A RE-EXAMINATION OF THE SIGNIFICANCE OF EMPLOYEE JOB ATTITUDES ON CUSTOMER SATISFACTION IN THE SERVICES SECTOR

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Past research has shown that a number of organizational and human resources practices can positively affect customer attitudes about service quality. The present study investigates the effect of employee attitudes on customer satisfaction at the individual employee level of analysis in one service industry: higher education. The use of the faculty-student setting allowed this study to be among the first to empirically link the perceptions of both groups (employees and customers) at the individual level of analysis. Results suggest that employee job satisfaction has a significant effect on service quality perceptions in this industry.

The "marketing concept" often studied in business schools today argues that customer needs must be the central focus of the firm's definition of its business purpose, and that profits are produced through creating customer satisfaction. Therefore, winning business strategies should start with an analysis of the company's actual performance compared to customer expectations of performance, especially in service industries. However, in reality, even business schools espousing such philosophies have typically focused more on their own needs and considered students only as an input to satisfying the institution's needs (Snipes, Oswald, & Hortman, 1997; Conant, Brown & Mokwa, 1985). This way of doing business is changing. With the demographic, political and economic changes in today's environment, successful colleges in the future will be the ones utilizing more of a marketing orientation, rather than a production or selling orientation. As pointed out by Shim & Morgan (1990), "due to the end of the baby boom and changing societal priorities, a marketing orientation should be considered by colleges and universities as one of the keys to their future" (p. 29).

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As noted by Wiley (1991), researchers from both the disciplines of organizational behavior and marketing are increasing their focus on the antecedents, as well as the outcomes, associated with the achievement of high levels of customer satisfaction. Past research has shown that a number of organizational and human resource practices positively affect customer attitudes about service (Hartline & Ferrell, 1996; Hallowell, Schlesinger, & Zornitsky, 1996). In these studies, it has been shown that managerial practices to improve employee attitudes regarding the company can also improve customer attitudes. However, as noted by Tornow and Wiley (1991), service organizations in their operating practices typically do not consider customers and employees within the same planning or evaluation context. This is unfortunate, because an increasing amount of research supports the notion that what happens to employees inside a firm affects what happens to customers outside a firm (Hartline & Ferrell, 1996; Ulrich, Halbrook, Stuchlik & Thorpe, 1991). Understanding employee attitudes and their impact on performance can encourage management to find methods to foster those employee attitudes that will, in turn, improve customer service.

To date, only a few empirical studies have been conducted to investigate the link between employee job attitudes and customer satisfaction. By capturing perceptions across employees and customers, this study is among the first to empirically link the perceptions of both groups *at the individual level of analysis.* Most of the studies that have been conducted involve *group-level* data rather than *individual-level* data. A drawback of aggregating or "grouping" data at the organization or department level is that the effects of individual employees may be negated. Thus, the true effects of variables may be somewhat distorted. For example, when the data are aggregated, the effect of a negative employee on his/her customers may be "canceled out" by the effect of positive employees and, thus, the "true" portion of the variance explained by employee job satisfaction cannot be accurately determined.

Therefore, the primary contribution of this study is in its design. Prior research has utilized group-level data, primarily at the organizational level of analysis, possibly because of the difficulty in matching responses across respondent groups (i.e., employees and their customers). In this study, the use of the academic setting allowed the variables to be studied at the *individual* level of analysis, such that the individual instructor ("employee") ratings could be paired with his/her respective student ("customer") ratings. This type of research design may have allowed for a more accurate analysis of the true effects of each variable.

Another goal of this study was to investigate the effects of *specific* facets of job satisfaction (e.g., satisfaction with pay, satisfaction with the work itself, etc.) in order to determine which ones exert the most influence on service quality. The use of facet scales may offer more information to managers on the true relations between job satisfaction and behavioral outcomes than global job satisfaction scales.

A last purpose of this study was to test a causal model of these relationships. The use of a structural equations model allows us to better determine the causal relationships between the variables. Structural equations modeling improves upon more traditional types of data analysis in three basic ways: (1) it allows for the estimation of multiple and interrelated dependence relationships; (2) it gives the researcher the ability to represent unobserved (latent) constructs; and (3) it increases the reliability of measures through the use of separate measurement and structural models (Hair, Anderson, Tatham, & Black, 1992).

CONCEPTUAL FRAMEWORK

Research on Employee Attitudes and Customer Satisfaction

Several studies have suggested that certain employee attitudes are positively correlated to customer attitudes in both service and manufacturing industries (Hartline & Ferrell, 1993; Reynierse & Harker, 1991; Schneider & Bowen, 1992). For example, one survey of employees at Barnett Bank found that customer satisfaction was positively correlated to employees' perceptions that the manager supported employees with new ideas on customer service, met regularly with them to discuss work performance goals, encouraged cooperation in the service of customers and took time to help new employees learn (Jones, 1991).

In an academic organization, it is possible that student satisfaction may be significantly impacted by faculty job satisfaction. Job satisfaction is probably the most studied attitudinal variable in the organizational research literature (Brown & Peterson, 1993). Job satisfaction has been perceived as an important employee attitude by managers and organizational researchers, and has been consistently linked to organizational commitment, turnover and intent to leave (Tett & Meyer, 1993). It is also a frequently studied variable in the service quality literature (see Hartline & Ferrell, 1996). In fact, in a service organization, it is possible that employee job satisfaction has its biggest impact on the organization in the area of *customer* satisfaction.

Research suggests that overall job satisfaction is the primary determinant of both service quality and perceived value (Hartline & Ferrell, 1996). Additionally, research indicates that job satisfaction is positively correlated with employee perceptions of service quality (Schlesinger & Zornitsky, 1991) and customer ratings of customer service (Reynierse & Harker, 1991). Moreover, research supports an assertion that employees can predict customer perceptions of many determinants of service quality (Reynierse & Harker, 1991), and this prediction may have a significant affect on their job satisfaction.

One variable which may moderate the relationship between job satisfaction and performance may be employee self-efficacy, which has been found to be positively correlated to job satisfaction in previous research (see Bagozzi, 1980; Brown & Peterson, 1993). The concept of self-efficacy was originally introduced as part of Bandura's (1977) social learning theory. Bandura defined perceived self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). He further suggested that self-efficacy is not as much concerned with the actual skills one has, but with the "judgments of what one can do with whatever skills one possesses" (p. 391). Therefore, self-efficacy can be compared to self-esteem, but it is more task specific than self-esteem.

Self-efficacy is important because it has been shown to affect employee performance (see Lee & Bobko, 1994). Another reason self-efficacy is important is because it may affect job satisfaction in that employees that don't feel they are competent enough to perform well may experience a good deal of unhappiness and frustration at work. In fact, several studies have found significant correlation's between feelings of self-efficacy and job satisfaction (see Riggs & Knight, 1994). Self-efficacy has also been shown to be positively correlated with employee performance (Locke & Latham, 1990) and customer service quality (Hartline & Ferrell, 1993; Parasuraman, Berry, & Zeithaml, 1990). Therefore, self-efficacy is an important individual difference variable that should be included in models investigating the job satisfaction-performance relationship.

Customer Satisfaction and Service Quality

Some marketing researchers have proposed that the benefits of increased customer satisfaction come in two basic forms: the improved ability of the firm to attract new customers, and the ability of the firm to maintain repeat customers (Rust, Zahorik, & Keiningham, 1995). In fact, prior research has found that small increases in current

customer retention rates can have a dramatic effect on the profits of a company (Dawkins & Reichheld, 1990; Fornell & Wernerfelt, 1988; Reichheld & Sasser, 1990). This is because existing customers tend to purchase more than new customers (see Rose, 1990), the efficiencies in dealing with them are greater, and the selling costs are much lower (see Rust, et. al., 1995; Peters, 1988). Also, research shows that service quality (Bitner, 1990) and overall service satisfaction (Cronin & Taylor, 1992) can improve customers' intentions to stay with the firm. Customer satisfaction, then, could have a substantial financial impact on firms, especially in service industries.

In 1985, Parasuraman, Zeithaml, and Berry suggested that perceived service quality is similar to a "global judgment or attitude" (p. 42). Their conceptual definition of the service quality construct was that it is a comparison to excellence in service encounters by the customer (Taylor and Baker, 1994). Exploratory research by Parasuraman, Zeithaml and Berry (1985) revealed that the criteria used by consumers in assessing service quality fit 10 dimensions. These dimensions are tangibles, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding the customer, and access to service. Parasuraman et al. (1988) developed a scale, called SERVQUAL, to measure service quality by examining the "gap" between the customer's expectation of service quality and his/her perception of the service actually

received on each of these 10 dimensions. Through empirical testing, the authors narrowed the initial 10 dimensions of service quality to 22 items making up five basic dimensions: tangibles, reliability, responsiveness, assurance and empathy.

It is not clear, however, to what extent these determinants capture the construct of customer satisfaction. In fact, it might seem that the constructs are quite similar, and some research supports this notion (Schutz & Casey, 1983). However, the authors of SERVQUAL (Parasuraman et al., 1988) were careful to distinguish between these two constructs, and to stress that their scale was designed to measure service quality. Additionally, a review of the literature suggests that there appears to be relative consensus among marketing researchers that service quality and consumer satisfaction are separate and unique constructs, but they share a close relationship (Taylor & Baker, 1994; Cronin & Taylor, 1992). The weight of the evidence in the services literature supports the position that service quality and consumer satisfaction are best conceptualized as unique constructs that should not be treated as equivalents in models of consumer decision making. Rust and Oliver (1994, p. 2) most recently describe the dominant model of customer satisfaction in the services literature as follows:

> In brief, customer satisfaction is a summary cognitive and affective reaction to a service incident (or sometimes to a long-term service relationship). Satisfaction (or dissatisfaction) results from experiencing a service quality encounter and comparing that encounter with what was expected.

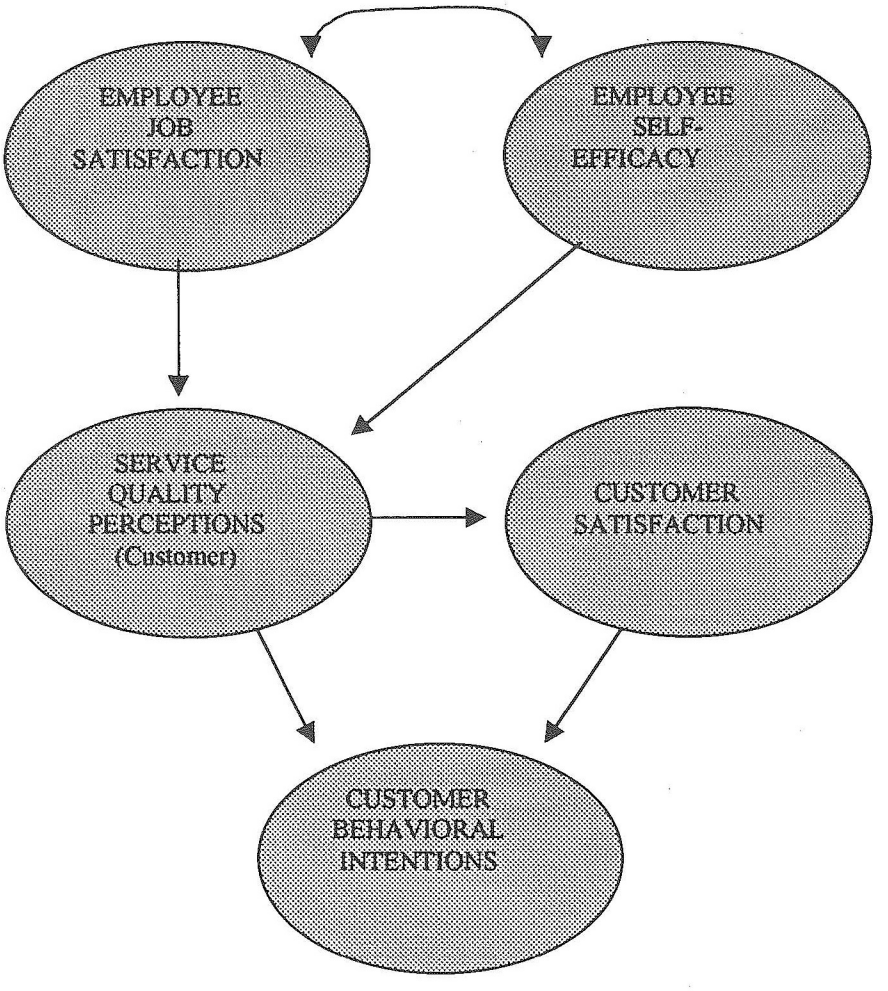
MODEL AND RESEARCH HYPOTHESES

Based on the foregoing literature review, the model indicated in Figure 1 is proposed and tested. As indicated in Figure 1, it is hypothesized that employee job satisfaction (which includes job satisfaction facets and global job satisfaction) and self-efficacy will be positively correlated and will both exert a positive effect on perceived service quality. It is also hypothesized that perceived service quality (i.e., student perceptions of the actual service rendered versus their expectations of the level of service they should receive) will exert a positive effect on student satisfaction, and that both student satisfaction and perceived service quality will exert a positive effect on student behavioral intentions (i.e., positive word-of-mouth and future purchase intentions).

The relationship between service quality and consumer satisfaction in the formation of consumers' purchase intentions and intentions to stay with the firm has been addressed in several recent studies (see Bitner, 1990; Cronin & Taylor, 1992; Taylor & Baker, 1994). Some research suggests that customer satisfaction directly affects behavioral intentions (Cronin & Taylor, 1992; Woodside, Frey, & Daly, 1989) and other research suggests that service quality directly affects consumer behavioral intentions (Bitner, 1990). It appears that the bulk of the research supports Rust and Oliver's (1994) conception of the service quality-customer satisfaction relationship: that quality is only one of the many potential service dimensions factored into customer satisfaction. It is highly likely and makes intuitive sense that both customer satisfaction and service quality affect consumers' behavioral intentions.

Figure 1

Hypothesized Structural Relationships



Based on the foregoing literature review, the following hypotheses are posited:

HYPOTHESIS #1: Perceptions of faculty service quality will have a positive and significant effect on overall student ("customer") satisfaction.

HYPOTHESIS #2: Perceptions of faculty service quality and student ("customer") satisfaction will each exert a positive and significant effect on behavioral intentions.

HYPOTHESIS #3: Job satisfaction will have a positive and significant effect on service quality.

HYPOTHESIS #4: Self-efficacy will have a significant, positive effect on service quality.

HYPOTHESIS #5: Job satisfaction and Self-efficacy will have a reciprocal relationship such that self-efficacy will exert a positive effect on job satisfaction, and vice versa.

RESEARCH METHOD

Sample

Student evaluations of faculty classroom behavior have been shown to be positively related both to faculty self-evaluations (Blackburn & Clark, 1975; Braskamp, Caulley & Costin, 1979; Marsh, 1987) and to ratings produced by external observers (Marsh, 1987). A review of the literature on faculty evaluations revealed that student evaluations of faculty have been correlated to research productivity (Feldman, 1987) and to other nonteaching facets of the faculty role (see Schneider, Hanges, Goldstein & Braverman, 1994). Therefore, student evaluations can be an accurate way of assessing faculty service quality. The faculty-student setting was used to provide the empirical basis for this research for several reasons, including: (1) teaching is a service profession and students, therefore, are consumers of this service; (2) using student evaluations of service quality may reduce the response rate bias typically found in customer satisfaction research; (3) this setting would allow the researcher to be better able to match responses across respondent types (i.e., employees and their customers) to obtain an individual-level of analysis; (4) these consumers may be able to give more accurate responses than other consumers who may feel their response will affect the employee's employment outcomes (as per research in the performance appraisal area); and (5) because of the higher level of interaction between students and faculty, students may be better able to assess employee (faculty) service quality than consumers in other industries.

Instructors from six post-secondary academic institutions located in three states were chosen for the sample. Surveys were sent to all full-time faculty in each of the six colleges inviting them to participate in the study. Customer satisfaction data was collected from their students. Several control variables were included in the study to control for differences across classes (i.e., freshmen vs. senior level classes) and across schools (see the "Control Variables" section below). Additionally, teaching-oriented colleges were chosen to allow the researcher to accurately assess the relationship between job satisfaction and customer satisfaction. In this study, the customer (or student) satisfaction scales are concerned only with the teaching quality, and do not assess research or administrative quality. Faculty in teaching-oriented colleges, such as junior colleges or technical schools, spend the majority of their time in the classroom. Therefore, it was felt that an accurate relationship between employee attitudes and customer satisfaction could be better assessed in this type of college.

Although convenience sampling was used to determine the sample, the sample is felt to be a representative one given its size (n=351) and diversity (see Table 2). All full-time faculty members from six colleges were invited to participate in the study. The colleges were located in the southeastern region of the United States. The following is a brief description of each college:

School #1: A small, two-year community college
School #2: A medium-size five-year liberal arts college
School #3: A small, five-year regional college
School #4: A medium-size vocational-technical school
School #5: A small, five-year regional college
School #6: A small, five-year regional college

Control Variables

To insure that the effects of individual or school differences would not contaminate the data, several control variables were included in the analysis. The control variables were based on a review of the literature on teaching evaluations and included *employee tenure, employee work experience, employee workload* (i.e., teaching hours per week and the number of students taught each quarter), *employee gender*, and *employee age, perceived class complexity, student GPA, student class level, student gender, student age, and student perceptions of grading fairness*. Including these variables achieves two specific purposes: (1) eliminates some systematic error outside the control of the researcher that can bias the results, and (2) accounts for differences in the responses due to unique characteristics of the respondents.

Instrument

Measuring Job Facet Satisfaction. Job satisfaction measures of all levels of specificity have been widely used and found useful in both theoretical and practical research. One approach to obtaining general measures of job satisfaction is to ask directly about overall feelings about the job, which are called *global scales*. Global scales ask the respondent to combine his or her reactions to various aspects of the job in a single, integrated response.

Rather than using measures of overall job satisfaction, such as the sum of satisfaction with several facets of the job or the sum of responses to items concerning overall satisfaction, one could focus on the relationship between separate facet satisfaction scores to performance. In fact, some research has shown that performance implications may differ depending upon the type of satisfaction under study (Schwab & Cummings, 1970). To predict job performance, it would make more sense to use more specific measures of attitudes, such as satisfaction with job facets that seem to be relevant to the particular situation (Fisher, 1980).

The Job Satisfaction Survey (JSS), developed by Spector (1985), was developed specifically for human service, public, and nonprofit sector organizations. It was developed to cover the major aspects of job satisfaction in service organizations, with the subscales (facets) being clearly distinct in their content. For each item, the respondent is asked to rate their amount of agreement or disagreement on a 7-point scale, with 1 being "disagree very much" and 7 being "agree very much." This scale adds more dimensions to the five used on the popular JDI. Past research has shown the internal consistency reliability of this scale to be fairly high for each subscale, with a coefficient alpha for the total scale of .91 (Spector, 1985).

Dependent Measures

Perceived Service Quality. The scale used in this study was the SERVQUAL scale, as modified by Hartline and Ferrell (1996). One of the most popular measures of service quality is SERVQUAL, originally developed by Parasuraman, Zeithaml and Berry (1988). SERVQUAL was originally conceived as a generic measure that could be applied to any service. It was designed to assess perceived service quality by subtracting subjects' ratings of expected level of service from their ratings of the actual level of service received with respect to each of a number of specific items representing the five dimensions of service (i.e., tangibles, reliability, responsiveness, assurance and empathy). In the original SERVQUAL instrument, the average of the difference scores making up a dimension serve as the measure of that facet, while the average score across all items serves as the overall measurement of service quality.

Several problems have been identified with the original version of SERVQUAL, including (1) the required customization of the scale to the industry being studied, (2) the problems associated with the calculation of difference scores, and (3) the number of dimensions measured by SERVQUAL. Carman (1990) found that the five SERVQUAL dimensions are not completely generic, and suggests that items on seven or eight of the original ten SERVQUAL dimensions be "retained until factor analysis shows them not to be unique" (p. 50). Based on a review of the relevant literature on teaching effectiveness surveys, it was felt that two of the original 10 dimensions, competency and communication, should be added back due to their importance in evaluating instructional service quality. In their original work, Parasuraman, Zeithaml and Berry (1985) described the "communication" dimension as "listening to customers and keeping them informed in language they can understand", and the competency dimension as "possession of the required skills and knowledge to perform the service" (p. 47). Due to the indisputable importance of these dimensions to the teaching profession, they were added back to the instrument as suggested by Carman (1990). These additions increased the total number of items from 22 to 26.

Because of the aforementioned deficiencies in calculating "difference" scores, an alternative scale was used in this study. It is basically the SERVQUAL scale, but combines consumer "expectations" and "perceptions" into one measure by asking customers whether certain aspects of service quality exceed or fall short of expectation. For example, in this study the student is asked to compare his/her perception of the class on each of the attributes against the performance level he/she believes an academic institution should deliver (i.e., expectations of performance). This scale is the same scale used in several service quality studies (e.g., Hartline & Ferrell, 1996; Babakus & Boller, 1992) and is recommended by several service quality researchers (Carman, 1990; Cronin & Taylor, 1992).

As in previous research (Hartline & Ferrell, 1993; Bolton & Drew, 1991), a separate item was added to assess overall service quality. Customers (students) will be asked to rate each of these items on a scale ranging from 1 ("much worse than I expected") to 7 ("much better than I expected"). Thus, higher scores reflect higher perceived service quality.

Customer Satisfaction. Oliver (1981) probably best explained the construct of customer satisfaction as the "summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (p. 27). This definition presents customer satisfaction as an overall feeling or emotion derived, at least partially, from a consumer's evaluation of service quality. The customer satisfaction scale used in this study matches Oliver's conceptualization of the construct (see Appendix). It is a three-item scale similar to the one used in a study by Taylor and Baker (1994), who obtained a high internal consistency reliability (alpha = .94).

Behavioral Intentions. The behavioral intentions scale used in this study includes an item for future "purchase" intentions ("I would take another class from this instructor if I could") and two items for word-of-mouth "advertising" ("I will recommend this class to my friends"). This type of scale is similar to the ones used by Taylor and Baker (1994) and Bitner (1990). Table 1 shows a summary of the scales used in this study.

Table 1

SUMMARY OF STUDY VARIABLE CHARACTERISTICS
(N=351)[a]

CONSTRUCT MEASURE	# OF ITEMS	MEAN	S.D.	ALPHA
Employee Job Satisfaction				
Satisfaction with Contingent Rewards	10	4.22	1.29	.90
Satisfaction with Co-workers	6	5.82	1.18	.87
Satisfaction with Customers	5	5.59	.93	.78
Satisfaction with Benefits	3	4.98	1.50	.85
Satisfaction with the Work Itself	6	5.89	.89	.74
Satisfaction with Pay	4	4.26	1.40	.76
Satisfaction with Operating Procedures	2	3.71	1.49	.70
Global Job Satisfaction	17	5.97	.92	.95
Employee Self-Efficacy	7	6.33	.81	.84
Perceived Service Quality[b]				
Empathy	12	5.17	.65	.97
Competence and Reliability	10	5.31	.59	.95
Tangibles of the Work Environment	4	4.77	.49	.79
Overall Quality	1	5.47	.76	--
Customer Satisfaction	3	5.48	1.49	.93
Customer Behavioral Intentions				
Future Purchase Intentions	1	5.24	.73	--
Positive Word-Of-Mouth Intentions	2	5.62	4.92	.83

[a]Total number of faculty respondents = **351**.
[b]Total number of student respondents = **8,667** (represents an average of 25 responses per instructor)

RESULTS

Sample Descriptive Statistics

The surveys were collected within the last three weeks of the academic quarter from each school. All faculty members participating in the study were located in one of six post-secondary academic institutions located in the southeast. Raw descriptive statistics shows the diversity of the sample respondents. Although convenience sampling was used to determine the sample, it was felt that the sample was a representative one given its size and diversity.

Faculty Responses

A total of 571 faculty surveys were distributed and 366 were returned for an overall response rate of 65%. No student matches were found for 15 faculty surveys and, consequently, they were discarded. This left a sample size of 351, which was 16 more than the 335 required for this study. Of the remaining 351 respondents, 61% were male and 39% were female. Eighty-five percent (85%) of the respondents were married. The respondents' average age was 49 years, and average tenure with the organization was approximately 11 years. The respondents spent an average of 14 hours each week in class teaching and eight hours each week with students outside the classroom. Table 2 shows faculty sample characteristics.

Table 2

FACULTY SAMPLE CHARACTERISTICS

Males (%)	61%
Females (%)	39%
Married (%)	85%
Single (%)	15%
Average Age	49
Average Tenure with the Organization	11 years
Average Years of Work Experience in Field	20 years
Average Hours Each Week Spent in Class Teaching	14 hours
Average Office Hours Each Week (with Students)	8 hours
Average Number of Students Taught Per Quarter	45 students

Student Responses

Approximately 15,000 student surveys were distributed and 8,871 were returned for an overall response rate of 59%. No faculty matches were found for 204 student responses and, therefore, they were discarded. This left a sample size of 8,667. Therefore, for each faculty response there was an average of approximately 25 student responses (8,667 student responses to 351 faculty responses). Prior studies, conducted at the group level, have utilized as few as nine customer responses per unit (see Hartline & Ferrell, 1993). Therefore, this amount was felt sufficient to provide an accurate assessment of the instructor's service quality. Additionally, since the average number of students taught each quarter was 45, the 25 student responses per instructor represents a student response rate of more than 50%.

Control Variable Effects

The influence of the 11 control variables was controlled by statistically removing their effects from the variance/covariance matrix (see Newcomb & Bentler, 1988). Due to the large size of the model, the control variable influences were "partialed out" rather than including them in the model. The process of partialing out control variables involves removing their effects from the variance/covariance matrix so that only the contribution of the study variables is included in the model. A partial variance/covariance matrix is used as the input for model estimation. Thus, the structural model depicts the marginal contribution of the study variables *after* the effects of the control variables have been removed.

Analysis of the Structural Model

Structural equation modeling was used to analyze the hypothesized model. The software chosen to analyze the structural equation model proposed in this research was EQS (see Bentler, 1992). The maximum likelihood method of model estimation was used in this study. A two-step structural equations modeling approach was used to test the hypotheses to assess the validity of the measurement model first, and then the hypothesized structural model. First, to test the measurement of the constructs, a confirmatory factor analysis was conducted. In this model, all constructs and stand-alone variables were allowed to covary so that a problem in model fit can be pinpointed to the measurement model. The second step involved generating a structural model that tests the research hypotheses. The goodness-of-fit of the structural model was then compared to the fit of the final confirmatory model.

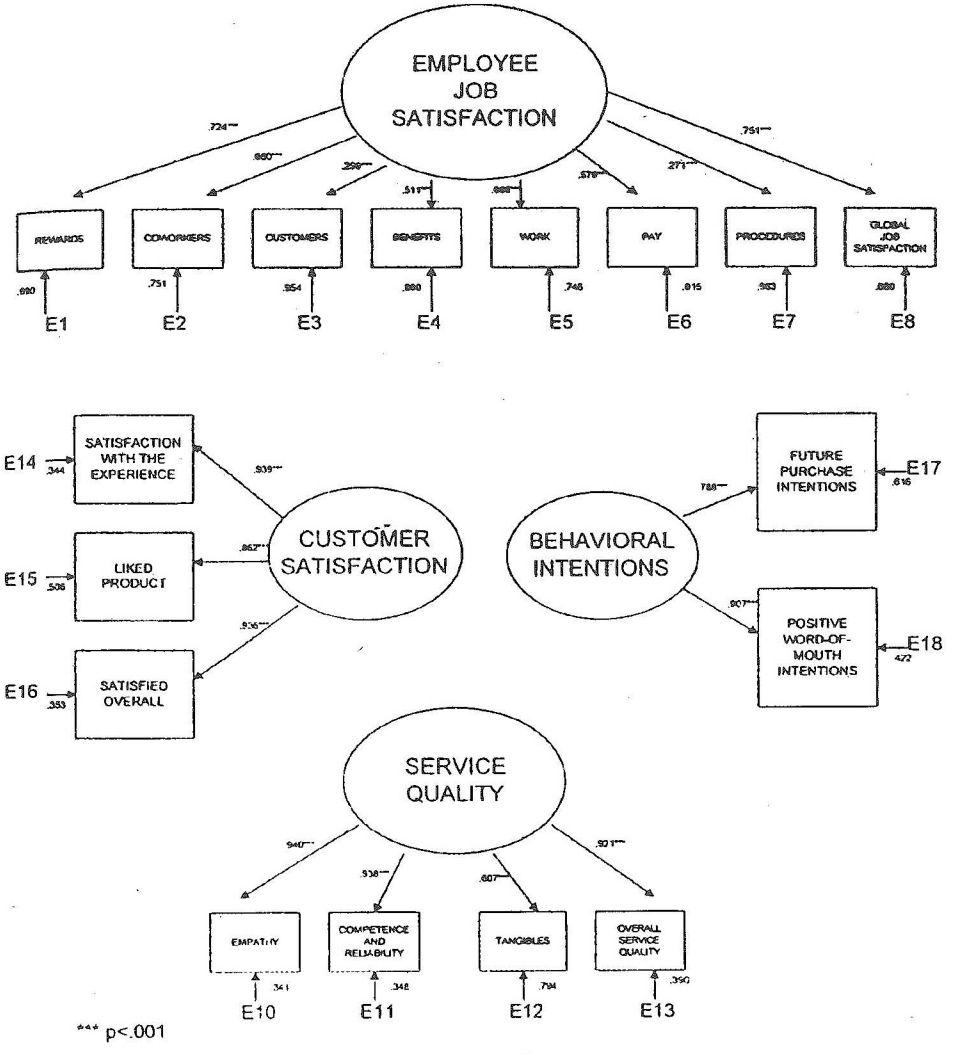
Measurement Model Analysis

Using the maximum likelihood method of estimation, an initial confirmatory factor analysis (CFA) was run that (a) fixed factor variances at one, (b) allowed all latent constructs to correlate freely, and (c) freed all hypothesized factor loadings. As stated by Byrne (1994), "the focal point in analyzing structural equation models is the extent to which the hypothesized model "fits" or adequately describes the sample data" (p. 53).

The initial confirmatory factor ("CFA") model produced an average absolute standardized residuals of .0541, and the plot of the distribution of standardized residuals looked to be fairly normal (slightly skewed to the left). All of the indicators loaded significantly on the factors they were intended to represent, providing evidence of convergent validity. The NFI (Normed Fit Index) and CFI (Comparative Fit Index) indices were fairly large (.86 and .88, respectively), suggesting that modifications to the model should yield an acceptable fit. Typically, the modifications suggested by researchers include correlating error terms, which may be correlated due to method effects such as common method variance (see Bentler & Chou, 1987). A CFI of .88 suggests there is some degree of misfit in the model. Ideally, one would want the CFI to be greater than .90.

By examining selected Lagrange multiplier modification indices, correlations among eight pairs of measured-variable residuals were added to the model. This practice is suggested by Bentler (1992) to improve the confirmatory factor ("CFA") model fit. Some of these correlated residuals reflect method or response effects between variables measured in similar formats (such as common method variance). These modifications resulted in a model that adequately reflected the data (CFI = .92). Additionally, this final CFA model was a significant improvement over the initial CFA model. As pointed out by Byrne (1994), "although the Normed Fit Index ("NFI") is reported in the EQS output, the Comparative Fit Index ("CFI") should be the index of choice" (p. 55). A CFI value of greater than .90 indicates an acceptable fit to the data (Bentler, 1992; Byrne, 1994). As in the initial CFA, all hypothesized factor loadings in this final CFA were highly significant ($p<.001$), confirming the hypothesized factor structure. Standardized factor loadings and residual variances of the observed variables in this final CFA model are graphically depicted in Figure 2.

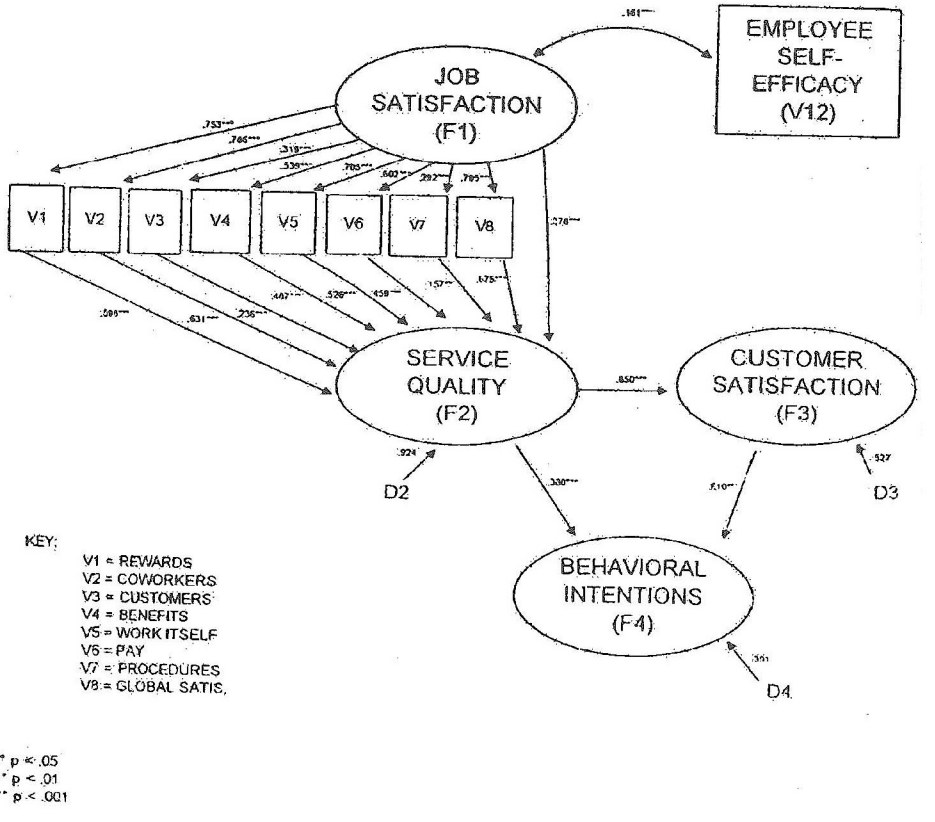
Figure 2
FINAL CONFIRMATORY FACTOR (CFA) MODEL



Structural Model Analysis

The final stage of the analyses was the creation of a structural (or path) model, which included the hypothesized regression effects representing influences of one variable or factor upon another. As can be seen in Table 6, the final structural model fit the data fairly well (CFI = .91). Associations among the factors are displayed graphically in Figure 3.

Figure 3
FINAL STRUCTURAL MODEL



* p < .05
** p < .01
*** p < .001

Table 3 shows the change in model fit in the structural model from the final CFA model. As shown in this table, there is not a significant difference between the structural model and the final confirmatory factor model (chi-square difference = .82, 3 df). This is an indication that the data adequately "fit" the hypothesized model and adds support to the hypotheses. Since the CFA model allows all constructs to covary freely, a comparison of the hypothesized model to the final confirmatory (CFA) model is one indication of adequate model fit. Therefore, a lack of significant difference between the CFA and the hypothesized model indicates that the data supports the hypothesized relationships.

Table 3
SUMMARY OF MODEL FIT STATISTICS

Model	Chi-Square	df	P-Value	NNFI	CFI
Initial CFA	662.86	126	.001	.85	.88
Final CFA	495.56	118	.001	.89	.92
Structural Model	496.38	115	.001	.89	.91

Chi-Square Difference:

Initial CFA to Final CFA	167.30 (8 df)***
Final CFA to Structural Model	.82 (3 df)

* p<.05
** p<.01
*** p<.001

The results of the final structural model support the first three hypotheses: (1) the path coefficient for the service quality-customer satisfaction path is significant and positive (+.850); (2) the path coefficients for the service quality-customer behavioral intentions and customer satisfaction-customer behavioral intentions paths are significant and positive (+.380 and +.610, respectively); and (3) the path coefficient for overall job satisfaction is significant and positive (+.376).

The specific effects of job satisfaction were tested to determine which facets contribute significantly to perceived service quality. All job satisfaction facets were significant in this model, with the "satisfaction with coworkers" (path coefficient = .631) and the "satisfaction with contingent rewards" (path coefficient = .598) paths contributing most to service quality.

The path relating self-efficacy to service quality was not found to be significant. However, the path relating self-efficacy to job satisfaction was found to be significant and, therefore, it is possible that self-efficacy has an *indirect* effect on service quality through its effect on job satisfaction.

The paths relating service quality to customer satisfaction (path coefficient = .850), and customer satisfaction to behavioral intentions (path = .610) were all significant at the p=.001 level, which offers support to Hypotheses #1 and #2. Additionally, the model explains 14.6% of the variance in service quality (D2 = .924), 72.2% of the variance in customer satisfaction (D3 = .527), and 90.9% of the variance in customer behavioral intentions (D4 = .301).

DISCUSSION

This study improved on previous studies relating job satisfaction to service quality in four main ways: (1) it assessed the variable relationships at the *individual*, rather than the group, level of analysis; (2) it added to the present body of knowledge by including certain individual difference variables in the model to control for their effects so that the true effects of the variables could be assessed; (3) it tested the hypotheses in a structural equations model which improves upon previous methodology by allowing for the estimation of multiple and interrelated dependence relationships and by increasing the reliability of measures through the use of separate measurement and structural models; and (4) rather than just using a global job satisfaction measure, this study investigated the effects of individual facets of job satisfaction on service quality to determine if certain facets better predict service quality than others.

Company experience and previous research studies have reported that employee satisfaction is the single best predictor of service quality at the *group* level of analysis (see Hartline & Ferrell, 1993). In one case example, Xerox Corporation discovered that work teams that score high levels of customer satisfaction also have high job satisfaction. In fact, in the late 1980s, Xerox named employee satisfaction as a business objective and noticed dramatic improvements in business effectiveness. As one company manager pointed out, "the more we focused on that linkage, the more it became clear that we could ultimately leverage our business results by engaging our employees in measures to improve their satisfaction" (see Watson, 1994, p. 4).

This study provides additional information regarding the effects of job satisfaction at the individual level of analysis. At this level of analysis, the data suggest that employee job satisfaction significantly affects service quality perceptions in higher education. Previous studies conducted in other types of service firms have investigated these relationships only at the group level of analysis. At the group level of analysis, these studies have also found a significant relationship, but the effect size has been smaller (see Hartline & Ferrell, 1993). In fact, the data presented in this study explained almost 15% of the variance in service quality—a significant amount considering the impact of service quality on organizational performance. For example, one previous study presented data which suggests that "an annual one-point increase in customer satisfaction has a net present value of $7.48 million over five years for a typical firm in Sweden" (see Anderson, Fornell & Lehmann, 1994, p. 63). This same study also suggested that "if the same coefficients apply to a sample of U.S. firms, the cumulative incremental returns from a continuous one-point increase in customer satisfaction over a five-year span would be $94 million" (see Anderson, Fornell & Lehmann, 1994, p. 63). Therefore, considering that service quality and customer satisfaction are highly related, even small increases in service quality could have a substantial impact on a firm's long-term financial performance.

Another contribution of this study is the addition of several employee "difference" variables. Several variables were included as control variables for employee differences such as work experience, organizational tenure, gender, and age. Previous research has shown that individual differences could affect the job satisfaction-service quality relationship. This model, however, takes these differences into consideration by controlling their effects so that the true relationship between the studied variables could be accurately assessed.

The effect of another individual difference variable, self-efficacy, was added to the model to better understand its effect on job satisfaction and service quality. Although some previous research has found a significant correlation between self-efficacy perceptions and service quality (see Hartline & Ferrell, 1993), no significant relationship between these two variables was found in this study. However, the sample used in this study only consisted of professionals in the academic industry, and it is possible that a different sample consisting of other service employees would produce different results.

The high mean score on the self-efficacy measure for this sample (6.33 in a 7.0 scale) adds support to this explanation. Additionally, it may be that the variance in self-efficacy perceptions in this sample is much less than in other types of samples (i.e., blue collar or hourly paid employees). Using different types of samples, other studies have found different results regarding self-efficacy's effect on performance quality. In their study on service quality in the hotel industry, Hartline and Ferrell (1993) found that self-efficacy perceptions significantly affected overall customer service ratings. The sample used in their study consisted of both hotel managers and hourly paid employees. Additionally, McDonald and Siegall (1993), in their study involving service technicians, found that technicians with high self-efficacy were more satisfied with their jobs and had higher quality and quantity of work production.

The results of this study further suggest that service quality is an antecedent of consumer satisfaction, and that consumer satisfaction exerts a stronger influence on purchase intentions than does service quality. This supports the work conducted by Cronin and Taylor (1992), who pointed out that managers need to emphasize total customer satisfaction programs more than strategies centering solely on service quality. By interviewing 660 consumers in four service industries, they found that perceptions of service quality affected overall customer satisfaction, but that customer satisfaction had a significantly larger effect on future behavioral intentions. It may be that it is more the convenience or availability of products that affects future purchase intentions than service quality. Nevertheless, this study shows that service quality is an important determinant of customer behavioral intentions and should be included in an organization's strategic plans.

CONCLUSION

The model presented in this study explains 14.6% of the variance in instructional service quality, 72.2% of the variance in student ("customer") satisfaction, and 90.9% of the variance in student behavioral intentions. This study presents further proof that job satisfaction may have a larger impact on productivity than previously thought. Previous studies relating job satisfaction to productivity have generally produced week correlations (Moorman, 1993; Petty, McGee & Cavender). This study supports recent research by Hartline and Ferrell (1996) which suggests that job satisfaction may have its biggest financial impact on the organization in the area of customer satisfaction. In fact, the data presented in this study explained almost 15% of the variance in service quality—a significant amount considering the impact of service quality on organizational performance and the company's bottom-line.

Results from this study indicate that overall job satisfaction, as well as satisfaction with individual job facets, are positively related to service quality. Consequently, programs aimed at monitoring and improving these specific dimensions should be examined. Service firms must be careful to avoid management practices that may discourage personnel's internal desire to give good service (Moorman, 1993). In an academic setting, data concerning the facets of instructor attitudes and behavior that are related to student perceptions are important for several reasons, but mainly because these are the attitudes and behaviors that should be supported as part of the creation and maintenance of a good service climate. In a business setting, the results of this study suggest that managerial practices to improve employee job satisfaction, such as flex-time, realistic job previews ("RJPs"), child care assistance, improved communications, and competitive pay rates may all have an impact on service quality. Managers should also find out what is on the minds of employees so that they can identify problem areas and correct them as quickly as possible. Additionally, management can reinforce employees' positive perceptions about their jobs by establishing the feeling that the company cares for them and is genuinely interested in their opinions about business operations (Moorman, 1993).

Limitations and Directions for Future Research

This research looked at only one service industry: higher education. Although academics is similar to other service industries in many ways, it is unclear whether or not the results of this study can be generalized across all industries. As with any other study utilizing one industry, this study should be replicated to provide validation across all industries. For example, several service quality researchers have found that one scale used in this study, SERVQUAL, is not completely generic across service industries and, therefore, must be somewhat tailored to each specific industry (see Carman, 1990). It is also possible the effects of some of the constructs, such as employee self-efficacy, could differ somewhat across industries and across job types.

This study utilized cross-sectional data. A replication of this study utilizing longitudinal data may provide a different view. Examining the effects of changes in job satisfaction over time may lead to other significant findings. In light of the changes occurring in the workplace today, such as organizational downsizing and employee empowerment programs, a longitudinal study of this type might be particularly useful to practicing managers. Additionally, longitudinal data would allow for the tracking of changes in service quality occurring as a result of changes in employee job satisfaction. Due to the number of changes going on in the workplace today, it would be of interest to investigate the effects of these changes, such as the effects of changes in organizational structure and reduced budgets.

The data used in this study was the result of surveys, albeit from two different groups of respondents. Some researchers have argued that common method variance could falsely inflate the relationships found in this type of study (see Campbell & Fiske, 1959). As defined by Spector (1987), method variance is "an artifact of measurement that biases results when relations are explored among the constructs measured by the same method" (p. 438). However, at least one study concerning the use of surveys in measuring constructs has found that method variance is not a significant biasing problem if the instruments studied are properly developed (see Spector, 1987). The measures used in this study have all been previously used, tested and validated by several researchers. Additionally, the use of structural equations modeling to analyze the data increased the reliability of the measures. Therefore, the amount of bias due to common method variance was minimized. However, future studies should employ the inclusion of other objective variables, such as absenteeism and production output, to confirm the results of this study.

Past research has shown that even minor increases in service quality can have a significant impact on the company's bottom-line. However, though the variance explained by the present model is significant, the model's explanatory power is limited to its included constructs. Obviously, many other constructs could affect faculty service quality. For example, other studies have found that employee job fit, horizontal communication, role conflict and role ambiguity also have an effect on employee service quality (Hartline & Ferrell, 1996; Parasuraman, Zeithaml, & Berry, 1990). Therefore, future studies should investigate other employee and management factors that may also impact service quality. Data concerning the facets of employee attitudes and behavior that are related to customer perceptions are important to managers mainly because these are the attitudes and behaviors that should be supported as part of the creation and maintenance of a good service climate.

These and other limitations notwithstanding, the results provide support for the significant relationship between job satisfaction, service quality, and customer satisfaction. Not only does job satisfaction have a significant financial impact on the organization, studies have shown that it also has a significant impact on employee life satisfaction. This makes an emphasis on job satisfaction the socially right thing for a company to do.

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