Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments

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The following study both synthesizes and builds on the efforts to conceptualize the effects of quality, satisfaction, and value on consumers' behavioral intentions. Specifically, it reports an empirical assessment of a model of service encounters that simultaneously considers the direct effects of these variables on behavioral intentions. The study builds on recent advances in services marketing theory and assesses the relationships between the identified constructs across multiple service industries. Several competing theories are also considered and compared to the research model. A number of notable findings are reported including the empirical verification that service quality, service value, and satisfaction may all be directly related to behavioral intentions when all of these variables are considered collectively. The results further suggest that the indirect effects of the service quality and value constructs enhanced their impact on behavioral intentions.

To date the study of service quality, service value, and satisfaction issues have dominated the services literature. The crux of these discussions has been both operational and conceptual, with particular attention given to identifying the relationships among and between these constructs. These efforts have enabled us to better discriminate between the three variables and have resulted in an emerging consensus as to their interrelationships.

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This interest has certainly not escaped practitioners' attention, as they have tied these variables to service employee evaluations and compensation packages. This is no doubt due to the implicit assumption that improvement in perceptions of the quality, value, and satisfaction in a service encounter should lead directly to favorable outcomes. Nevertheless, it is here where confusion remains.

Service managers who refer to the literature to help evaluate the effectiveness of firm strategies or to set employee goals will find conflicting information as to which of these variables, if any, is directly related to a service firm's bottom line (Bolton, 1998). Indeed, even a cursory evaluation of the literature reveals a myriad of conflicting results, as no research has *simultaneously* compared the relative influence of these three important constructs on service encounter outcomes. This gap in the literature has generated a new call for research. Referring to the effects of quality, value, and satisfaction on consumer purchase intentions, Ostrom and Iacobucci (1995) report ". . . it would be interesting to examine these consumer judgments simultaneously in one study to compare their relative effects on subsequent consequential variables" (p.18).

This leads to a number of unanswered questions. Is it necessary to measure all three of these variables or, as is suggested in the literature, will a subset of the three suffice? Do greater levels of service quality only indirectly encourage patronage by increasing the value and/or satisfaction associated with an organization's services? Are there other indirect effects on behavioral intentions that may have been overlooked? The purpose of this research is to answer these questions, and others. Therefore, a central premise of the reported research is that examining only a limited subset of the direct effects of quality, value, and satisfaction, or only considering one variable at-a-time, may confound our understanding of consumers' decision-making. This, in turn, can lead to strategies that either overemphasize or underappreciate the importance of one or more of these variables.

The study is presented in seven additional sections. First, in the conceptual background section, a discussion of both the convergent and divergent theory that underlies the model is presented. In the second section, several competing models of how consumers evaluate service encounters are identified based on a review of the literature. Three of the models emanate from the quality, satisfaction, and value literatures, whereas the fourth is an integrated model that builds on these three. Third, a consideration of indirect effects is presented. The fourth section reports the methods and results of the empirical assessments. These results are then discussed in the fifth, and the conclusions are presented in the sixth section. The limitations of the research are considered in the final section.

CONCEPTUAL BACKGROUND: QUALITY, VALUE, AND SATISFACTION

A review of the services marketing literature reveals several waves of conceptual research. Although there are many areas of pursuit, these waves seem to begin with the study of service quality, then carry through to satisfaction research, which has more recently given way to the study of service value. The interest in these topics is due to the practical significance of the constructs as each has been tied to either national awards or strategic paradigm shifts. The Baldridge Award, Total Quality Management (TQM), Customer

Satisfaction Measurement (CSM), Customer Value Management (CVM), and ideologies such as "customer delight" (Oliver, Rust, and Varki, 1997) are both the foundation and consequence of these waves. However, the result of these efforts has been mixed. That is, although a consensus is beginning to emerge for some topics, others remain unresolved. The current study is intended to address both the convergent and divergent literatures.

Convergent Literature: The Interrelationships

In addition to measurement issues, developing an understanding of the conceptual relationships between service encounter constructs has preoccupied services researchers over the past two decades. The objective has been to develop an improved understanding of not only the constructs themselves, but also how they relate to each other and subsequently drive purchase behavior. It is noted above that quality, value, and satisfaction have taken center stage in these discussions. Indeed, it was not long ago that the development of a working model of the conceptual interrelationships between them was placed at the top of future research directions (Rust and Oliver, 1994, p. 14). Of specific interest was the specification of the "antecedent, mediating, and consequent" relationships among these three variables. Since then, numerous studies have endeavored to model these links (e.g., Athanassopoulos, 2000; Chenet, Tynan, and Money, 1999; Clow and Beisel, 1995; Fornell et al., 1996; Garbarino and Johnson, 1999; Roest and Pieters, 1997; Spreng, Mackenzie, and Olshavsky, 1996; Zeithaml, Berry, and Parasuraman, 1996).

The result is that at least a partial consensus has emerged (Taylor, 1997) that is captured by the following excerpts.

- The service management literature argues that customer satisfaction is the result of a customer's perception of the value received. . . where value equals perceived service quality relative to price. . . (Hallowell, 1996, p. 29).
- The first determinant of overall customer satisfaction is perceived quality. . . the second determinant of overall customer satisfaction is perceived value. . . (Fornell et al., 1996, p. 9).
- Customer satisfaction is recognized as being highly associated with 'value' and. . . is based, conceptually, on the amalgamation of service quality attributes with such attributes as price. . . (Athanassopoulos, 2000, p. 192).

As is reflected above, Rust and Oliver's (1994) call for research into interrelationships did not go unanswered. Specifically, there has been a convergence of opinion that favorable service quality perceptions lead to improved satisfaction and value attributions and that, in turn, positive value directly influences satisfaction. Theoretical justification for these links can be attributed to Bagozzi's (1992) appraisal → emotional response → coping framework (Gotlieb, Grewal, and Brown, 1994). Bagozzi's (1992) model suggests that the initial service evaluation (i.e., appraisal) leads to an emotional reaction that, in turn, drives behavior. Adapting the framework to a services context suggests that the more cognitively-oriented service quality and value appraisals precede satisfaction (e.g., Alford

and Sherrell, 1996; Anderson, Fornell, and Lehmann, 1994; Anderson and Sullivan, 1993; Cronin and Taylor, 1992; Chenet, Tynan, and Money, 1999; de Ruyter et al. 1997; Ennew and Binks, 1999; Gotlieb, Grewal, and Brown, 1994; Kelley and Davis, 1994; Patterson and Spreng, 1997; Spreng and Mackoy, 1996; Woodruff, 1997).

Divergent Literature: Direct Effects

Although convergence seems to have emerged from the study of interrelationships, ambiguity persists relative to Rust and Oliver's (1994) third directive, the study of consequences. That is not to say that direct links to outcome variables have not appeared in the literature. Numerous studies, as shown in Table 1, have specified relationships between quality, value, satisfaction and such consequences as customer loyalty, positive word of mouth, price premiums, and repurchase intentions. However, a closer evaluation of Table 1 reveals little uniformity concerning which of the three variables, or combinations therein, directly affect consequence measures. In fact, model structure appears highly dependent on the nature of the study. For instance, if the research objective is to assess customer satisfaction implications, then the model tends to be "satisfaction dominated," such that the primary link to outcome measures is through satisfaction (see Table 1). This is also true of studies that focus on either service quality or service value.

It should be noted that we do not suggest that these studies are incorrect; rather, most are just limited in scope. Therefore, managers who look to the literature as a means of setting service goals risk being misled by the objective of the research as well as the time period (i.e., wave) in which it was written. That is, as shown in Figure 1, depending on the source, several competing models of direct effects can be identified. The first model depicted in Figure 1 is based on the service value literature, where value is suggested to lead directly to favorable outcomes (e.g., Chang and Wildt, 1994; Cronin et al., 1997; Gale, 1994; Sirohi, McLaughlin, and Wittink, 1998; Sweeney, Soutar, and Johnson, 1999; Wakefield and Barnes, 1996).

The second model is derived from the satisfaction literature that, contrary to the value literature, defines customer satisfaction as the primary and direct link to outcome measures (e.g., Anderson and Fornell, 1994; Andreassen, 1998; Athanassopoulos, 1999; Bolton and Lemon, 1999; Clow and Beisel, 1995; Ennew and Binks, 1999; Fornell et al., 1996; Hallowell, 1996; Mohr and Bitner, 1995; Spreng, Mackenzie, and Olshavsky, 1996).

The third model emanates from the literature that investigates the relationships between service quality, satisfaction, and behavioral intentions. Although the majority of studies indicate that service quality influences behavioral intentions only through value and satisfaction (e.g., Anderson and Sullivan, 1993; Gotlieb, Grewal, and Brown, 1994; Patterson and Spreng, 1997; Roest and Pieters, 1997; Taylor, 1997), others argue for a direct effect (e.g., Boulding et al., 1993; Parasuraman, Zeithaml, and Berry, 1988, 1991; Taylor and Baker, 1994; Zeithaml, Berry, and Parasuraman, 1996). The third model adopts the former perspective; that is, the depicted relationship between service quality and behavioral intentions is indirect.

Several points are apparent based on the models identified above. First, there is ample

TABLE 1

Literature Linking Quality, Value, and Satisfaction to Various Service Encounter Outcomes

Source	*Relevant Constructs*	*Link(s) to Outcomes*	*Empirically Tested?*
Parasuraman, Zeithaml, and Berry (1988)	SQ, BI	SQ	Yes
Parasuraman, Berry, and Zeithaml (1991)	SQ, BI	SQ	Yes
Anderson and Sullivan (1993)	SQ, SAT, BI	SQ, SAT	Yes
Boulding et al. (1993)	SQ, BI	SQ	Yes
Taylor and Baker (1994)	SQ, SAT, BI	SQ	Yes
Zeithaml, Berry, and Parasuraman (1996)	SQ, BI	SQ	Yes
Taylor (1997)	SQ, SAT, BI	SQ, SAT	Yes
Athanassopoulos (2000)	SAC, SQ, SAT, BI	SQ	Yes
Cronin and Taylor (1992)	SQ, SAT, BI	SAT	Yes
Anderson and Fornell (1994)	SQ, SAT	SAT	No
Gotlieb, Grewal, and Brown (1994)	SQ, SAT, BI	SAT	Yes
Ostrom and Iacobucci (1995)	SAC, SQ, SAT, VAL, BI	SAT	Yes
Fornell et al. (1996)	SQ, SAT, SV, BI	SAT	Yes
Patterson and Spreng (1997)	SAT, SV, BI	SAT	Yes
Hallowell (1996)	SAT, BI	SAT	Yes
Andreassen (1998)	SQ, SAT, SV, BI	SAT	Yes
Bolton (1998)	SAT, BI	SAT	Yes
Chenet, Tynan, and Money (1999)	SQ, SV, SAT, BI	SAT	No
Oliver (1999)	SAT, BI	SAT	No
Garbarino and Johnson (1999)	SAT, BI	SAT	Yes
Bolton and Lemon (1999)	SAT, BI	SAT	Yes
Bernhardt, Donthu, and Kennett (2000)	SAT, BI	SAT	Yes
Ennew and Binks (1999)	SQ, SV, SAT, BI	SAT, SV	Yes
Zeithaml (1988)	SAC, SQ, SV, BI	SV	No
Bolton and Drew (1991)	SQ, SAT, SV, BI	SV	No
Gale (1994)	SQ, SV, BI	SV	No
Chang and Wildt (1994)	SAC, SQ, SV, BI	SV	Yes
Hartline and Jones (1996)	SQ, SV, BI	SV	Yes
Wakefield and Barnes (1996)	SQ, SV, BI	SV	Yes
Cronin et al. (1997)	SAC, SQ, VAL, BI	SV	Yes
Sirohi, McLaughlin, and Wittink (1998)	SAC, SQ, SV, BI	SV	Yes
Sweeney, Soutar, and Johnson (1999)	SAC, SQ, SV, BI	SV	Yes

evidence of a significant bivariate relationship between all three variables and behavioral intentions. Indeed, managers and researchers alike have not been reticent to promote these links. Second, although it is clear that service quality is an important determinant of behavioral intentions, the exact nature of this relationship remains unresolved. Zeithaml, Berry, and Parasuraman (1996, p. 31) insightfully capture this point in their discussion of the relationship between service, quality and profits ". . . the intermediate links between

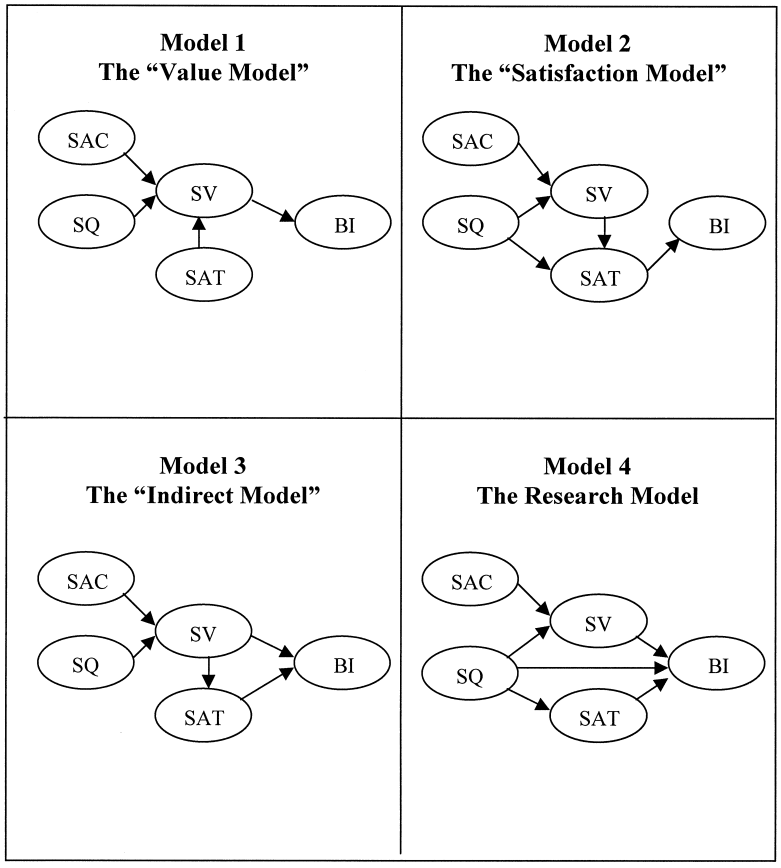

FIGURE 1

Competing Models.

service quality and profits have not been well understood." Third, it is evident that few studies have investigated multiple direct links between quality, value, satisfaction, and behavioral intentions. Further, there is no reported investigation of whether any or all of these variables directly influence behavioral intentions when the effects of all three are simultaneously considered.

We believe that partial examinations of the simple bivariate links between any of the constructs and behavioral intentions may mask or overstate their true relationship due to omitted variable bias. In order for a more pragmatic picture of the underlying relationships that exist among these variables to emerge, an investigation of a more collective model is needed. Following this view, we specify in Figure 1 a fourth competing model based on the literature cited The Research Model). However, unlike prior studies we suggest that all three variables directly lead to favorable behavioral intentions simultaneously. We expect

this model to outperform the three competing models by exhibiting a better fit to the data and accounting for a greater share of the variance in consumers' behavioral intentions. This leads to the first research hypothesis.

> **H_1:** *The research model yields a significantly better fit to the data and accounts for a greater share of the variance in behavioral intentions than the three competing models.*

Indirect Relationships

In addition to the direct links described above, at least three indirect relationships are of both theoretical and practical interest to the current study. This extension is offered 1) to further our understanding of how quality, value, and satisfaction influence behavioral intentions, 2) to add to the growing body of literature that specifies the interrelationships between these variables, and 3) because these effects have yet to be considered. Two of these indirect effects are related to the relationship between service quality perceptions and consumers' behavioral intentions. Specifically, the question is whether service quality perceptions have a significant indirect influence on behavioral intentions through value attributions and customer satisfaction. In addition, the indirect effect of service value assessments on consumers' behavioral intentions through their influence on customer satisfaction should be of similar interest. These indirect relationships are represented as the second hypothesis.

> **H_2:** *Consumers' service quality and value perceptions have a positive, indirect influence on behavioral intentions.*

METHODOLOGY

Data Collection

To ensure the cross-validation of results, two studies are reported that investigates six service industries and utilize different samples. The six industries were chosen so that the samples varied on 1) the degree to which the service can be characterized as hedonic (Study 1) versus utilitarian (Study 2), 2) the prominence of tangible (Fast Food) versus intangible (Long Distance) attributes, and 3) the primary (Health Care) versus secondary (Sporting Events) role of the service employees. Multiple service providers were chosen in each industry based on their prominence in the sampling area as well as their familiarity to the sample as exhibited in a pretest conducted as part of another study. The six industries used and their respective sample sizes were as follows:

The studies were conducted in the same medium-sized metropolitan area; however,

Study 1:	*Study 2:*
Spectator Sports[1] n = 401	Health Care n = 167
Participation Sports n = 396	Long distance Carriers n = 221
Entertainment n = 450	Fast Food n = 309

different interviewers and subjects were used for each study. Data collection procedures were managed by one of the authors. To improve the representativeness of the sample, surveys were gathered in numerous locations in the area and the interviewers were given demographic guidelines to follow. Specifically, quota sampling was used to control for age, gender, and ethnic background. Given the cumulative nature of the study, respondents were only asked to answer the questions if they had multiple experiences in an industry. Also, each of the constructs was assessed across the respondent's cumulative experience with the firm, with the exception of service quality and satisfaction. The latter two constructs exist at both a cumulative and a transaction-specific level and were measured accordingly (Oliver, 1997).

The respondents were self-selected; however, they were disqualified if they had not had an experience with the service provider in the previous six months. To ensure the authenticity of the data, twenty percentage of each interviewer's respondents were contacted by phone and asked to confirm selected demographic information solicited as a part of the survey. To ensure the independence of the individual observations, respondents' personal information was compared across the six industries. This procedure resulted in the loss of less than one percentage of the total number of cases. The sample is roughly evenly divided on gender and mirrors the population well with the exception that respondents 56 and over are slightly under-represented.

Measurements

Table 2 provides descriptive statistics—including means, standard deviations, intercorrelations, and shared variances—for the measurement scales. Although the measurement and structural discussions center on the overall sample, analyses were also performed for the six industry samples to provide for a more a comprehensive assessment of the measures (see Table 3). The measurement scales utilized in the study are included in the Appendix.

The psychometric properties of the seven constructs were evaluated by employing the method of confirmatory factor analysis via the use of LISREL (Jöreskog and Sörbom, 1993). In each instance, all seven scales were tested simultaneously in one confirmatory factor model. Each scale item was only allowed to load on one factor and could not cross-load on any other factors. The specific items were evaluated based on the item's error variance, modification index, and residual covariation (Anderson and Gerbing, 1988; Fornell and Larcker, 1981; Jöreskog and Sörbom, 1993). The model fit was evaluated using the CFI, RNI, and TLI fit indices that are recommended based on their relative stability and insensitivity to sample size (Hu and Bentler, 1999; Gerbing and Anderson,

TABLE 2

Summary Statistics for Overall Sample[a]

Variable	*Mean*	*Standard Deviation*	*SAC*	*SQP*	*OSQ*	*SV*	*SAT_1*	*SAT_2*	*BI*
Sacrifice (SAC)	5.09	1.50	1.00	.12	.00	.02	.02	.01	.02
Service Quality Performance (SQP)	6.61	1.26	−.35	1.00	.52	.09	.15	.26	.29
Overall Service Quality (OSQ)	6.41	1.44	−.03	.72	1.00	.10	.18	.29	.31
Service Value (SV)	6.15	1.53	−.15	.30	.32	1.00	.31	.12	.19
Satisfaction (SAT_1)	7.63	1.75	−.14	.39	.43	.56	1.00	.26	.38
Satisfaction (SAT_2)	6.37	1.71	−.10	.51	.54	.34	.51	1.00	.52
Behavioral Intentions (BI)	7.08	1.79	−.15	.54	.56	.44	.62	.72	1.00

Notes [a] All intercorrelations are significant at the $p < 0.01$ levels except between SAC-SQP and SAC-OSQ that are insignificant. Intercorrelations are included in the lower triangle of the matrix. Shared variances in percent are included in the upper triangle of the matrix.

1992). Utilizing these criteria, the CFI, RNI, and TLI estimates for the seven-factor measurement model were all 0.93 for the overall sample (see Table 3).

Construct reliability was calculated using the procedures outlined by Fornell and Larcker (1981) which include the examination of the parameter estimates, their associated *t*-values, and assessing the average variance extracted for each construct (Anderson and Gerbing, 1988; Bagozzi and Yi, 1988). Discriminant validity within the two-dimensional scales (i.e., service quality and satisfaction) was established by calculating the shared variance between the two dimensions of the specific construct and verifying that it is lower than the average variances extracted for the individual dimensions (Fornell and Larcker, 1981). Similarly, discriminant validity between the remaining constructs in the model was established by comparing the shared variances between the constructs to the average variances extracted. Although the performance of the scales in the six samples is discussed in detail in the following sections, it is important to note that the shared variances for the dimensional scales in the overall sample ranged from a low of 0% to 52% (see Table 2).

Sacrifice (SAC)

Consistent with Heskett, Sasser, and Hart (1990) and Zeithaml (1988), sacrifice is defined as what is given up or sacrificed to acquire a service. The measurement of the sacrifice construct is consistent with the multidimensional conceptualization advanced in the literature (cf., Dodds, Monroe, and Grewal, 1991; Zeithaml, 1988). Specifically, items that represent consumers' perceptions of the monetary and the non-monetary price associated with the acquisition and use of a service were used as indicators of the sacrifice construct. Monetary price was assessed by a direct measure of the dollar price of the service (see the Appendix). Direct measures of time and effort were utilized to measure

TABLE 3

Confirmatory Factor Analysis Results

Industry[a] *Sample Size (n)*	*Overall* *1,944*	*SPSP* *401*	*PSP* *396*	*ENT* *450*	*HC* *167*	*LDC* *221*	*FF* *309*
CFI	.93	.91	.92	.93	.89	.88	.90
RNI	.93	.91	.92	.93	.89	.89	.90
TLI	.93	.91	.91	.92	.90	.89	.90
SACRIFICE (SAC; 3 items)							
Construct reliability	.69	.62	.46	.75	.72	.67	.77
Average variance extracted	43.0%	47.2%	23.3%	52.1%	48.0%	41.6%	53.3%
Parameter estimates[b]	.54–.78	.41–.90	.37–.63	.53–.95	.51–.90	.39–.76	.55–.93
SERVICE QUALITY (SQ; 13 items)							
Performance (SQP; 10 items)							
Construct reliability	.94	.93	.94	.93	.93	.94	.93
Average variance extracted	53.2%	57.8%	59.5%	59.1%	57.0%	61.6%	57.8%
Parameter estimates[b]	.58–.85	.57–.85	.50–.89	.54–.86	.54–.84	.52–.85	.64–.82
Overall (OSQ; 3 items)							
Construct reliability	.88	.86	.90	.87	.88	.92	.87
Average variance extracted	71.6%	67.0%	74.2%	69.9%	71.2%	80.1%	69.1%
Parameter estimates[b]	.76–.91	.69–.92	.83–.90	.75–.91	.65–.93	.81–.94	.74–.88
SERVICE VALUE (SV; 2 items)							
Construct reliability	.88	.86	.84	.86	.87	.89	.88
Average variance extracted	78.4%	75.1%	72.3%	75.2%	76.5%	79.5%	79.4%
Parameter estimates[b]	.86–.89	.85–.87	.81–.87	.73–.99	.87–.88	.87–.89	.88–.90
SATISFACTION (SAT; 8 items)							
SAT_1 (5 items)							
Construct reliability	.88	.89	.87	.88	.85	.92	.90
Average variance extracted	60.7%	61.9%	57.4%	60.0%	54.6%	69.5%	66.2%
Parameter estimates[b]	.58–.92	.63–.91	.54–.90	.55–.86	.38–.92	.66–.95	.59–.94
SAT_2 (3 items)							
Construct reliability	.85	.81	.86	.81	.86	.87	.93
Average variance extracted	66.5%	58.3%	67.2%	58.7%	67.4%	69.5%	80.6%
Parameter estimates	.78–.84	.72–.78	.78–.84	.73–.80	.76–.89	.81–.86	.89–.91
BEHAVIORAL INTENTIONS (BI; 3 items)							
Construct reliability	.87	.82	.85	.90	.88	.90	.84
Average variance extracted	68.2%	60.3%	65.5%	74.9%	71.2%	75.7%	64.3%
Parameter estimates[b]	.78–.87	.67–.90	.78–.84	.76–.92	.79–.87	.86–.89	.78–.84

Notes [a] Overall = Overall Sample, SPSP = Spectator Sports, PSP = Participation Sports, ENT = Entertainment, HC = Health Care, LDC = Long Distance Carriers, and FF = Fast Food.
[b] *t*-values range from 4.89 ($p \leq .01$) to 52.88 ($p \leq .01$) for the various measurement indicators.

the nonmonetary price associated with a service. A nine-point Likert-type response format ranging from "very low" to "very high" was used for all three items. The parameter estimates ranged from 0.54 to 0.78 in the overall sample, with a construct reliability for the three-item sacrifice scale of 0.69, and an average variance extracted of 43%. The shared variances between the sacrifice scale and all other scales ranged between 0 and 12%.

Service Quality (SQ)

Service quality is a widely studied, and debated, construct (cf., Babakus and Boller, 1992; Brown, Churchill, and Peter, 1993; Carman, 1990; Peter, Churchill, and Brown, 1993; Cronin and Taylor, 1992, 1994; Parasuraman, Zeithaml, and Berry, 1988; Teas, 1993). However, for the purpose of explaining variance in dependent constructs, the weight of the evidence in the extant literature supports the use of performance perceptions in measures of service quality (Parasuraman, Zeithaml, and Berry, 1994; Zeithaml, Berry, and Parasuraman, 1996). As a result, two multiple item performance-based service quality measures were included in the reported studies.

Because of the comprehensive nature of the study, the number of items used to measure each variable became a major concern. Thus, the first performance-based service quality measure (SQP) consisted of ten questions derived from Parasuraman, Zeithaml, and Berry's (1985) 10 dimensions of service quality (see the Appendix). Similar scales have been developed and used by Gotlieb, Grewal, and Brown (1994), McAlexander, Kaldenberg, and Koenig (1994), Hartline and Ferrell, (1996), and Voss, Parasuraman, and Grewal (1998). A procedure recommended by Boyle, Dwyer, Robicheaux, and Simpson (1992) was used to develop the 10-item service quality scale. Initially, multi-item scales were developed for each of the 10 dimensions of service quality identified by Parasuraman, Zeithaml, and Berry (1985). After assessing the face validity of the items, and several rounds of data collection and refinement (cf., Churchill, 1979), a 47-item scale was identified and tested on a large ($n = 278$) convenience sample of students in the basic marketing courses of a large state university with approximately 30,000 students.

The item with the highest intercorrelation with the other measures in its scale was selected from each of the ten individual dimensions to define the ten-item service quality scale used in the reported research. The second measure consisted of three overall direct measures of service quality (OSQ) that were adapted from Oliver's (1997) work, but are also similar to other OSQ indicators used elsewhere in the literature (cf., Babakus and Boller, 1992; Cronin and Taylor, 1992).

A nine-point Likert-type scale was used ranging from "very low" to "very high" to assess the SQP set of measures. The OSQ items also use a nine-point Likert-type scoring format, ranging from "poor" to "excellent," "inferior" to "superior," and "low standards" to "high standards." The parameter estimates ranged from 0.58 to 0.85 for SQP and 0.76 to 0.91 for OSQ, with corresponding construct reliabilities of 0.94 and 0.88, and with average variances extracted of 53 and 72%. The shared variance between the two dimensions of service quality (SQP and OSQ) was 52% whereas the shared variances between the two dimensions of service quality and all other scales ranged between 0 and 29%.

Service Value (SV)

Zeithaml's (1988) exploratory investigation of the value construct identifies four unique definitions upon which consumers appear to base their evaluations of service exchanges.

However, she further argues that the four can be summed into a single definition ". . . perceived value is the consumers' overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). Two direct measures of value were included in the survey to capture the value construct. A nine-point Likert-type scale was used ranging from "very low" to "very high." The parameter estimates ranged from 0.86 to 0.89, with a construct reliability of 0.88, and an average variance extracted of 78.4%. The shared variance between the service value scale and all other scales ranged between 2 and 34%.

Satisfaction (SAT)

Because of its potential influence on consumer behavioral intentions and customer retention (Anderson and Fornell, 1994; Anderson and Sullivan, 1993; Bolton and Drew, 1994; Cronin and Taylor, 1992; Fornell, 1992; Oliver, 1980; Oliver and Swan, 1989), consumer satisfaction has been the subject of much attention in the literature (Bitner and Hubbert, 1994; Cardozo, 1965; Oliver, 1977, 1980, 1981; Olshavsky and Miller, 1972; Olson and Dover, 1979; Rust and Oliver, 1994). Satisfaction is described as "an evaluation of an emotion" (Hunt, 1977, pp. 459–460), suggesting that it reflects the degree to which a consumer believes that the possession and/or use of a service evokes positive feelings (Rust and Oliver, 1994).

Because satisfaction with a service provider is perceived as being both an evaluative and emotion-based response to a service encounter (Oliver, 1997), two sets of items were employed. The first set of "emotion-based" measures (SAT_1) was adapted from Westbrook and Oliver (1991), whereas the second "evaluative" set of satisfaction measures (SAT_2) was developed for this study but is similar to Oliver's (1997) cumulative satisfaction measures. The scoring format for the SAT_1 scale is a nine-point Likert-type scale ranging from "not at all" to "very much." The SAT_2 scoring was also of a Likert-type format ranging from "strongly disagree" to "strongly agree." The parameter estimates ranged from 0.58 to 0.92 and 0.78 to 0.84 for SAT_1 and SAT_2, respectively. The construct reliabilities for SAT_1 and SAT_2 are 0.88 and 0.85, with average variances extracted of 61 and 67%. The shared variance between the two dimensions of satisfaction was 26%, whereas the shared variances between the two dimensions of satisfaction and all other scales ranged between 1 and 31%.

Behavioral Intentions (BI)

The indicators of behavioral intentions are the final set of items included in the analysis. Theory suggests that increasing customer retention, or lowering the rate of customer defection, is a major key to the ability of a service provider to generate profits (Zeithaml, Berry, and Parasuraman, 1996). Specifically, Zeithaml, Berry, and Parasuraman (1996) suggest that favorable behavioral intentions are associated with a service provider's ability to get its customers to 1) say positive things about them, 2) recommend them to other consumers, 3) remain loyal to them (i.e., repurchase from them), 4) spend more with the

company, and 5) pay price premiums. We used three items to measure this construct that are similar to the domains assessed in the first four of these five outcomes. The items are also similar to those reported and used throughout the services marketing literature (cf., Babakus and Boller, 1992; Cronin and Taylor, 1992). A nine-point Likert-type scale was used ranging from "very low" to "very high." The parameter estimates ranged from 0.78 to 0.87, with a construct reliability of 0.87, and an average variance extracted of 68%. The shared variances between the behavioral intention scale and all other scales range between 2 and 52%.

ANALYSIS AND RESULTS

Model Tests

The first hypothesis predicts that the research model outperforms the three competing models drawn from the literature. We argue that the competing models are constrained only as an artifact of the literature and that a more connected approach to predicting and/or explaining the variance in behavioral intentions should be considered. In comparing the SEM models, we followed the procedures outlined by Anderson and Gerbing (1988). As such, the comparison of the models is determined by calculating the difference in χ^2 values (Anderson and Gerbing, 1988; Bagozzi and Phillips, 1982; Jöreskog, 1971). Anderson and Gerbing (1988) state that the χ^2 differences can then be tested for statistical significance with the appropriate degrees of freedom being the difference in the number of estimated coefficients for the nested models. However, given the sensitivity of the χ^2 statistic to sample size (Gerbing and Anderson, 1992; James, Mulaik, and Brett, 1982), a selection of fit indices is also reported for comparison purposes.

Each model was tested on the whole sample ($n = 1{,}944$). However, industry-specific analyses were also performed and will be discussed below. The measures, sample, and testing procedure were identical for each of the four models tested. Testing was accomplished through structural equation modeling via the use of LISREL (Jöreskog and Sörbom, 1993). The results of the model comparisons are reported in Table 4.

The χ^2 value for the research model was 55.2 with 10 degrees of freedom (see Table 4).[2] The relative ability of the research model to explain variation in behavioral intentions (as measured by the R^2-value) was 0.94. This is compared to χ^2 values for the competing models ranging from 288.9 (The "Indirect Model") to 585.8 (The "Value Model") and R^2-values of 0.82 (see Table 4). A similar pattern of results was indicated by the fit measures. Thus, the first hypothesis is supported.

Given this support, discussion of the path results will be restricted to the research model, as will the industry-specific analyses. The disaggregated tests were performed using a group analysis method to examine the strength of the theoretical framework and to test the stability of the individual parameter estimates. The parameter estimates for the overall sample are reported in Figure 2. Results of the industry tests are reported in Table 5. CFI, RNI, and TLI for the overall sample were all 0.99. These estimates are well above

TABLE 4

Results of Model Comparisons[a]

Fit/Path[b]	*The Research Model*	*The Value Model*	*The Satisfaction Model*	*The Indirect Model*
χ^2/df	55.2/9	585.8/10	389.7/11	288.9/11
CFI	.99	.92	.95	.96
RNI	.99	.92	.94	.96
TLI	.99	.92	.94	.96
SAC → SV	.04 (ns)	.01 (ns)	.04 (ns)	.05 (2.16)
SQ → SV	.64 (22.32)	.46 (17.01)	.64 (22.32)	.70 (24.24)
SQ → SAT	.31 (9.87)	---	.36 (14.20)	---
SV → SAT	.42 (12.25)	.45 (14.84)[c]	.59 (17.83)	.65 (20.22)
SQ → BI	.24 (7.84)	---	---	---
SV → BI	.47 (8.67)	.94 (13.13)	---	.64 (9.36)
SAT → BI	.41 (8.16)	---	.94 (14.44)	.43 (8.47)
R^2 (BI)	.94	.82	.82	.82

Notes [a] The model comparisons were performed by calculating the difference in chi-square (χ^2) values between the research model and the three nested models. These values were tested for significance using the difference in estimated parameters as the appropriate degrees of freedom. For example, the significance threshold for $\Delta\chi^2$ (1) is 3.84 and $\Delta\chi^2$ (2) is 5.99.

[b] A Dashed line (---) indicates that the path is not specified in that model.

[c] The path is specified SAT → SV in the value model.

the recommended threshold for a good fit (Hu and Bentler, 1999). R^2-values for service value and satisfaction were 0.42 and 0.44, respectively. Similar results were obtained for the industry analyses, with fit indices ranging from 0.96 (Health Care) to 1.00 (Entertainment and Spectator Sports). R^2 values ranged from 0.34 to 0.64, 0.23 to 0.67, and 0.75 to 0.92 for the equations involving service value, satisfaction, and behavioral intentions, respectively (see Table 5).

As for the path estimates, the results across the six industries were consistent with those for the overall sample. For the paths leading to service value, we suggested that service quality has a positive effect on service value whereas sacrifice has a negative effect (Monroe, 1990). The results indicate partial support for this tradeoff as the service quality 224 value path was consistently significant (*t*-value = 22.32 in the overall sample), yet there was an insignificant relationship between sacrifice and value. For the interrelationships leading to satisfaction, we modeled service quality and service value as direct determinants. This maintains the cognitive → emotive causal order (Bagozzi, 1992) and reflects the "convergent" service literature. The results consistently supported this literature as both service quality (*t*-value = 9.87 in the overall sample) and service value (*t*-value = 12.25) were significant predictors of satisfaction.

As alluded to above, specifying direct links between service quality, value, satisfaction, and behavioral intentions was supported by the data. These links significantly improved the model fit in the competing model tests and were also repeatedly significant. Specifically, considerable evidence was found linking service quality (*t*-value = 7.84 in the overall sample), service value (*t*-value = 8.67), and satisfaction (*t*-value = 8.16) to

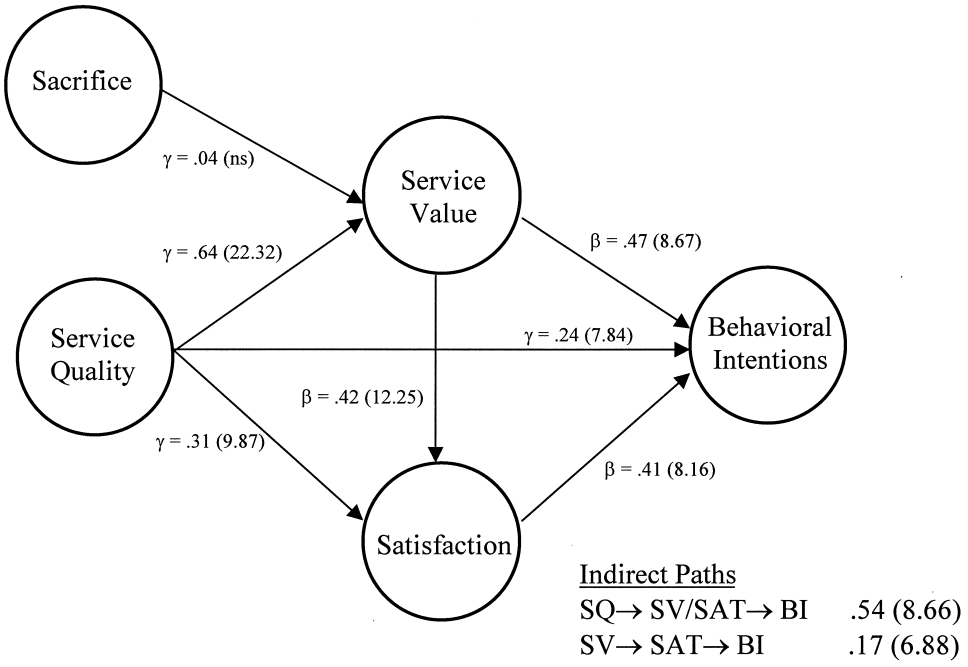

FIGURE 2

Results of Comprehensive Model Testing.

consumers' behavioral intentions. Moreover, the industry-specific analyses also supported these paths. The service value → behavioral intentions relationship was significant in all six-industry samples, while satisfaction influenced behavioral intentions directly in all industries except health care. Service quality had a direct effect on consumers' behavioral intentions in four of the six industries with the exceptions being the health care and long-distance carrier industries.

In addition to the direct effects, we further examined service quality and service value to determine whether they were indirectly related to behavioral intentions. More specifically, the indirect relationship between service quality and behavioral intentions via both service value and satisfaction was tested. The indirect relationship between service value and behavioral intentions via satisfaction was also examined. These links comprise the second hypothesis. The results favor Hypothesis 2 as they indicated a significant indirect path between both service quality (*t*-value = 8.66) and service value (*t*-value = 6.88) and behavioral intentions. The industry analyses yielded similar results as service quality was significantly related to behavioral intentions in all six industries. The indirect relationship involving service value (i.e., SV → SAT → BI) was found to be significant in all industries except for health care.

In addition to the indirect effects analysis conducted as a part of the overall industry model analysis, we also used the procedure suggested by Bollen (1989) to examine the

TABLE 5

Results of Comprehensive Model Testing

	Estimates	*Spectator Sports*	*Participative Sports*	*Entertainment*	*Health Care*	*Long Distance*	*Fast Food*
PATHS	SAC → SV	−.09 (1.54)	−.12 (1.71)	.11 (1.98)	−.02 (0.16)	.00 (0.02)	−.23 (3.83)
	SQ → SV	.62 (9.62)	.69 (9.50)	.61 (8.96)	.66 (5.55)	.80 (6.90)	.58 (8.39)
	SQ → SAT	.27 (3.35)	.28 (3.38)	.26 (3.69)	.24 (2.30)	−.01 (0.06)	.34 (4.48)
	SV → SAT	.42 (4.79)	.49 (5.31)	.29 (4.12)	.63 (4.31)	.68 (4.49)	.35 (4.54)
	SQ → BI	.20 (3.31)	.23 (3.63)	.16 (3.31)	.10 (1.33)	.17 (1.88)	.33 (4.76)
	SV → BI	.47 (6.75)	.39 (4.99)	.57 (9.01)	.84 (3.42)	.58 (4.53)	.45 (5.88)
	SAT → BI	.34 (4.49)	.42 (5.13)	.33 (6.42)	.06 (0.57)	.26 (3.70)	.25 (4.14)
	SQ → SV/SAT → BI	.47 (6.75)	.52 (6.36)	.49 (7.8)	.59 (3.47)	.60 (5.50)	.40 (6.38)
	SV → SAT → BI	.14 (3.43)	.20 (3.70)	.09 (3.53)	.04 (0.58)	.18 (2.94)	.09 (2.98)
R^2	R^2 SAT	.39	.50	.23	.67	.45	.39
	R^2 SV	.41	.52	.34	.45	.64	.45
	R^2 BI	.75	.85	.77	.92	.83	.78
FIT	χ^2/df (p-value)	8.49/9 (.49)	29.94/9 (.01)	11.30/9 (.26)	22.78/9 (.01)	16.86/9 (.05)	18.51/9 (.03)
	CFI	1.00	.98	1.00	.98	.99	.99
	RNI	.99	.98	.99	.96	.98	.98
	TLI	.99	.98	.99	.97	.98	.98

effect of service quality on behavioral intentions via service value (i.e., SQ → SV → BI) and satisfaction (i.e., SQ → SAT → BI) independently of each other. Approximate *t*-values were calculated using the procedure outlined by Sobel (1982). Again, the independent indirect relationships proved significant.

DISCUSSION

The results presented in the preceding section indicate that the research model fits well and outperforms the competing models. They also support the heretofore-untested indirect effects that service quality and values have on behavioral intentions. Collectively, the results both support and build on the extant literature. As to the former, our findings indicate that both service quality and service value lead to satisfaction. Thus, these findings add weight to Bagozzi's (1992) suggestion that cognitive evaluations precede emotional responses. The results also provide empirical support for Woodruff's (1997) conceptualization of value and satisfaction. From a managerial standpoint, this stresses the importance of value as a strategic objective and underscores the recent wave of research investigating the construct. In addition, they suggest that service quality perceptions are also an important determinant of customer satisfaction.

An unexpected finding concerned the antecedents of service value. The literature is clear in depicting value as a tradeoff between quality and sacrifice (e.g., Chang and Wildt, 1994; Monroe, 1990; Sirohi, McLaughlin, and Wittink, 1998; Sweeney, Soutar, and Johnson, 1999). However, the empirical results presented here indicate that the value of a service product is largely defined by perceptions of quality. Thus, service consumers seem to place greater importance on the quality of a service than they do on the costs associated with its acquisition. The lone exception to this finding was in the fast food industry where value integration did occur. This can perhaps be explained by the emphasis on value in this industry as is evident by the popularity of value menus. From a managerial standpoint, this emphasizes the importance of quality as an operational tactic and strategic objective. For theory, these results add further evidence that service quality is an important decision-making criterion for service consumers.

The premise of this study was that confusion remains as to the direct antecedents of behavioral intentions. We argued that the direct links established in the literature were largely a derivative of project scope and construct inertia. The findings support our position and justify the efforts to improve quality, value, and satisfaction *collectively* as a means of improving customer service perceptions. In his book *Managing Customer Value*, Gale (1994) describes the evolution of the Baldridge Award from its origin in quality control to its more recent focus—as an integrated program that jointly considers quality, satisfaction, and value management. Our empirical results support this repositioning and reiterate the attention given to the study of service quality, service value, and satisfaction in the literature. The results also emphasize the importance of assuming a simultaneous, multivariate analytical approach. Establishing initiatives to improve only one these variables is therefore an incomplete strategy if the effects of the others are not considered.

This is also true for behavioral models that fail to incorporate the collective effects of these constructs.

In addition to the direct effects, we also argue for consideration of the indirect effects that service quality and service value have on consumers' behavioral intentions (i.e., service quality through service value and customer satisfaction and service value through customer satisfaction). The results indicate that these indirect paths are consistently significant across industries and multiple methods. This enhances the position set forth above that consumers' decision-making relative to their purchases of service products is a complex and comprehensive process. That is, the significant indirect paths indicate that models of consumers' evaluations of services that consider only individual variables or direct effects are likely to result in incomplete assessments of the basis of these decisions. Thus, the services manager who only considers the likely effect of a service quality initiative on his or her customers' behavioral intentions errs if he or she does not also consider the impact of such a strategy on the value and satisfaction attributed to his or her firm's services. Likewise, an evaluation of the performance of value-added strategies should incorporate the indirect effects on consumers' behavioral intentions through service value's influence on customers' satisfaction with a service provider. Nonetheless, it seems that new insights are possible, if not likely, from the investigation of such integrated decision-making models.

CONCLUSION

> *"Companies increasingly look to quality, satisfaction, and loyalty as keys to achieving market leadership. Understanding what drives these critical elements, how they are linked and how they contribute to your company's overall equity is fundamental to success." (AC Nielsen, 2000).*

Our objective for this study was to clarify the relationships between quality, value, satisfaction, and behavioral intentions. We suggest that the consumer decision-making process for service products is best modeled as a complex system that incorporates both direct and indirect effects on behavioral intentions. We believe the evidence presented supports this position. Moreover, as is evident from the quote above, this appears to be a worthy area of pursuit.

Reiterating our initial set of questions, is it necessary to measure all three of these variables? The answer is yes as the effect of these variables on behavioral intentions is both comprehensive and complex. Specifically, we provide evidence that quality, value, and satisfaction directly influences behavioral intentions, even when the effects of all three constructs are considered simultaneously. This not only underscores the practical significance of each construct, but also emphasizes the need to adopt a more holistic view of the literature.

Do greater levels of service quality only indirectly encourage patronage by increasing the value and/or satisfaction associated with an organization's services? Contrary to the literature, the answer to this question is no. It is clear that the role of quality is far more

complex than previously reported. Not only does quality affect perceptions of value and satisfaction, it also influences behavioral intentions directly. Are there other indirect effects on behavioral intentions that may have been overlooked? Our results suggest that the answer is yes; the influence of perceptions of service quality and value on behavioral intentions is considerably more integrated than is reported in the literature.

There are a number of implications of this study for future research projects. The obvious implication is the need for further consideration of similar composite models. Additional decision-making variables should also be included. Potential measures include the physical or tangible quality of service products, the quality of the service environment (i.e., the servicescape), and consumers' expectations. The influence of individual consumer and product class differences might also be a fruitful area of inquiry. Answers to questions as to how differences in consumer and product characteristics affect the importance of the various decision-making variables could prove insightful. Indeed, although our results were rather consistent across the six investigated industries, there was some variation worthy of attention. This is especially true if we are to better understand the complexities of how service quality influences customer service behavior.

Replication is another area where marketing research should direct greater attention. The possible moderating effects of such individual characteristics as risk aversion, involvement, and product category experience/expertise might also be relevant pursuits in future research. Finally, this research also illuminates the need for additional research that considers the influence of service value on consumer decision-making and corporate profits.

LIMITATIONS

As is the case with any research project, the studies presented exhibit limitations that should be considered. First, we stress that this model is not designed to include all possible influences on consumer decision-making for services. We limit our consideration to the identified variables simply because the focus of the investigation is on the composite set of links between consumers' service quality and value perceptions, the satisfaction they attribute to the service provider, and their behavioral intentions. In addition, the LISREL methodology may be construed as a limitation. The results presented here are based on the analysis of a causal model with cross-sectional data. Because the model is not tested using an experimental design, strong evidence of causal effects cannot be inferred. Rather, the results are intended to support the a priori causal model. Third, the use of additional items, while increasing the survey length, might improve the inherent reliability and validity of the measures used. Finally, measures of actual purchase behavior, as opposed to behavioral intentions, could also enhance the validity of the study. Unfortunately, such data are often difficult and costly to gather.

APPENDIX

THE MEASURES

Sacrifice (scaling from "very low" to "very high" on a 9-point scale):

The price charge to use this facility is
The time required to use this facility is
The effort that I must make to receive the services offered is

Service Quality Performance (scaling from "very low" to "very high" on a 9-point scale)

Generally, the employees provide service reliably, consistently, and dependably.
Generally, the employees are willing and able to provide service in a timely manner.
Generally, the employees are competent (i.e., knowledgeable and skillful).
Generally, the employees are approachable and easy to contact.
Generally, the employees are courteous, polite, and respectful.
Generally, the employees listen to me and speak in a language that I can understand.
Generally, the employees are trustworthy, believable, and honest.
Generally, this facility provides an environment that is free from danger, risk, or doubt.
Generally, the employees make the effort to understand my needs.
Generally, the physical facilities and employees are neat and clean.

Overall Service Quality

"Poor" 1 2 3 4 5 6 7 8 9 "Excellent"
"Inferior" 1 2 3 4 5 6 7 8 9 "Superior"
"Low Standards" 1 2 3 4 5 6 7 8 9 "High Standards"

Service Value (scaling from "very low" to "very high" on a 9-point scale):

Overall, the value of this facility's services to me is
Compared to what I had to give up, the overall ability of this facility to satisfy my wants and needs is

Satisfaction—SAT_1 (scaling from "not at all" to "very much" on a 9-point scale):

Interest—defined as attentive, concentrating, alert.
Enjoyment—defined as delighted, happy, joyful.
Surprise—defined as surprised, amazed, astonished.
Anger—defined as enraged, angry, mad.
Shame/Shyness—defined as sheepish, bashful, shy.

Satisfaction SAT_2 (scaling from "strongly disagree" to "strongly agree" on a 9-point scale):

My choice to purchase this service was a wise one.
I think that I did the right thing when I purchased this service.
This facility is exactly what is needed for this service.

Behavioral Intentions (scaling from "very low" to "very high" on a 9-point scale):

The probability that I will use this facility's services again is
The likelihood that I would recommend this facility's services to a friend is
If I had to do it over again, I would make the same choice.

NOTES

1. As a clarification, spectator sports are sports events that are viewed by customers, whereas participation sports involve the skilled physical interaction of the customer in the event (e.g., miniature golf and bowling). Entertainment events are non-sporting events where the customer either participates or observes and where physical skills are not required for participation (e.g., movie theaters and attractions/amusement parks).

2. A potential limitation of the SEM analysis of the hypothesized research model is the relatively low degrees of freedom (df = 9) achieved in the model testing. However, in each industry sample tested, the sample size (range: 167–450) is sufficient to obtain parameter estimates that have standard errors small enough to be of practical use (Anderson and Gerbing, 1988; Raykou and Widaman, 1995) even though the model approaches saturation (Babakus, Ferguson, and Jöreskog, 1987; Bentler and Bonnett, 1980; Jöreskog et al., 1999).

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