satisfaction, the average change in profits was 26% below the chain average, with only 20% of these having profit increases above the chain average. Interestingly, the mean starting customer satisfaction (at t) for all three groups was about the same, and there was no significant difference in the type of restaurants (e.g., mall unit, downtown unit, or free-standing unit) that comprised each group.

In summary, a positive relationship between service attributes and customer satisfaction, lack of relationship between customer satisfaction and profit and employee satisfaction and profit, a positive relationship between customer satisfaction and behavior intent, and a positive relationship between customer satisfaction and employee satisfaction were reported using cross-sectional analysis. The additional finding, using time series analysis, is the positive relationship between the changing customer satisfaction in previous time periods and change in current profit/sales. The researchers also propose the following:

- P1: There is a positive relationship between a change in employee satisfaction in previous time periods and a change in current profits/sales.
- P2: There is a positive relationship between a change in customer satisfaction in previous time periods and a change in current employee satisfaction.

However, no data were available to confirm these. Longitudinal data collection on employee satisfaction was not conducted and is left for future research. Figure 2 illustrates all the hypothesized/proposed relationships and summarizes the research findings.

Discussion

Conclusions and Limitations

Customer satisfaction has had an intuitive appeal to management since it first surfaced as a topic in the academic literature. Satisfied customers should become loyal customers and attract other potential loyal customers, and this loyalty should be

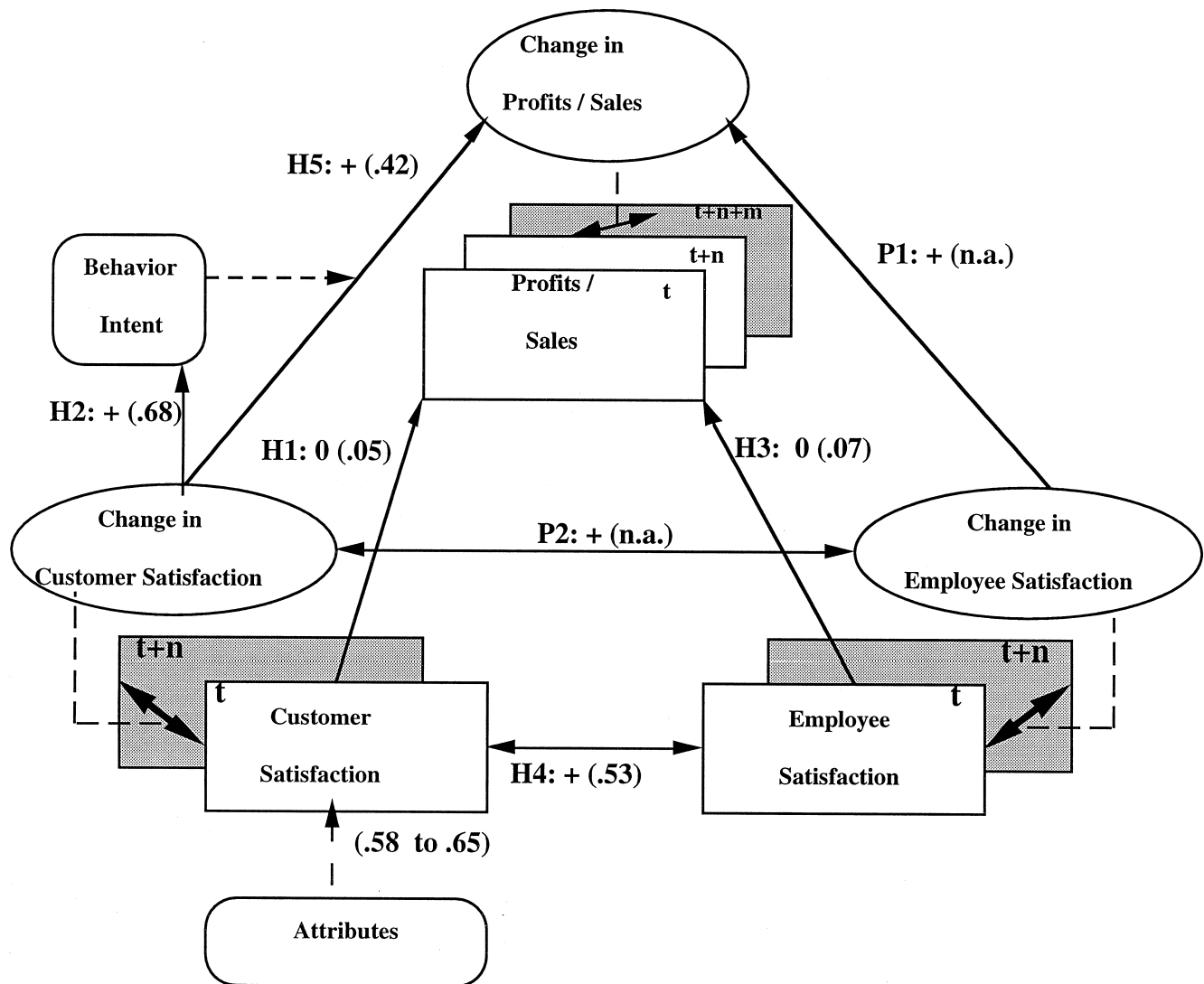


Figure 2. Relationship between (change in) customer satisfaction, (change in) employee satisfaction and (change in) profits/sales (hypothesized relationship [empirical finding]). For each of the relationships, the hypothesized effect is followed by the study's finding in parentheses. For example, the hypothesized direction for H5 is positive and the study's empirical finding is a correlation of 0.42.

reflected in the financial performance of the company. However, research into this relationship between customer satisfaction and financial performance, and other closely related relationships, has yielded conflicting and inconclusive findings. Could all this attention on customer satisfaction be only fad? Or does it actually have the impact that, intuitively, it seems it should have? This study shows that the latter is the case. Customer satisfaction is positively reflected in profits, but this relationship only becomes apparent through the examination of longitudinal data.

A time series analysis of satisfaction and performance for a national chain of fast-food restaurants was conducted. By examining these relationships for only one time period t , we might erroneously conclude that customer satisfaction is, indeed, an unimportant managerial concern. As the results of this study indicate, although there is a positive relationship

between customer satisfaction and employee satisfaction in any given time period, there is no relationship between customer satisfaction and profits/sales, and employee satisfaction and profits/sales. However, the true relationship between customer satisfaction and profits/sales emerges when changes in customer satisfaction and profits/sales are examined over a period of time, in this case, 12 months. Analysis of time-series data reveals that a positive relationship between changes in customer satisfaction and changes in the financial performance of the firm emerge and that customer satisfaction does, indeed, have the effect that initially spurred the interest in this research stream.

This study has several other features in addition to the longitudinal assessment previously discussed. First, the research began with an analysis of the attributes that consumers deem important in the determination of service quality and,

in turn, customer satisfaction. Second, both employee satisfaction and customer satisfaction are considered, and the relationship between the two measures of satisfaction is explored. Third, the impact of customer satisfaction on multiple performance measures is evaluated. Finally, the sample size—342,308 customers, 3,099 employees, and 12 months of performance measures—is large enough to be representative of the population at hand and to minimize sampling errors.

This study does have limitations. Data were not available to examine two propositions (P1 and P2). Given the parallels between employee satisfaction and customer satisfaction previously discussed, it is the authors' contention that future examination of these relationships will confirm the propositions.

The hypothesized relationships were examined in one specific industry, thus limiting its generalizability. Although it is expected that this relationship will be found across industries, future research must verify that these findings are not germane only to the fast-food industry. Fast-food restaurants typically are independently owned and operated and, therefore, may have variability in their policies and procedures. In addition, food is an item for which there is substantial variability in preferences across geographical areas, such as greater preference for chicken in the southern part of the United States or greater preference for seafood in Southeast Asia, and this may have an impact on the results. With its heavy promotion orientation, fast-food restaurant visits may be more price-promotion driven than is typical. Finally, given extensive distribution and presence virtually everywhere, more conveniently located alternatives are available to consumers than is true for the typical retailer.

Furthermore, no information was available on what strategies individual store operators used to increase satisfaction; hence, we cannot report what was driving changes in satisfaction. It is possible that the initiation of a satisfaction-measurement program and quality audit served as a motivator for store operators to increase satisfaction.

Additionally, profits are a result of several factors including satisfaction. However, the investigation of these other factors was not conducted in this study. In many ways this is similar to the problem faced by advertising researchers who try to model sales as a function of advertising.

Finally, this study utilized single-item indicators for three of the variables under consideration—customer satisfaction, employee satisfaction, and profitability/sales. As previously discussed, this form of measurement is viewed favorably by researchers. However, it does limit the analysis that could be conducted, and, as a result, certain analytical techniques (e.g., Lisrel), which could perhaps enhance the insights from the findings, could not be utilized.

Managerial Implications

There are a number of important managerial implications that can be derived from this study. The first, and most important, is that management should exercise patience in evaluating the

impact of customer satisfaction programs. Although there is always pressure to get a quick return on investment when implementing customer satisfaction programs, it is clear that the real effects of such programs take place over time. Examining results at any given point in time can cause a manager to draw incorrect conclusions. Initially, attempts to increase customer satisfaction may require an outlay of money, and may therefore, adversely affect the short-term financial performance of the firm. Furthermore, financial performance at any one time period seems to be a function of several other factors (e.g., short-term sales promotions, economic, environmental, and firms-specific factors), instead of a function of customer satisfaction. Thus, a longer-term view is appropriate in evaluating the results of customer satisfaction programs.

Given the increase in profitability attributable to improving quality and customer satisfaction, it is easier to justify investments in such programs. Thus, management should look more favorably upon such investments as improvements in technology, training, and any other undertakings that might raise consumers' perceptions of customer satisfaction by raising their perceptions of the quality attributes that contribute to customer satisfaction. The evidence shows that there can be a good return on such investments over time.

The results reported here imply that continuous improvement is a wise strategy. Of course, it is important to improve on those dimensions that are important to customers versus improvements that are not noticeable or relevant to customers. Therefore, considerable up-front investment geared to determining the attributes most relevant to improving customer satisfaction is justified. In the case of this chain of fast-food restaurants, continuous improvement on the nine service quality attributes should be rewarded in the long term.

Also, the results reported above confirmed previous findings that there is a positive relationship between employee satisfaction and customer satisfaction. Thus, investments in employee education and training should be worthwhile, also. It is important that employees understand the drivers of customer satisfaction, and training efforts should emphasize the attributes most important to customers. Although this study was not able to evaluate the relationship between employee satisfaction and customer satisfaction over time, it would seem reasonable that improvements in employee satisfaction could have delayed effects on customer satisfaction in the same way that improvements in customer satisfaction lead to increases in profitability over time. This relationship, however, must be confirmed through future research.

Similarly, it is important to remember that attempts to increase customer satisfaction also may have a positive impact on employee satisfaction. If customers are satisfied, employees will not have to listen to complaints and may feel better about their jobs, leading to increased employee retention and reduction in the cost associated with hiring new employees. Thus, there may be an even further positive impact on profitability over time.

Finally, customer satisfaction can be viewed as an advance

warning system. The impact of a decline in satisfaction may not be felt immediately; therefore, it may not warn a company. However, the impact will eventually be felt in the future, as the results of this study would suggest. A firm that understands the signal being sent by declining customer satisfaction scores can choose to take action to reverse the decline before it affects the company's financial performance. The firm that does not understand the signal will end up being reactive, at best, when financial performance begins to decline.

Research Implications

Because of the difficulty in obtaining longitudinal or time-series data, cross-sectional data are widely used in marketing research. However, as illustrated by this study, time-series may be valuable when attempting to uncover what is actually happening in the marketplace. Future researchers in all areas of marketing, not only in the area of satisfaction, should realize the richness of time-series data and consider their collection and use whenever possible.

In addition, numerous research implications exist, specifically for the satisfaction researcher. First, in an attempt to enhance the generalizability of the findings of this study, these same hypotheses and propositions should be explored in the context of other industries, not only in a consumer setting, but also in a business-to-business setting. Furthermore, replications of this research using other fast-food restaurants would be useful. For the national chain of fast-food restaurants researched in this study, over-all customer satisfaction was very high and positively skewed. In other applications, where we might expect a higher variance in customer satisfaction, the longitudinal relationship between satisfaction and profitability might be even more prominent.

Second, a 12-month (eight wave) longitudinal examination of the relationship between customer satisfaction and sales/profits produced strong support for the importance of customer satisfaction. Future research calls for an examination of this relationship over longer periods of time with the belief that the support for the continued emphasis on customer satisfaction will be even more dramatic. Moreover, such examination over longer periods of time will enable application of time-series analysis to uncover the time lag between increase in customer satisfaction and increase in sales.

As outlined in the theoretical background, cross-sectional research dealing with the relationship between satisfaction and performance has yielded conflicting results. Researchers should attempt to explain these results by using covariates. This research will aid in identifying other factors affecting this relationship at a given point.

Also, future researchers should employ multi-item constructs, when possible. By using multi-item constructs, more sophisticated methods of analysis can be employed, thus building a stronger case for the importance of satisfaction.

Researchers should also consider broader measures of performance beyond the financial measures of sales and profits.

We can argue that a such measure as market share is just as meaningful. Also, the relationship among these various measures of performance should be considered. Just as advertising researchers have developed surrogates of sales/profits by looking at communication effectiveness, it may be meaningful to develop surrogates of financial performance in the satisfaction research, also. It may be easier to link satisfaction to these surrogates of financial performance.

The focus of this research dealt with the link between satisfaction and financial performance. Future researchers might consider examining the link between each of the various quality attributes and performance. Perhaps certain attributes have a stronger impact on financial performance. Or, perhaps different lags exist for each of the attributes' impact on performance.

Finally, in situations in which satisfaction has declined and negatively affected financial performance, researchers should consider conducting a switching analysis. It would be beneficial to determine which consumers are defecting and causing this decline. Is it the loyal customers or infrequent customers who change their behavior when dissatisfied?

References

- Anderson, Eugene W., Fornell, Claes, and Lehmann, Donald R.: Customer Satisfaction, Market Share, and Profitability: Findings From Sweden. *Journal of Marketing* 58 (July 1994): 53-66.
- Anderson, Eugene W., and Sullivan, Mary W.: The Antecedents and Consequences of Customer Satisfaction for Firms. *Marketing Science* 12 (Spring 1993): 125-143.
- Band, William: Measuring the High Payoff From Satisfied Customers. *Sales & Marketing Management in Canada* (December 1988): 23-25.
- Bearden, William O., and Teel, Jesse E.: Selected Determinants of Consumer Satisfaction and Complaint Reports. *Journal of Marketing Research* 20 (February 1983): 21-28.
- Blasier, John, and Snyder, Joel J.: Why I'm Cautious about Customer Service. *Chief Executive* (June 1992): 36-39.
- Bitner, Mary Jo, Booms, B., and Tetreault, M.: The Service Encounter: Diagnosing Favorable and Unfavorable Incidents. *Journal of Marketing* 54 (January 1990): 71-84.
- Bolton, Ruth N., and Drew, James H.: A Longitudinal Analysis of the Impact of Service Changes on Customer Attitude. *Journal of Marketing* 55 (January 1991): 1-9.
- Boulding, William, Kalra, Ajay, Staelin, Richard, and Zeithaml, Valarie A.: A Dynamic Process Model of Survey Quality: From Expectations to Behavioral Intentions. *Journal of Marketing Research* 30 (February 1993): 7-27.
- Cronin, J. Joseph, and Taylor, Steven A.: Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing* 56 (1992): 55-68.
- Dabholkar, Pratibha A., and Thorpe, Dayle I.: Does Customer Satisfaction Predict Shoppers Intentions? *Journal of Consumer Satisfaction, Dissatisfaction, and Complaining Behavior* 7 (1994): 161-171.
- Fornell, Claes: A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing* 56 (January 1992): 6-21.
- Labarbera, Priscilla A., and Mazursky, David: A Longitudinal Assess-

- ment of Consumer Satisfaction/Dissatisfaction: The Dynamic Aspect of the Cognitive Process. *Journal of Marketing Research* 20 (November 1983): 393-404.
- Loro, Laura: Customer is Always Right. *Advertising age* (February 10, 1992): 25.
- Nelson, Eugene C., Rust, Roland T., Zahorik, Anthony, Rose, Robin L., Batalden, Paul, and Siemanski, Beth Ann: Do Patient Perceptions of Quality Relate to Hospital Financial Performance? *Journal of Health Care Marketing* (December 1992): 6-13.
- Oliver, Richard L.: A Conceptual Model of Service Quality and Service Satisfaction: Compatible Goals, Different Concepts, in *Advances in Services Marketing and Management*, Teresa A. Swartz, David E. Bowen, and Stephen W. Brown, eds., JAI, Greenwich, CT. 1993.
- Oliver, Richard L., and Swan, John E.: Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach. *Journal of Marketing* 53 (April 1989): 21-35.
- Oliver, Richard, L.: A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research* 27 (November 1980): 460-469.
- Paradise-Tornow, Carol A.: Management Effectiveness, Service Quality and Organizational Performance in Banks. *Human Resource Planning* 14 (1991): 129-139.
- Parasuraman, A., Zeithaml, Valarie A., and Berry, Leonard L.: A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing* 49 (Fall 1985): 41-50.
- Parducci, Allen: Category Judgment: A Range-Frequency Model. *Psychological Review* 72 (November 1965): 407-418.
- Peterson, Robert A., and Wilson, William R.: Measuring Customer Satisfaction: Fact and Artifact. *Journal of the Academy of Marketing Science* 20 (Winter 1992): 61-71.
- Quinlan, Michael R., Zemke, Ron, Snider, Jim, Reinemund, Steven S., Ayling, Robert, Singh, Karmjit, Perkins, James A., Antonini, Joseph E., and Loeb, Walter F.: How Does Service Drive the Service Company? *Harvard Business Review* (November-December 1991): 146-158.
- Rust, Roland T., and Zahorik, Anthony J.: Customer Satisfaction, Customer Retention, and Market Share. *Journal of Retailing* 69 (Summer 1993): 193-215.
- Rust, Roland T., Zahorik, Anthony J., and Keiningham, T.: Return on Quality (ROQ): Making Service Quality Financially Accountable. *Journal of Marketing* 59 (April 1995): 58-70.
- Rust, Roland T., and Zahorik, Anthony J.: The Value of Customer Satisfaction. Working paper, Vanderbilt University, June, 1991.
- Schlesinger, Leonard A., and Zornitsky, Jeffrey: Job Satisfaction, Service Capability, and Customer Satisfaction: An Examination of Linkages and Management Implications. *Human Resource Planning* 14 (1991): 141-149.
- Schneider, Benjamin: Service Quality and Profits: Can You Have Your Cake and Eat It Too? *Human Resource Planning* 14 (1991): 151-157.
- Schneider, Benjamin, and Bowen, David E.: Employee and Customer Perceptions of Service in Banks: Replication and Extension. *Journal of Applied Psychology* 70 (1985): 423-433.
- Schneider, Benjamin, Parkington, J. J., and Buxton, V. M.: Employee and Customer Perceptions of Service in Banks. *Administrative Science Quarterly* (June 1980).
- Schwartz, Norbert, Hippler, Hans J., Deutsch, Brigitte, and Strack, Fritz: Response Scales: Effects of Category Range on Reported Behavior and Comparative Judgments. *Public Opinion Quarterly* 49 (Fall 1985): 388-395.
- Shoultz, Donald: Service Firms Are Customer Driven: Study. *American Banker* (February 23, 1989): 17-18.
- Swan, John E.: Consumer Satisfaction with a Retail Store Related to the Fulfillment of Expectations on an Initial Shopping Trip, in *Consumer Satisfaction, Dissatisfaction, and Complaining Behavior*, Ralph L. Day, ed., Indiana University Press, Bloomington, IN. 1977, pp. 10-17.
- Swan, John E., and Trawick, I. Frederick: Disconfirmation of Expectations and Satisfaction with a Retail Service. *Journal of Retailing* 57 (Fall 1981): 49-67.
- TARP: *Consumer Complaint Handling in America: Final Report*, United States Department of Health, Education, and Welfare, Washington DC. 1979.
- TARP: *Consumer Complaint Handling in America: An Update Study*, United States Department of Health, Education, and Welfare, Washington, DC. 1986.
- Tornow, Walter W., and Wiley, Jack W.: Service Quality and Management Practices: A Look at Employee Attitudes, Customer Satisfaction, and Bottom-Line Consequences. *Human Resource Planning* 14 (1991): 105-115.
- Wedell, Douglas H., and Parducci, Allen: The Category Effect in Social Judgment: Experimental Ratings of Happiness. *Journal of Personality and Social Psychology* 55 (September 1988): 341-356.
- Westbrook, R., and Oliver, R.: The Dimensionality of Consumption Emotion Patterns and Consumer Satisfaction. *Journal of Consumer Research* 18 (June 1991): 84-91.
- Wiley, Jack W.: Customer Satisfaction: A Supportive Work Environment and Its Financial Costs. *Human Resource Planning* 14 (1991): 117-127.
- Woodside, A., Frey, L., and Daly, R.: Linking Service Quality, Customer Satisfaction, and Behavioral Intention. *Journal of Health Care Marketing* 9 (December 1989): 5-17.
- Zahorik, Anthony J., and Rust, Roland T.: Modeling the Impact of Service Quality Profitability, in *Advances in Services Marketing and Management*, JAI, Greenwich, CT. 1992.
- Zeithaml, Valarie A., Parasuraman, A., and Berry, Leonard L.: *Delivering Quality Service*, The Free Press, New York. 1990.