

Growth that compounds

What is customer satisfaction?

Customer satisfaction is a judgement of the quality received against the quality expected. In one large survey, shortfalls weighed more than surpluses.

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Sinan Isoglu, MBA (Quantic) Commercial growth leader, lecturer and doctoral researcher	18 October 2026	12 min	2,623

Management summary Customer satisfaction is a customer's evaluation, after buying or using an offering, of the quality received against the quality expected. This concept guide defines it with Anderson and Sullivan's model, fitted to a survey of 22,300 Swedish customers in 1989 and 1990: satisfaction rose with perceived quality and with how far quality beat or missed expectations, a shortfall weighed more than a surplus, and repurchase intentions moved less with satisfaction at firms whose customers were more satisfied. It reports Keiningham et al.'s test of the Net Promoter Score against ten other metrics in 21 Norwegian firms, in which no metric was significantly correlated with revenue change, and gives a one-page record for reading a satisfaction score. Both studies are correlational.

Contents	§ 1	What is customer satisfaction?	2
	§ 2	Do expectations raise satisfaction directly?	3
	§ 3	Why does a shortfall count for more than a surplus?	3
	§ 4	How much of repurchase intention does satisfaction explain?	4
	§ 5	Does the Net Promoter Score predict revenue growth better?	5
	Figure 1	How eleven satisfaction and loyalty metrics correlated with revenue change in two industries	6
	§ 6	What are these findings not evidence of?	7
	§ 7	How should a team read its own satisfaction score?	8
	Figure 2	A satisfaction reading record	9
		References	11

What is customer satisfaction?

§ 1 of 7

It is a customer's evaluation of what they received, made against what they expected. Anderson and Sullivan (1993) start from the common view, which they take from Kotler, of satisfaction as an evaluation after purchase of product quality, given the expectations held before it. Their own model is more specific: "To begin, we posit satisfaction as a function of perceived quality and disconfirmation." Disconfirmation is the extent to "which perceived quality fails to match prepurchase expectations", and it can run either way, below expectations or above them. In their formulation satisfaction is the utility of the quality perceived, plus a gain or a loss when that quality differs from the quality expected, and "expectations affect satisfaction only via perceived quality and disconfirmation".

They fitted the model to "22,300 customers of 57 companies in Sweden in 1989 and 1990", a telephone survey designed to give a nationally representative sample of customers of large firms in industries from airlines and banks to personal computers and supermarkets. Each respondent rated satisfaction, repurchase intention, expectations, perceived quality, disconfirmation and how easy quality was to evaluate, each on a 10-point scale. Perceived quality combined two ratings, quality given price and price given quality, and the authors note that it therefore captures "the value provided by a product or service". The model was estimated separately for each firm in each year, 114 times in all.

In this guide, customer satisfaction means a customer's own evaluation, after buying or using an offering, of the quality received against the quality expected beforehand. It looks back on an experience the customer has had, and it is known only by asking. It is distinct from the intention to buy again, which it explains only in part; from the willingness to recommend, which is what the Net Promoter Score asks about; and from retention actually observed. Note also that the quality term in Anderson and Sullivan's¹ model is closer to value for money than to quality alone.

¹ Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, 12(2), 125-143.

Do expectations raise satisfaction directly?

§ 2 of 7

Not in Anderson and Sullivan's¹ data. The research they build on follows the expectancy-disconfirmation paradigm, in which, as they describe it, "Expectations provide a baseline or anchor for level of satisfaction" and disconfirmation moves satisfaction up or down from there. They tested that account against their own by adding expectations to the satisfaction equation: perceived quality could not be dropped from it, expectations could ($F = 35.18$ and 0.97 , $p. 138$), and their abstract reports the result plainly: "Surprisingly, expectations do not directly affect satisfaction". Expectations were positively related to perceived quality, the assimilation effect, but the authors note that it does "not explain a very large proportion of the variance in perceived quality", with an average R^2 of 0.08 . The coefficient for perceived quality was larger than both disconfirmation coefficients on average and in 105 of the 114 estimates, "suggesting that perceived product quality is more important for satisfaction and" retention than disconfirmation.

How easy quality is to judge also matters. Disconfirmation in both directions grew with the ease of evaluating quality: when buyers can tell high quality from low, "they are more likely to experience disconfirmation". The authors' reading is that when quality is "ambiguous or difficult to evaluate, then expectations will play a greater role in determining" satisfaction.

Why does a shortfall count for more than a surplus?

§ 3 of 7

Because, in these data, losses loomed larger than gains. Anderson and Sullivan¹ gave disconfirmation "both a negative and positive component with separate effects on satisfaction", shaped like the value function of prospect theory, in which a loss weighs more than a gain of the same size. Their abstract states the result: "we find quality which falls short of expectations has a greater impact on satisfaction and repurchase intentions than quality which exceeds expectations." In a joint test across all 114 estimates, the constraint that both effects are equal was rejected ($F = 2.19$, $p. 138$); the average coefficient was 0.80 for negative and 0.56 for positive disconfirmation (Table 4, $p. 137$); and the negative effect was the larger in 83 of the 114 estimates, which is 73 per cent (the paper describes this as "nearly 80%").

The authors draw two implications: that it is better for a firm to err on the high side when it sets an optimal level of satisfaction, and that, since negative disconfirmation "hurts the firm more than positive

disconfirmation helps it”, firms should protect reliability while they improve quality.

How much of repurchase intention does satisfaction explain?

§ 4 of 7

Some of it. In Anderson and Sullivan’s¹ data repurchase intention “is positively influenced by the level of satisfaction, as expected”, with an average coefficient of 0.58 on the two 10-point scales, but satisfaction accounted on average for about a fifth of its variance, an average R^2 of 0.19 (Table 4, p. 137). The authors suggest that the size of the intercept may mean that “other factors such as switching costs or switching benefits affect repurchase intentions”. Repurchase here is a stated intention: in their words, “Retention is reflected in Repurchase Intentions”, a rating, not an observed purchase. Customers actually lost are a different measure, which the [customer churn guide](#) defines, and the [voice of customer essay](#) sets out why what buyers say and what they later do can diverge.

The study’s last finding concerns which firms are most exposed. The model, built on Bayesian updating, predicts that customers of a firm that satisfies them consistently hold firmer expectations and revise them less after one poor experience; such customers “will be more forgiving”. The authors call this the insulation hypothesis. To test it, the authors computed for each firm how strongly repurchase intention responds to satisfaction, quality and disconfirmation, expressed as what they call retention elasticities, and correlated them with the firm’s average satisfaction, both taken as differences from the industry mean. The correlation was -0.19 for the satisfaction elasticity, -0.27 for the quality elasticity (Table 7; the text gives -0.29), and -0.20 and -0.30 for the negative and positive disconfirmation elasticities, each significant at 5 per cent (Table 7, p. 140). Their reading is that firms with higher satisfaction are less “sensitive to changes in satisfaction relative to other firms in the same industry”, which they liken to holding an insurance policy. They name the limit themselves: adjusting by industry means imposes many restrictions “given the small number of observations per industry”.

Does the Net Promoter Score predict revenue growth better?

§ 5 of 7

Not in the one longitudinal test of that claim in these sources, though that test measured association over the same years rather than forecasting. Anderson and Sullivan¹ opened in 1993 by noting that high satisfaction ratings “are widely believed to be the best indicator” of a company’s future profits. A decade later a similar claim was made for the Net Promoter Score, which the consultant Frederick Reichheld introduced in December 2003. It comes from one question: “First, survey respondents are asked to rate their likelihood of recommending a company”; the share rating the firm 6 or less, the detractors, is subtracted from the share rating it 9 or 10, the promoters, and “this difference represents a firm’s Net Promoter score”. Keiningham et al. (2007)², three business school academics and the head of consulting at a market research firm, report Reichheld’s claim that the score, “compared with other survey-based questions asked of customers”, “is the best predictor of growth” and that it is “the one number you need to grow”, and note that the evidence for its link to growth had not been “subjected to rigorous scientific scrutiny and peer review”.

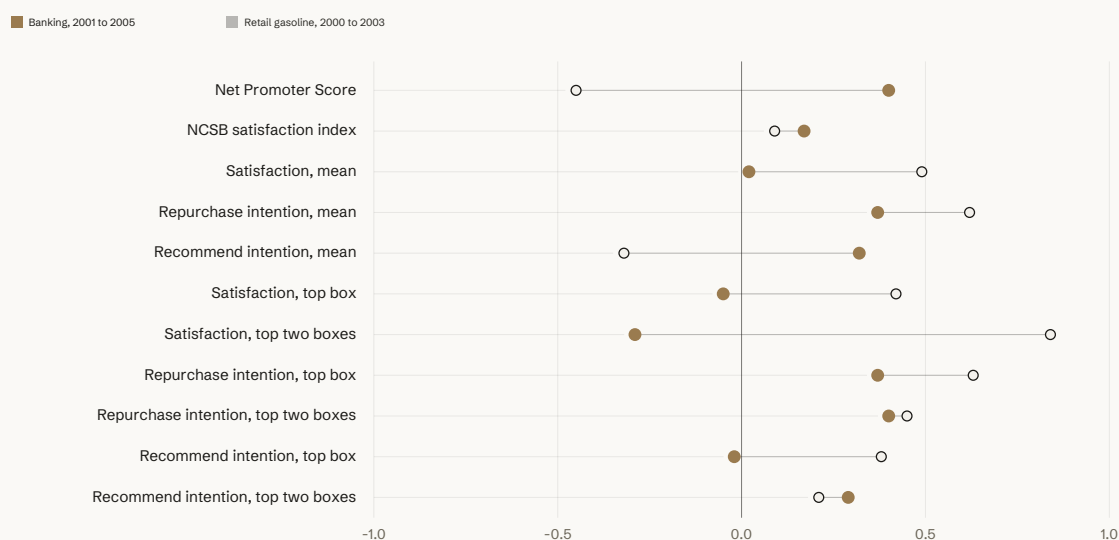
² Keiningham, T. L., Coolil, B., Andreassen, T. W., & Aksoy, L. (2007). A longitudinal examination of Net Promoter and firm revenue growth. *Journal of Marketing*, 71(3), 39–51.

They tested the claim that Net Promoter is the “single most reliable indicator of a company’s ability to grow” on the Norwegian Customer Satisfaction Barometer, using “longitudinal data from 21 firms and 15,500-plus interviews”, with two to four years per firm. The Barometer interviews customers drawn from a national probability sample of households about the service company they bought from. Its recommendation question used a 10-point scale, so the authors subtracted the share rating 1 to 6 from the share rating 9 or 10; they argue in an appendix that the scale, the question wording and cultural differences are unlikely to explain the gap between their results and Reichheld’s. From the same interviews they built ten other satisfaction and loyalty metrics: the Barometer’s satisfaction index, and overall satisfaction, repurchase intention and recommend intention, each as a mean, a top-box share and a top-two-box share. Like Reichheld, they correlated each metric with revenue change within industries, but over the same years for metric and revenue, because in Reichheld’s analysis “Net Promoter was tied to past growth rates”. Five industries, holding 17 of the 21 firms, had enough firms: banking, gasoline stations, home furnishings retail, security systems and local transit.

The null result held for every metric, not only for Net Promoter: “there is no real indication that average levels of any of the satisfaction/loyalty metrics in Table 1 are significantly correlated with the relative change in revenue within the respective industry”. A model allowed to choose among all eleven metrics and industry effects “did not include any of these metrics; it included only the most significant industry effects”. Figure 1 shows the pooled correlations for the two industries with several years of data.

Figure 1 How eleven satisfaction and loyalty metrics correlated with revenue change in two industries

None of the 22 correlations was significant, and the order of the metrics changed between the industries: Net Promoter was joint highest in banking and lowest in retail gasoline.



Horizontal axis: pooled correlation with the annual relative change in revenue, from -1 to 1. Each row joins one metric's correlation in banking (dark green) and in retail gasoline (brass). The p values run from 0.16 (satisfaction, top two boxes, retail gasoline) to 0.96; for the Net Promoter Score they are 0.20 in banking and 0.55 in retail gasoline.

Source Keiningham et al. (2007), p. 43, Table 1, pooled rows: partial correlations between the annual relative change in revenue and the average of each metric for that period, pooled across successive years and across the firms in the industry and adjusted for firm effects (retail gasoline also for lag-1 autocorrelation); banking over four annual periods, 2001 to 2005, retail gasoline over three, 2000 to 2003. Data from the Norwegian Customer Satisfaction Barometer. Values read from the page image.

In banking the Net Promoter Score's pooled correlation, 0.40, tied with the top-two-box share of repurchase intention as the highest; in retail

gasoline it was the lowest of the eleven, -0.45 , while the top-two-box share of satisfaction reached 0.84 . The three repurchase intention metrics were positive in both industries, from 0.37 to 0.63 , though none significantly. On this guide's reading, what the chart shows is that the order of the metrics changed from one industry to the next, not that any metric won.

Keiningham et al.² also compared Net Promoter with the American Customer Satisfaction Index (ACSI), which Reichheld had presented as unrelated to growth. Without access to Reichheld's raw data, they reconstructed his published scatterplots for three United States industries that the ACSI also tracks, "airlines, life insurance, and computers", and set the ACSI against the same growth rates. In two of the three cases, the ACSI's R^2 was higher than Net Promoter's. Their conclusion: "These results show that Net Promoter cannot be called the better predictor of growth in relation to customer satisfaction for the industries under investigation."

What are these findings not evidence of?

§ 6 of 7

They do not show that the Net Promoter Score is useless, or that satisfaction drives revenue. Keiningham et al.² write that they "have been careful to discuss the relationship between Net Promoter and changes in revenue and to avoid any suggestions of causality", and that the research bias they raise in the original analyses "has not been proved". They point to "the inherent difficulty of predicting firm revenue growth within an industry on the basis of a single attitude-based metric", and still expect "that a serious, longer-term, longitudinal study would show that changes in satisfaction/loyalty metrics are important predictors of relative changes in revenue within firms". Their industries held few firms each, all among the largest in their markets, which they note means "there is a possible restriction of range in the measures used".

Anderson and Sullivan's¹ evidence is one survey of customers in Sweden in 1989 and 1990, analysed firm by firm and averaged across industries from supermarkets to mainframe computers, with no results for business buyers on their own; repurchase is an intention, and the correlations behind the reputation effect lie between -0.19 and -0.30 , a relation the authors call strong but which rests, by their account, on few observations per industry. They also warn against treating more satisfaction as always better: "providing incentives to maximize customer satisfaction may actually be detrimental to" the firm, and their aim is an optimal level of satisfaction, not the highest. On pay, they write that their findings help explain why many firms include

satisfaction measures in compensation plans, and add: “However, future research needs to examine this issue more closely.”

On this guide’s reading, a subscription business can reasonably borrow three points from this evidence: satisfaction is a judgement against expectations, so one delivery can satisfy one customer and disappoint another; a shortfall against expectations is likely to count for more in satisfaction than a surplus of similar size; and a stated intention to renew is not a renewal. What the sources do not say is how large these effects are for business buyers, buying committees or renewals, or whether any survey metric, the Net Promoter Score included, forecasts revenue for a given firm.

How should a team read its own satisfaction score?

§ 7 of 7

With the expectation beside it, and with its link to revenue treated as untested until it has been tested. Figure 2 is a record for one reading of a score: what the customer was led to expect, whether delivery fell short of it or exceeded it, whether the customer could judge quality yet, whether the outcome is an intention or an observed renewal, what the score is compared with, and whether its link to revenue has been tested in the firm’s own accounts. The fields follow Anderson and Sullivan’s¹ model, their findings on the asymmetry, on ease of evaluation and on repurchase intention, and Keiningham et al.’s² findings and caution on metrics and revenue. Where a satisfaction score feeds an account-level index, the customer health score guide covers how it sits beside usage and relationship signals.

Figure 2 A satisfaction reading record

Write down the expectation, the gap, whether quality could be judged, the outcome, the comparison and the revenue test before a score is used.

Expectation	Gap	Judgeable	Outcome	Compared with	Revenue test
What was the customer led to expect?	Short of it or above it, and how far?	Could the customer judge quality yet?	Stated intention or observed renewal?	Which peers, segments or periods?	Tested in our own accounts?

Until the revenue test is done, read the score as a judgement, not as a forecast.

One row per reading. Read shortfalls and surpluses separately, and keep stated intentions apart from renewals.

Source Author's decision worksheet. The expectation and gap fields follow Anderson and Sullivan (1993), pp. 125 to 128 and 137 to 138; the judgement field follows Anderson and Sullivan (1993), pp. 139 and 141; the outcome field follows Anderson and Sullivan (1993), pp. 133 and 137; the comparison and revenue fields follow Keiningham et al. (2007), pp. 42 to 45 and 47. The fields are reader inputs; no company data is supplied.

An illustration, with no company data: a subscription software firm surveys account administrators two weeks after each quarterly release. The record notes what the release notes and the account team had promised, because a score means little without the expectation it was formed against. It reads accounts where the release fell short separately from accounts where it exceeded expectations, since in the Swedish data a shortfall went with a larger difference in satisfaction than a surplus. It asks whether the new feature is one that administrators can judge within two weeks, or only after a month-end close. It treats answers about renewing as intentions and checks them against the renewals that follow. And before the score enters a revenue forecast, the firm tests whether changes in it have tracked changes in revenue across its own accounts over several periods. This applies inside one firm the caution with which Keiningham et al.² close, on “the necessity of rigorously and scientifically testing measures

reported to be predictive of business outcomes before their widespread adoption”. These are the author’s examples and have not been tested.

 End of essay

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Sinan Isoglu, MBA (Quantic)

Commercial growth leader, lecturer and doctoral researcher
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