In uncertain markets, customer satisfaction offers firms a forward-looking metric to
gauge the health of their customer base.

Vikas Mittal and Carly Frennea outline key
research findings and ways to incorporate
customer satisfaction in firms’ strategic
planning processes.

Customer Satisfaction
A Strategic Review and Guidelines for Managers

Vikas Mittal and Carly Frennea
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Introduction

Superior customer satisfaction provides a clear strategic advantage and an inimitable resource for a firm—particularly in today’s complex and often uncertain markets. Two decades of academic research have quantified the impact of customer satisfaction on a number of beneficial customer behaviors and consequent financial performance. It is clear that firms that manage their customers as well as costs realize greater financial returns compared to firms that ignore customer satisfaction.

In the pages that follow, we provide a strategic overview of this research to enable managers to use customer satisfaction in the strategic planning processes of their firms. After defining customer satisfaction, we discuss how customer satisfaction is measured and analyzed, provide an overview of research on antecedents and outcomes of customer satisfaction, and offer recommendations for managers on how to achieve a successful customer-focused strategy.

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Understanding Customer Satisfaction

Many leading-edge firms strategically measure and invest in customer satisfaction (CS) initiatives, and for good reason: Satisfied customers are likely to repurchase, purchase more from the firm, engage in more cross-buying, and have lower service and retention costs. Satisfied customers may help a firm to lower the cost of customer acquisition through positive word-of-mouth and recommendations to friends and family. They have lower price elasticity, i.e., they are less likely to defect when competitors offer lower prices. They are also more forgiving: when there is an occasional product or service failure, highly satisfied customers may attribute it to external causes and stay loyal to the firm. New research also shows that strong customer satisfaction reinforces a firm’s reputation in areas such as corporate social responsibility and influences analyst recommendations, leading to a virtuous cycle of positive financial performance.

Defining customer satisfaction

Customer satisfaction is conceptually distinct from concepts of brand image, brand equity, corporate social responsibility (CSR), brand trust, and brand commitment, which represent general customer opinions and perceptions of the overall firm on a variety of dimensions. CS is specifically based on product usage or service experience, and therefore represents a narrower slice of the customer’s experience. From a strategic perspective, CS, brand equity, and CSR are all important to measure though their role varies in affecting a firm’s stakeholders. While CS provides a picture of the firm’s ability to satisfy its customers through its product and service offerings, brand metrics can tap into the firm’s broader relationship with both customers and non-customers.

Customer characteristics such as demographics, culture, involvement, and self-identity are related to their level of CS as well as to how CS affects their behavioral intentions. Further, customer attributions about the cause of high or low performance can influence their satisfaction judgments. For example, if customers encounter a delayed flight, their satisfaction judgment will vary depending on their belief about the cause of the delay (e.g., the weather or the airline’s logistics). Similarly, emotions such as anger and fear—caused by the consumption situation—can affect satisfaction judgments. Thus, a situation-

discussion about whether CS can predict abnormal stock-market returns, although additional data and theoretical development are needed to resolve this issue.

The strength of the CS-financial performance association can vary by industry. For instance, Anderson, Fornell, and Mazvancheryl found the association between CS and long-term firm value is relatively stronger in industries such as department stores, supermarkets, appliances, life insurance, and consumer electronics, but relatively weaker in industries such as property insurance, food processing, personal computers, apparel, and automotive. Other studies show that CS is best understood within the context of other factors such as a firm’s corporate social responsibility behavior, credit risk, market concentration, and efficiency.

Table 2 (pages 16–18) shows studies that have investigated the impact of CS on actual (as opposed to self-reported) behavioral metrics. In other words, the outcome variable in all of the studies was a customer behavior captured in a separate database through accounting, operational, or secondary efforts. These studies clearly establish that CS is associated with customer behaviors such as repurchase, duration of relationship, share-of-wallet, retention, cross-buying, sales, revenues, and profitability. These studies span a variety of industries such as banking, insurance, telecommunications, automotive, business-to-business, airlines, theater, and healthcare. Looking across the studies we conclude the effect of CS is a moderate to strong predictor of these behaviors. A notable feature of these studies is the use of sophisticated statistical techniques to isolate the association between CS and customer behaviors.

How Is Customer Satisfaction Measured and Used?

Firms measure CS using surveys that typically include overall customer satisfaction, behavioral intentions, attribute-level perceptions, contextual information, and customer background variables.

**Overall customer satisfaction** represents a summary evaluation of the overall experience and can be measured using scales such as:

1. *Overall, how satisfied are you with…?* (1 = extremely dissatisfied, 5 = extremely satisfied)
2. *Please rate your agreement with the following item: I am very satisfied with…* (1 = strongly disagree, 10 = strongly agree)
3. *How would you rate your experience with…?* (1 = poor, 7 = excellent)

Dozens, if not scores, of scales are in vogue, and they all adequately measure overall satisfaction. From a practical standpoint, it is important to ensure that a scale has face validity and finds acceptance not only in the marketing department, but also among other constituents in the firm.

**Behavioral intentions:** Also called “loyalty metrics,” these typically include likelihood to repurchase, likelihood to recommend, and likelihood to complain. Examples include:

1. *How likely are you to repurchase [brand] in the next six months?* (1 = not at all likely, 10 = completely likely)
2. *How sure would you be to repurchase [brand] in the next… months?* (1 = definitely not, 5 = most definitely)
3. *The next time you buy a [product], how likely are you to buy another [brand]?* (1 = definitely will not buy another, 2 = probably will not buy another, 3 = might or might not buy another, 4 = probably will buy another, 5 = definitely will buy another)

4. *Would you recommend this brand to your friends and family?* (1 = definitely will not recommend, 7 = definitely will recommend)

**Attribute-level perceptions:** Typically, the survey also measures performance perceptions on various attributes. Attribute-level performance ratings can be obtained using a variety of scales:

1. *Based on experience how would you rate…?* (Responses may be obtained as excellent, above average, average, below average, poor.)
2. *Rate the performance of each attribute using the following scale: excellent = 5, very good = 4, good = 3, fair = 2, poor = 1.*
3. *How did the product perform based on your expectations?* (Responses are obtained as: above my expectations, met my expectations, below my expectations.)
4. *How would you rate your satisfaction with…?* (1 = not at all satisfied, 10 = completely satisfied)

(Responses may be obtained for attributes like waiting time in office, quality of care, ability to get referrals, etc.)

Attribute evaluations, as discussed later, can be used to understand the key drivers of overall satisfaction.

**Contextual information:** Customers can be asked to evaluate their overall satisfaction and attribute satisfaction relative to their previous experience or a competitor. Asking customers to provide evaluations relative to these reference points—past performance and competition—can help firms to strategically benchmark its own performance.
Using customer satisfaction scores

Understanding the Customer Base
Comparing CS ratings among different customer groups can provide useful information to firms. These include “defectors,” potential customers who currently use competitive offerings but not the focal firm’s brand, and customers who concurrently use multiple brands. Among current customers, firms can measure satisfaction among newly acquired customers and customers with a relatively longer tenure with the firm. Understanding these patterns can help firms to optimize CS across the different stages of a customer’s relationship with the firm. It can also provide strategic insights into why customers may leave a firm and what can be done to retain them.

Longitudinal Tracking and Performance Benchmarking
Most firms conduct satisfaction tracking studies where CS is measured over time (e.g., every year, quarterly, or monthly). Tracking studies are particularly popular in service industries such as healthcare, hospitality (hotels, restaurants), retailing, financial services, banking, insurance, and utilities. A common finding in most tracking studies is the relative stability of satisfaction scores from one time period to another. One reason is that most tracking surveys draw a new sample of customers for each time period, and the resulting variability in the sample makes it difficult to detect subtle changes from one time period to another. While it would be more desirable to survey a panel of customers—in which the same customers provide ratings over time—high attrition rates from one time period to another make it impractical to use longitudinal panels for CS tracking. When looking at results of satisfaction tracking, firms should also pay attention to the relative variability (standard deviation) in satisfaction scores over time. The variability can indicate satisfaction strength—the relative strength with which satisfaction beliefs are held by a firm’s customer base—and can provide useful information. For example, if a firm’s mean satisfaction scores do not change much over time.
but the variance in the scores increases over time, this may suggest that some customer subgroups are becoming relatively more satisfied while other subgroups are becoming more dissatisfied.

For firms operating out of multiple outlets, CS studies are also used for benchmarking outlet performance. Firms can statistically adjust for outlet-level differences or they can examine subsegments of outlets that are deemed comparable. Finally, by combining both aspects—temporal and cross-sectional—a firm can make time-over-time comparisons for different outlets or subgroups of outlets as well.

In many firms, the CS score is tied to the compensation of the employees and managers of specific outlets. To the extent that CS is predictive of firm-financial performance and may not be as reactive to financial market volatility, it provides a stable and useful metric for comparing performance among various subunits of a firm.

**Diagnostics for Improving Overall Satisfaction**

A multiple regression model can be used to ascertain the relative importance of each attribute in determining overall satisfaction in a CS survey. The regression coefficient for each attribute provides a measure of its weight or importance in determining overall satisfaction. Concurrently, the firms performance on each attribute can be determined (e.g., as the top-two box score or average rating) to classify attributes into four groups and develop an importance-performance analysis.

This results in a 2 x 2 map where the Y-axis shows the relative performance and X-axis shows the relative importance of each attribute. Firms can use these importance-performance charts to develop concrete action plans for driving up CS.

The figure on page 6 outlines an importance-performance chart for an elevator service company and its competitor. As shown, improvements in “mechanic cleans up after job” and “problem is fixed right on the first call” are more strongly associated with overall CS than “service contract is competitively priced.” Regarding overall performance, the organization is rated as having higher performance on “mechanic cleans up after job” than on “elevators operate without noise.” Further insights can be gained by examining performance relative to a key competitor, or a “best-in-class” competitor. Thus, “problem is fixed right on the first call” is a priority attribute because: (1) it is very important to customers, (2) the focal organization scores low on it, and (3) its performance gap relative to a competitor is very large. Similarly, despite lower importance, “local office and support” may become a priority attribute because of the large competitive gap. A key limitation of this approach is that it does not incorporate the cost of performance improvement on various attributes.

New research shows the same attribute can have an asymmetric impact on overall satisfaction: The negative effect on overall cost of failing to meet expectations is a disproportionately stronger than the positive effect of exceeding expectations. An example of this asymmetry is shown in the figure above. For most attributes, the deleterious impact of failing to meet expectations is far more severe than the beneficial impact of meeting expectations. In most cases, not only is the impact of eliminating negative performance stronger on overall satisfaction, but it is typically cheaper to

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eliminate negative performance than enhance positive performance. Thus, smart firms always eliminate the negative before they accentuate the positive.

**Current practice**

In a recent study we interviewed over 120 managers in 35 different industries to gauge their CS practices. Results are summarized in Table 3 (page 19). Among others, they show:

1. CS measurement and reporting is now a widespread activity among most firms.

2. Over 90% of the firms used their CS study to examine current attribute-level and overall CS scores and compared them to past scores. Further, 92% of the firms conducted univariate analyses such as describing the mean and top-two box scores. While more firms are using advanced statistical techniques, more needs to be done to statistically model and understand the intricacies of linking CS to key outcomes and antecedents.

3. With respect to analysis, 38% conducted bivariate analyses such as two-way cross tabulations or correlation analyses and 8% conducted multivariate analyses. Fewer than 20% examined overall satisfaction and behavioral intentions, and only 3% related CS to actual customer behaviors.

4. The study also identified several areas of opportunity. For example, though many firms focus only on current customers, past and potential customers can also provide useful insights. Further, in many firms CS data are disseminated to employees. To get the maximum benefit, employees should be trained to use the data to identify root causes and to fix CS problems. Thus, a key imperative for firms is to train employees to use and apply CS research in improving their own performance and meeting customer needs.

These findings suggest that support from top management can ensure CS results are fully utilized in strategic decisions including, but not limited to, sales-force management, incentive and compensation planning, new product development, and market assessment.
Guidelines for Managers

1. **Optimize satisfaction investments by balancing costs and benefits.**

Firms should optimize their satisfaction investments by balancing the costs of measuring and improving CS with the revenue enhancements from improved CS. Rust, Zahorik, and Keiningham provide an excellent discussion of these issues.4 Firms should treat CS-related costs as an investment, and not a recurring expense. Using models such as the “satisfaction-profit chain,” a firm can ascertain the investments needed to obtain a one-unit improvement in overall CS, and then link each unit improvement in overall CS to behaviors related to financial performance. CS costs for a firm are related to satisfaction measurement (e.g., focus groups, satisfaction surveys, analyses) as well as satisfaction enhancement initiatives (e.g., product and process improvements designed to enhance attribute performance and overall satisfaction). While the costs associated with satisfaction measurement are easier to determine, they also constitute a relatively small part of total satisfaction investments. Costs associated with satisfaction enhancement initiatives may be relatively high and also require refined cost-accounting approaches for allocating costs. Similarly, when measuring the benefits of CS, firms should measure both the direct satisfaction benefits (increased sales through (re)purchase behavior) as well as indirect satisfaction benefits (increased sales through cross-selling, word-of-mouth, reputation enhancement, and lower cost of doing business: see figure on page 3). A scorecard that lists the different cost and benefits, the metrics and measurement sources (e.g., specific databases), the frequency of measurement (e.g., quarterly satisfaction ratings, monthly sales figures), and the statistical model used to link these various measures should be developed. The multivariate statistical models involved in developing the scorecard should account for extraneous factors and enable the firm to precisely isolate the effect of CS on the outcomes of interest.

2. **Use multivariate statistical techniques to create robust models of customer satisfaction.**

Understanding the characteristics of CS data and applying the appropriate statistical techniques to model the data are vital to gleaning useful and actionable strategic insights. Some firms collect data using a cross-sectional survey and attempt to link attribute performance to overall satisfaction, and then use overall satisfaction to predict behavioral intentions. The relative association between an attribute’s performance and overall satisfaction is also known as attribute importance. When ascertaining attribute importance some analysts use bivariate correlation analysis. Because it does not incorporate the joint effect of all attributes, conclusions from bivariate correlations can be misleading. Thus, multiple regression analysis should be used whenever possible. Within a multiple regression model, firms should also statistically control for customer characteristics and marketing conditions.

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Using covariates. However, multiple regression models can be plagued with high multicollinearity, particularly because attribute ratings and overall satisfaction ratings are obtained within the same survey. As such, many analysts explicitly measure and address multicollinearity issues to ensure that the key driver model includes attributes that have relatively unique associations with overall satisfaction.

After identifying key attributes that affect overall satisfaction, many firms also link customers’ attribute perceptions to operations and engineering variables. By statistically identifying and measuring the link between operations/engineering variables and attribute perceptions of customers, smart companies ensure that the customer’s voice guides the design of organizational systems and processes.

With overall satisfaction rating as the dependent variable, sophisticated analysts also recognize that the overall satisfaction scale is basically an ordinal scale with each successive scale point denoting a rank order. As such, some companies use logistic regression or ordered logit to account for an ordinal dependent variable. Some companies may use “top box” (e.g., completely satisfied) or “top-two box” (e.g., completely/somewhat satisfied) scores as the dependent variable in a binary logistic regression. The key idea is that a customer-focused company is interested in “completely satisfying” customers, and the logistic regression captures that idea. Similarly, another company may strategically decide to focus on customers who are “completely/somewhat” satisfied. It may then dichotomize the satisfaction scale accordingly.

In linking overall customer satisfaction to downstream outcomes, it is critically important to employ multivariate statistical models. After customers provide input on a CS survey, considerable time (weeks, months, or years) may elapse before they have an opportunity to engage in purchase behaviors. Moreover, many factors besides satisfaction (changes in income, for example) may affect the purchase behavior. Accounting for these intervening factors to statistically isolate the precise link between CS and its outcomes, therefore, requires advanced statistical techniques. Similarly, many factors can affect the link between CS-related customer behaviors and firm performance. This is one reason why simple bivariate correlations attempting to link CS and its outcomes may yield statistically non-significant results. Typically, we need longitudinal data that can statistically control for extraneous factors and estimate the unique association between CS and the outcome of interest. Not controlling for other potential factors—observable and unobservable—may run the risk of mis-estimating the association.

3 Leverage behavioral databases to build statistical models of satisfaction and its outcomes.

To understand CS outcomes specific to their firm, managers must develop behavioral databases linking CS ratings to outcomes. In particular, customers who fill out a satisfaction survey should be tracked (along with a comparison or control group of customers who did not fill out a satisfaction survey) on a variety of behavioral metrics using the firm’s own internal databases as well as external databases, if available.

Firms need to be strategic and creative in utilizing their IT systems in order to measure customer behaviors, which may include repurchase behavior, cross-buying, word-of-mouth, recommendation behavior, and complaint behavior, to name a few (see also Table 2, pages 16–18). The marketing department’s ability to capture data depends on cooperation from other departments such as sales, operations, finance, accounting, and IT. In one sense, leveraging this co-operation also represents a close partnership between the CSAT.
(customer satisfaction) and CRM (customer relationship management) approach to marketing.

4 **Incorporate the human factor—employees—in satisfaction improvements.**

For most firms—particularly service firms—the importance of front-line employees in creating satisfactory consumption experiences cannot be overstated. Many firms that track CS also typically track employees’ job satisfaction. A recent meta-analysis of 28 studies, mostly conducted in service settings, by Brown and Lam showed that job-satisfaction among employees is associated with service quality and CS, with service quality mediating the relationship. 5 In other words, the impact of job-satisfaction directly influences service quality, which in turn influences CS. Since CS is related to several customer behaviors and firm-financial outcomes (see tables 1 and 2, pages 14–18), we can conclude that employee job satisfaction, through its impact on CS, affects a firm’s financial health.

This finding has profound implications for co-managing employee satisfaction and CS. Articulating the employee satisfaction-customer satisfaction-financial performance link can enable a firm to design appropriate incentive systems that motivate employees to become more customer oriented.

Among the various antecedents of overall satisfaction—and service quality related to employees is only one of them—firms need to understand the relative impact of each antecedent. For some firms, e.g., an online trading brokerage, service outcomes based on employee behaviors may be less important than outcomes based on self-service technologies. For others, e.g., banks and hospitals, service quality outcomes related to employee behaviors may be critical to overall satisfaction. A study of Brazilian banks by Kamakura, Mittal, de Rosa, and Mazzon found human factors (e.g., satisfaction with tellers and bank managers) to be more consequential for profitability than technology factors (e.g., number of ATMs at a bank branch). 6

5 **Balance decreasing and increasing returns to satisfaction investments.**

Like any other marketing investment, the impact of CS on customer behaviors is somewhat complex: It can be non-linear, showing both increasing and/or decreasing returns. As an example of increasing returns, Kamakura et al.’s study of bank customers found satisfaction’s effect on bank balance was initially flat, but then turned positive at high CS levels. Other studies found each unit initial increase in satisfaction led to rapid increases in customer repurchase behavior (i.e., increasing returns to satisfaction), but after some time, there were decreasing returns to satisfaction in terms of repurchase behavior. This may occur because of firm-related factors (e.g., the firm may simply not have enough products or services for the customer to cross-purchase) or customer-related factors (e.g., having purchased two Toyota vehicles of the same brand, the customer may seek brand variety).

The underlying non-linearity can also differ for different outcomes such as repurchase behavior, word-of-mouth behavior, cross-buying behavior, profitability, and eventually firm value.

Firms can statistically estimate the non-linear relationship between satisfaction and the particular outcome variable of interest. Once the pattern has been identified, additional research—including in-depth interviews with customers and managers—may be conducted to understand why the pattern is non-linear.

6 **Satisfaction and segmentation go hand-in-hand.**

As shown in Table 4 (pages 20–21), there is increased evidence that even within the same firm or industry, satisfaction metrics can vary based on customer segments.

For instance, studies have shown that CS may be associated with customer commitment. 7 Studies show that females, older customers, and customers with relatively less education tend to be more satisfied. 8 Studies have also shown that companies


that cater to a more narrowly defined customer segment have, on average, higher satisfaction than companies with a more heterogeneous customer base.9

This also implies that the association between attribute-level performance and overall CS (attribute importance) varies by segment. For example, a study of airline customers found that drivers of CS for business travelers were very different than drivers for vacation travelers.10 Other studies are summarized in Table 5 (pages 22–23). We believe that defining segments based on customer needs (i.e., attribute importance) can be more useful than defining segments based on demographics. This perspective suggests that separate importance-performance maps should be developed for each segment to optimize CS.

A third segmentation perspective applies to satisfaction and its consequences. Even if two customer segments have similar levels of overall CS, the association between overall CS and purchase/switching behavior may differ by segment. This can occur if customers in the two segments face different switching costs. Research shows the association between CS and brand switching is stronger when customers have lower switching costs.11 The switching costs may be financial/contractual (e.g., contract and penalties for switching cell phone carriers), psychological (e.g., related to brand loyalty), related to time (e.g., time spent searching for information on alternatives), and sometimes regulatory (e.g., limits on switching funds in a pension plan).

Finally, firms must tie in their customer profitability analysis to their CS analysis at the segment level. Consider that the cost of satisfying customers can vary by segment. Similarly, the cost of acquisition and retention as well as the churn rate can vary by segments as well. Since all of these factors can impact segment-wise profitability, firms should jointly consider them in understanding the financial impact of their segmentation and satisfaction strategy. Based on this, once target segments have been identified, management should ascertain satisfaction levels and key drivers at the segment level.

7 Forge satisfaction alliances.

Satisfaction measurement and model development are initial steps, not the final destination, in a firm’s quest for satisfied customers and firm performance. To lead, smart CMOs focus on developing organizational structures, processes, incentive systems, and capabilities that leverage CS information.

As an initial step, CS information must be summarized in a way that is easy to understand and interpret by front-line employees (e.g., using importance-performance charts). Employees must also be trained to interpret such information tools and then empowered to act on them. Similarly, they should be incentivized (e.g., partly linking promotion and compensation to satisfaction and retention) to incorporate CS in their day-to-day work. Customer-oriented firms also invest in improving organizational structures and processes to address factors associated with lower CS. Each of these requires strong intra-organizational alliances and CEO leadership for strong implementation.

A key impediment to forging such an alliance can be siloed thinking. Thus, an integrative “end-to-end” measurement approach where CS is fully integrated with other marketing and strategic initiatives is needed. In this regard, technology integration can help by assuring that key pieces of information are readily available to all interested parties.


Conclusion

There is solid evidence that CS is a valid and useful marketing metric to gauge the health—current and future—of a firm’s most valuable asset, its customer base. To the extent a firm’s overall performance is related to the health of its customer base, CS is a strong indicator of a firm’s long-term health. Leading-edge firms are therefore using CS as an important metric that enables them to design, implement, and measure a customer-focused strategy. Such a customer-focused strategy can be implemented because CS is linked downstream to customer behaviors and financial outcomes, and linked upstream to attribute perceptions and operations/engineering metrics. Firms must invest in measurement capabilities, analytical capabilities, and implementation capabilities to understand the subtle nuances of making CS the basis for a customer-focused strategy. By providing an overview of the state-of-art research and best practices related to CS, we hope to help firms achieve such a focus.
### Table 1

**Strategic Impact of Customer Satisfaction (ACSI) on Financial Outcomes**

<table>
<thead>
<tr>
<th>Return on Investment/Assets</th>
<th>Cash Flow</th>
<th>Debt Financing</th>
<th>Stock Returns</th>
<th>Portfolio Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
</tr>
<tr>
<td>▶ 11.4% increase in ROI over five years$^1$</td>
<td>▶ $1.01 increase in cash flow (for every $1000 in assets), which translated to a $55M increase in cash flow for average firm in dataset with 9.36% market share and 4% decrease in cash flow variability$^3$</td>
<td>▶ 6% increase in credit ratings and 2% decrease in cost of debt financing$^7$</td>
<td>▶ 2-unit increase in stock returns$^8$</td>
<td>▶ Hypothetical and actual portfolios composed of firms in top 20% of ACSI outperformed the Dow Jones, NASDAQ, and S&amp;P 500.$^{11}$</td>
</tr>
<tr>
<td>▶ .37% increase in ROI for a goods firm and .22% for services that simultaneously increase CS and productivity$^2$</td>
<td>▶ .10 unit increase in net operating cash flows$^6$</td>
<td>▶ 5% decrease in stock value gap$^9$</td>
<td>▶ .17-unit increase in total shareholder returns$^{10}$</td>
<td>▶ Portfolio composed of firms with high levels of and increasing ACSI outperformed alternative portfolios and S&amp;P 500.$^{12}$</td>
</tr>
<tr>
<td>▶ 2.37% increase in ROI$^3$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▶ 1.3% increase in ROA$^4$</td>
<td></td>
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</tr>
</tbody>
</table>

**Note:** For each coefficient reported, the statistical significant is 5% ($p < .05$) unless otherwise noted.


10. See note 6.


## Long-term Financial Performance

<table>
<thead>
<tr>
<th>Risk</th>
<th>Other Firm Metrics</th>
<th>Effect on Other Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
<td><strong>1-UNIT INCREASE IN ACSI ASSOCIATED WITH:</strong></td>
</tr>
<tr>
<td>1.02% increase in Tobin’s $q$, which translated to an increase in firm value of $275M for average firm in dataset¹³</td>
<td>$1.88-unit decrease in systematic risk</td>
<td>Lagged changes in ACSI positively impacted consumer discretionary spending growth.²¹</td>
</tr>
<tr>
<td>.25-unit increase in Tobin’s $q$¹⁴</td>
<td>3.76-unit decrease in downside systematic risk</td>
<td>More positive analyst stock recommendations ($\Delta=1.31$) for a firm and smaller dispersion among analyst recommendations²²</td>
</tr>
<tr>
<td>.36-unit increase in Tobin’s $q$¹⁵</td>
<td>3.42-unit decrease in idiosyncratic risk</td>
<td></td>
</tr>
<tr>
<td>$1.61B increase in market value for firms that achieved a dual emphasis, i.e., were also efficient¹⁶</td>
<td>2.31-unit decrease in downside idiosyncratic risk</td>
<td></td>
</tr>
<tr>
<td>4.6% increase in market value of equity¹⁷</td>
<td>.29-unit increase in advertising and promotion efficiency</td>
<td></td>
</tr>
<tr>
<td>.26-unit increase in Tobin’s $q$</td>
<td>.33-unit increase in human capital performance²⁰</td>
<td></td>
</tr>
<tr>
<td>.10-unit increase in market share¹⁸</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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¹⁴. See note 8.


¹⁷. See note 11.

¹⁸. See note 6.


²⁰. See note 9.


### Table 2

**Customer Satisfaction and Customer Behaviors**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Referrals and Word-of-mouth</th>
<th>Repurchase and Cross-buying</th>
<th>Sales, Revenue, and Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Banking and financial services</strong></td>
<td>CS positively impacted word-of-mouth but more strongly for customers with longer relationship duration. 1</td>
<td>A 1-unit increase in average CS was associated with a 13-unit increase in number of services purchased per household. 2</td>
<td>Increase in spending on training programs to improve customers perceptions of firm’s service was projected to increase profits by $47,000 at optimum expenditure level. 20</td>
</tr>
<tr>
<td></td>
<td>Customers who switched from another firm due to their dissatisfaction were the most likely to engage in active loyalty behaviors—word-of-mouth, intention to cross-buy. 2</td>
<td>A 1-point increase in loyalty intentions was associated with a 17% higher likelihood of repurchase. 7</td>
<td>Increase in CS was associated with .25¢ increase in customer revenue. 19</td>
</tr>
<tr>
<td><strong>Telecommunications and entertainment</strong></td>
<td>A 1-unit increase in CS was associated with a 310.5-unit increase in future service usage for entertainment service customers and 34.6-unit increase for telecommunications customers. 8</td>
<td></td>
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</tr>
<tr>
<td><strong>Hospitality</strong></td>
<td>A 1-unit increase in CS was related to a .54-unit increase in word-of-mouth. 9</td>
<td></td>
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<tr>
<td><strong>Computing support</strong></td>
<td>CS influenced the decision to upgrade to higher margin product/service. 5</td>
<td></td>
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<tr>
<td><strong>Automotive and fleet trucking</strong></td>
<td></td>
<td>The relationship between CS and repurchase behavior exhibited increasing returns. 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS was associated with actual repurchase (b = .62). 11</td>
<td>CS was associated with actual repurchase (b = .62). 11</td>
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<tr>
<td></td>
<td>Filling out a CS survey was associated with a 3.5% increase in number of services purchased and a 5.6% increase in dollar amount spent on each purchase occasion. 11</td>
<td></td>
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</tr>
<tr>
<td><strong>Retail and grocery</strong></td>
<td>CS was positively associated with willingness to refer. 7</td>
<td>Relationship between CS and repurchase frequency was moderated by income and convenience with competitive intensity attenuating the moderating effect of convenience. 13</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Effect of CS on repurchase spending was moderated by involvement, income and convenience, with competitive intensity attenuating the moderating effect on convenience. 13</td>
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<td></td>
<td>CS with attribute performance was positively associated with intention to return. 15</td>
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<tr>
<td><strong>Insurance</strong></td>
<td>CS did not directly impact cross-buying.</td>
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<td></td>
<td>While CS did not increase the number of services purchased, low satisfaction may lead to abandonment of already purchased services. 18</td>
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</tr>
<tr>
<td><strong>Pharmaceutical</strong></td>
<td></td>
<td>CS was associated with actual repurchase (b = .61). 17</td>
<td></td>
</tr>
<tr>
<td><strong>Multiple industries</strong></td>
<td>The relationship between CS and word-of-mouth was asymmetric and U-shaped. Customers engaged in greater word-of-mouth as CS moved toward the extremes.</td>
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<td></td>
<td>Dissatisfied customers engaged in greater word-of-mouth than satisfied customers—2.6 times more in Sweden and 2.5 times more in the U.S. 3</td>
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</tr>
<tr>
<td>Industry</td>
<td>Share-of-wallet</td>
<td>Relationship Length</td>
<td>Retention</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------</td>
<td>---------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Banking and financial services</strong></td>
<td>A 1-unit increase in average CS was associated with a .02-unit increase in SOW.22</td>
<td>Intent to recommend positively associated with relationship tenure.31</td>
<td>Improving performance on attributes of satisfaction increased annual retention rate. A 1-unit increase in CS with most important factor (warmth) associated with .67% increase in retention.55</td>
</tr>
<tr>
<td></td>
<td>A 1-unit increase in intent to recommend was associated with a .27-unit increase in customer behaviors (share-of-wallet, relationship tenure, and number of transactions per month). The indirect effect of intent to recommend on profit (through customer behaviors) was .04.53</td>
<td></td>
<td>A 1-unit increase in average CS was associated with .03-unit increase in retention.34</td>
</tr>
<tr>
<td></td>
<td>There was a positive, nonlinear, and asymmetric relationship between CS and share-of-wallet, with the greatest impact on share-of-wallet occurring at the highest levels of CS.36</td>
<td></td>
<td>First-time customers who did not switch from another provider were the most likely to exhibit passive loyalty behaviors—switching intentions and willingness to accept price increases.51</td>
</tr>
<tr>
<td></td>
<td>A 1-unit increase in CS was associated with a .47 increase in share-of-wallet rank (relative to other institutions).</td>
<td></td>
<td>Satisfaction positively impacted willingness to remain with firm but was not the most important predictor.18</td>
</tr>
<tr>
<td></td>
<td>Share-of-wallet mediated the effect of CS on revenue.52</td>
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<tr>
<td></td>
<td>Changes in CS were positively and nonlinearly related to share-of-wallet.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Telecommunications and entertainment</strong></td>
<td>A 1-unit change in CS was associated with a 1.7-unit change in relationship duration.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Automotive and fleet trucking</strong></td>
<td>CS was associated with share-of-wallet ($b = .13$).27</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail and grocery</strong></td>
<td>Satisfied customers had higher share-of-wallet than less satisfied customers; 79% spent more than half their grocery budget with the company.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pharmaceutical</strong></td>
<td>CS was associated with share-of-wallet ($b = .14$).29</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Processed metal</strong></td>
<td>The relationship between CS and share-of-wallet exhibited increasing returns and was contingent on context.29</td>
<td></td>
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</tr>
<tr>
<td><strong>Multiple industries</strong></td>
<td>CS was positively associated with retention, $r = .41$.37</td>
<td></td>
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</tr>
</tbody>
</table>

Note: For each coefficient reported, the statistical significant is 5% ($p < .05$) unless otherwise noted.

### Table 2

**Customer Satisfaction and Customer Behaviors**


17. See note 11.


22. See note 6.


25. See note 19.


27. See note 19.

28. See note 4.

29. See note 11.


31. See note 23.


33. See note 18.

34. See note 6.

35. See note 2.

36. See note 1.

## Customer Satisfaction Implementation Practices

<table>
<thead>
<tr>
<th>Scanning</th>
<th>Fieldwork Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalization</td>
<td>73% of firms had formal CS data collection systems. Few integrated or used any additional informal customer feedback.</td>
</tr>
</tbody>
</table>
| Frequency         | The 37 firms engage in 78 different CS data collections. Range between 1 to 6, mean 2.11, mode 1. For CS collection among the 37 firms: Daily 41%
|                   | Weekly 8%
|                   | Monthly 22%
|                   | Quarterly 24%
|                   | Bi-annually 16%
|                   | Annually 30%
|                   | Less frequently 11%                                                                 |

| Measures and mechanisms | Attribute-level satisfaction 92%
|                        | Overall satisfaction 86%
|                        | Likelihood-to-recommend 54%
|                        | Purchase intentions 49%
|                        | Open-ended questions 49%
|                         | Mail surveys 49%
|                         | Telephone surveys 49%
|                         | “In venue” surveys 24%
|                         | Online surveys 14%
|                         | Focus groups 11%
|                         | Depth-interviews 5%
|                         | Mystery shoppers 5%

| Sampling approach     | All existing customers 100%
|                      | Competitors’ customers 11%
|                      | Separate “strategic” customers 19%
|                      | Lost customers 5%

<table>
<thead>
<tr>
<th>Analysis</th>
<th>78% did not integrate CS data with any other related customer data</th>
</tr>
</thead>
</table>
| Data integration     | Current attribute-level and overall satisfaction to past scores 92%
|                      | Attribute-level satisfaction to overall satisfaction 38%
|                      | Overall satisfaction to future purchase intentions 19%
|                      | Overall satisfaction to likelihood-to-recommend 5%
|                      | CS to subsequent customer behavior 3%
|                      | CS to internal performance metrics 3%                            |

### Table 4
Customer Satisfaction: Differences across Customer Groups and Segments

<table>
<thead>
<tr>
<th>Sample</th>
<th>Key Results</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Airline passengers</strong></td>
<td>► Segment 1 valued flight comfort and was composed of frequent business travelers, typically older males in white collar jobs.</td>
<td>► Focus on easily identifiable customer segments to deliver service they value most (segments 1 and 4).</td>
</tr>
<tr>
<td></td>
<td>► Segment 2 placed most importance on cabin crew and was composed of travelers in business class, typically in technical or skilled occupations.</td>
<td>► Prioritize segments most extreme in their attribute preferences (segment 1) over those who were relatively satisfied and less demanding of service performance (segment 3).</td>
</tr>
<tr>
<td></td>
<td>► Segment 3 did not have high performance expectations and was composed of young female vacationers in economy class.</td>
<td>► Consider self-selection as a means to provide segments with what they value (segment 2).</td>
</tr>
<tr>
<td></td>
<td>► Segment 4 was composed of frequent travelers of short flights who valued good meals and drinks.</td>
<td></td>
</tr>
<tr>
<td><strong>Telephone directory service users</strong></td>
<td>► Segment 1 was primarily female, mostly satisfied, and operator performance was most important.</td>
<td>► Cues provided by the caller should be used by operator to adjust the service interaction and meet customer’s particular needs.</td>
</tr>
<tr>
<td></td>
<td>► Segment 2 was composed of relatively more males, successful communication with operator was valued, and they were satisfied overall.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>► Segment 3 valued successful communication with operator, preferred to repeat information to phone operator, and were relatively dissatisfied with service attributes, likely due to their higher-than-average phone numbers not found.</td>
<td></td>
</tr>
<tr>
<td><strong>Theater patrons</strong></td>
<td>► For low relational customers (occasional subscribers and individual ticket buyers), overall satisfaction mediated the relationship between satisfaction component attitudes and future intentions.</td>
<td>► For low relational customers, transactional marketing focused on improving satisfaction was recommended.</td>
</tr>
<tr>
<td></td>
<td>► For high relational customers (subscribers), trust and commitment mediated the relationship between component attitudes and future intentions.</td>
<td>► Relationship marketing should target high relationship customers and focus on maintaining and building trust and commitment, not satisfaction.</td>
</tr>
<tr>
<td><strong>Credit card customers</strong></td>
<td>► Credit card statement and customer service were more important for new customers while loyal customers placed more emphasis on promotional benefits and adequacy of the credit limit.</td>
<td>► To attract customers, marketing should focus on quality of customer service and the user-friendliness of the credit card statement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>► To maintain the relationship, managers should assess the benefits and credit limit of their customers.</td>
</tr>
<tr>
<td><strong>Mutual funds investors</strong></td>
<td>► Trust, confidence, and courtesy were most important at the beginning of the relationship between customer and mutual fund advisor, while loyal customers were most concerned with efficiency.</td>
<td>► Trust and rapport were a necessary precondition to cultivate a long-term relationship between advisor and customers. Once achieved, the focus should turn to efficiency.</td>
</tr>
<tr>
<td><strong>Automotive buyers</strong></td>
<td>► Service was most important at the beginning of car ownership and the vehicle itself became most important as the relationship progressed.</td>
<td>► Manufacturers should focus on service at the beginning of the relationship and then the actual vehicle at later stages of the relationship.</td>
</tr>
<tr>
<td><strong>Bank customers</strong></td>
<td>► Customers differed in their valuation of soft/interpersonal and hard/non-interpersonal attributes.</td>
<td>► Prioritize most important quality in service delivery.</td>
</tr>
<tr>
<td></td>
<td>“Relaters” valued soft attributes—slightly skewed female, young (&lt;35 years)</td>
<td>► Management should strive to increase the importance among customers of that attribute type (hard or soft) on which the firm performs best.</td>
</tr>
<tr>
<td></td>
<td>“Nonrelaters” valued hard attributes—majority male</td>
<td>► Use demographic information to target three groups and develop quality-related messaging to each.</td>
</tr>
<tr>
<td></td>
<td>“Demanders” found every attribute important—majority female, almost half age 45–54</td>
<td></td>
</tr>
</tbody>
</table>

2. See note 1.
### Sample

<table>
<thead>
<tr>
<th>Key Results</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automotive customers</strong></td>
<td>- Relationship between CS and repurchase behavior differed based on customer groups. At the same level of satisfaction, the change in repurchase rate was:</td>
</tr>
<tr>
<td>- 1.4 for females compared to males, indicating the probability of repurchase higher for females than males at same level of rated CS (i.e., females were more tolerant)</td>
<td>- Firms should identify consumers with higher tolerance as a stable source of revenue and appropriate source to test new product ideas.</td>
</tr>
<tr>
<td>- 0.67 for those age 60 and above, indicating they were more tolerant compared to younger customers</td>
<td>- Changes in satisfaction ratings may impact repurchase behavior differently for each customer group.</td>
</tr>
<tr>
<td>.82 for those with one child in household, indicating they were less tolerant than those with no children in household</td>
<td>- The key drivers of overall satisfaction vary substantially by sub-group.</td>
</tr>
<tr>
<td>.45 for those with a college degree, .72 for those with post-graduate educations, indicating they were less tolerant than those with a high school education or less</td>
<td></td>
</tr>
</tbody>
</table>

- Response bias differs by customer characteristics, i.e., it was higher among women, consumers with no children in household, older customers, and less educated consumers. |

| **Oncology clinic patients** | - Salience of service attributes differed by length of customer relationship. Novice customers (attending clinic for less than six months) perceived tangible aspects of service and operation to be more important to service quality. Long-term customers (attending for more than three years) perceived atmosphere and outcome to be more important to service quality. Expertise was the most important attribute to both groups, but significantly more so for long-term customers. | - Attribute importance changed over the length of a customer experience with a firm. |

- Regarding drivers of behavioral intentions, service quality was most important driver for novice customers, while service satisfaction was most important driver for long-term customers. |

| **Commercial vehicle buyers** | - Customers considering only one manufacturer were less tolerant compared to those considering more. Companies with 10-50 employees had higher thresholds than those with more than 50 employees. Volkswagen customers had highest satisfaction thresholds compared to customers of other manufacturers. | - Identify satisfaction thresholds and responses biases. |

- Interaction with personnel was more important to satisfaction for females than males. Young travelers valued the aircraft and personal space more than older travelers, who find food and the flight process more important. Frequent travelers placed more importance on physical amenities (aircraft, food, personal space) than novice travelers, who valued interaction with personnel and on time arrivals/departures. Economy-class passengers placed more importance on interaction with personnel, the flight experience, and on time arrival/departures compared to first-class passengers, who found aircraft and food more important. | - Customers with similar satisfaction scores differ in their retention rates. |

- Monitor satisfaction scores of customer groups with low bias. |

| **Airline passengers** |  |

- Interaction with personnel was more important to satisfaction for females than males. Young travelers valued the aircraft and personal space more than older travelers, who find food and the flight process more important. Frequent travelers placed more importance on physical amenities (aircraft, food, personal space) than novice travelers, who valued interaction with personnel and on time arrivals/departures. Economy-class passengers placed more importance on interaction with personnel, the flight experience, and on time arrival/departures compared to first-class passengers, who found aircraft and food more important. | - Demographic and behavioral characteristics moderated the importance of different attributes. |

- Attribute importance information, along with that on cost, allows management to identify the best path to increase overall satisfaction. |

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5. See note 4.
Table 5
Attribute-level Drivers of Customer Satisfaction

<table>
<thead>
<tr>
<th>Sample</th>
<th>Key Results</th>
<th>Implications</th>
</tr>
</thead>
</table>
| 2,500+ software buyers                  | ► Seven drivers of overall satisfaction were identified, with capability found to be the most important. Driver importance varied across customer groups, as did stringency with which satisfaction was judged. | ► Improvement of drivers of satisfaction had substantial impact on specific customer segments. For example, an increase in capability shifted 7% of unsatisfied network product customers (satisfaction rating of 1-4 on 5-point scale) to very satisfied.  

| 325 retail banking customers            | ► The most important drivers of CS were core and relational performance, problem encountered, and satisfaction with problem recovery.  
► Core performance and problems encountered were determinants of intention to switch. | ► An unresolved service problem substantially impacted a customer’s attitude toward the provider, highlighting the importance of problem recovery in maintaining satisfaction.  
► If a customer experienced a problem that led them to complain, the customer’s intention to switch increased, no matter how the problem was handled by the provider.  

| 4,517 HMO patients                     | ► Negative attribute performance had a greater impact on CS and switching intentions than positive performance on same attribute.  
► Overall satisfaction exhibited diminishing sensitivity to each additional instance of positive performance, but not negative performance. | ► Positive and negative attribute performance asymmetrically impact CS and repurchase intentions.  
► Prioritize eliminating negative performance, then aim to increase positive performance.  

| 9,359 new car buyers                   | ► Negative disconfirmation on attributes like comfort, quality of vehicle, and maneuverability/handling had a greater impact on CS than positive disconfirmation on same attributes. |  

| 13,759 automotive customers            | ► Negative attribute performance had a stronger impact on CS than positive attribute performance.  
► Overall satisfaction exhibited diminishing sensitivity to each additional instance of positive and negative performance. |  

| 1,280 financial services customers     | ► A 1-unit improvement in product line shifted 12% of customers from not very satisfied to very satisfied.  
► A 1-unit improvement in financial reports shifted 5% of customers to very satisfied.  
► A 1-unit improvement in branch service shifted 5% of customers to very satisfied.  
► A 1-unit improvement in automated telephone service shifted 3% of customers to very satisfied. | ► Satisfaction with product offerings was the primary driver of overall satisfaction.  
► Identify customer segments to target the drivers of and to enhance overall satisfaction.  

<table>
<thead>
<tr>
<th>Sample</th>
<th>Key Results</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,206 automobile owners</td>
<td>◀ Relationship between attribute-level performance and CS shifted over time. Five of 10 attributes examined showed a significant shift from time 1 (after first service encounter) to time 2 (21 months later). Transmission and “wait before write up” were more important at time 1 than time 2. Brakes, honesty and sincerity, and vehicle ready at promised time were more important at time 2 than time 1.</td>
<td>◀ The impact of attribute-level evaluations on CS was not constant over time. Firms need to adapt their CS strategy as their relationship with customers evolves over time.</td>
</tr>
<tr>
<td>25,000 repeat Volvo buyers</td>
<td>◀ Vehicle performance had the highest impact on satisfaction. Overall satisfaction had a significant positive effect on profit per customer on next car purchased. Stated loyalty had no impact on profit.</td>
<td>◀ A 1-scale point improvement on the four quality areas by the dealers yielded 4% more in profits at next purchase. Contribution broken down as follows: personnel, 2.7%; available models, 5%; information, 2%; delivery, 6%.</td>
</tr>
<tr>
<td>Marketing officers of stock brokerage firms and retail stock traders</td>
<td>◀ Customers may determine sources of (dis)satisfaction differently depending on whether the encounter was interpersonal or technology-based. ◀ Customer attitude toward technology influenced their satisfaction with online trading.</td>
<td>◀ Companies should integrate both interpersonal and technology-based service encounters.</td>
</tr>
<tr>
<td>17,000 automobile owners</td>
<td>◀ Overall attribute satisfaction declines over time. Satisfaction declines at a greater rate for resolvable (e.g., transmission, brakes, and quietness) than irresolvable attributes (e.g., power and pickup, riding comfort, and handling). The effect of attribute satisfaction on CS with product quality increases over time for resolvable attributes but decreases for irresolvable attributes</td>
<td>◀ Attribute satisfaction declines over time, but the rate depends on attribute resolvability. ◀ It is important to understand how product quality assessments evolve over the long-term.</td>
</tr>
<tr>
<td>2,734 customers of a telecommunications service provider</td>
<td>◀ CS reduced churn ($b = -.06$). Affective commitment, when included with satisfaction, did not predict churn. Calculated commitment reduced churn ($b = -.04$).</td>
<td>◀ Include evaluation of performance (satisfaction) and the viability of competitive offerings (calculative commitment) in surveys to predict retention. ◀ Include prior churn in analysis to best understand the effect of satisfaction and commitment on retention beyond a priori customer propensity to churn.</td>
</tr>
</tbody>
</table>
Recommended Readings


The Marketing Science Institute

Founded in 1961, the Marketing Science Institute is a learning organization dedicated to bridging the gap between marketing science theory and business practice. MSI is a corporate-membership-based organization. In addition, leading researchers from universities worldwide participate in MSI research programs.

As a nonprofit institution, MSI financially supports academic research for the development—and practical translation—of leading-edge marketing knowledge on topics of importance to business. Issues of key importance to business performance are identified by the Board of Trustees, which represents MSI corporations and the academic community. MSI supports studies by academics on these issues and disseminates the results through conferences and workshops, as well as through its publications series.
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