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Making customer satisfaction measures work - 4 Choosing the right attributes

Chuck Chakrapani

For a CSM system to be effective, we need to measure the right things, i.e., choose only those attributes that are relevant. Nobody purposely sets out to measure irrelevant attributes, but one often ends up measuring things that do not contribute to the understanding of customer satisfaction. More specifically, measuring the right attributes means four things:

1. Measuring attributes that are relevant to the mission of the organization;
2. Measuring attributes that contribute to customer satisfaction;
3. Avoiding measures that are no longer valid; and
4. Avoiding measures that are detrimental to customer satisfaction.

Start with the purpose: Mission statements

The first aspect of creating focused measurements relates to the organization's mission. What is the mission of the organization? Is it to provide exceptional service? Is it to offer the most competitive price? Is it being the most innovative company in the field? No matter what the company's primary mission, it should be explored in greater detail than other attributes. The main reason for this is it is unrealistic to expect the company to excel in all aspects that contribute to customer satisfaction. For instance, if an organization wants to be highly innovative and provide the highest quality service, it is unlikely to have the lowest price. If a firm expects to excel in an area, it follows that we need more information about customer reaction in that specific area than in other areas in which the organization proposes to provide only adequate service. When attributes measured pertain to customer satisfaction in areas in which the firm wants to excel, they provide specific inputs to the firm.

Derive importance scores: Measure attributes that matter

Measuring only those attributes that contribute to satisfaction comprises two aspects: 1) measuring attributes that contribute to satisfaction and 2) eliminating those that do not. Measuring the things that do not contribute to satisfaction cannot be considered harmless. Irrelevant attributes provide an illusion of comprehensiveness and, when there are too many of them, they may dominate the relevant attributes. We can get measurements on only those aspects of service we choose to measure. So, it is critical that we choose all the measures we need and eliminate those measures we do not need. While using our mission statement is one way of choosing the right attributes, it is also important that the attributes we measure do indeed contribute to satisfaction.

Customers are often asked to evaluate an organization on specific attributes such as, "How well did organization X do in terms of quick response?" Even if an organization gets a high score on a positive attribute, it does not follow that that attribute is important to consumers.

We can, of course, ask a corresponding question about the importance of each attribute (e.g., How important it is to you that an organization be quick to respond?) and plot importance against performance. This approach has two disadvantages. First, certain answers are inherently more probable. For instance, people might state that it is important that they not wait in line and yet this may not necessarily affect their satisfaction level. Second, it increases the length of the questionnaire since we need to ask an importance question for each attribute question. To overcome these problems, we can use what are known as 'derived importance' scores by relating the way customers rate an attribute to their level of satisfaction.

What are derived importance scores?

A derived importance score is any importance score that is *calculated* based on a respondent's answers to a set of questions. In other words, a customer does not have to tell us directly how important different attributes are in deciding satisfaction. The term 'derived importance score' is a generic term and does not necessarily imply the use of any specific measure. However, in customer satisfaction research, three techniques are commonly used:

coefficient of determination (R-squared), multiple regression and discriminant analysis.

A derived importance score is any importance score that is *calculated* based on a respondent's answers to a set of questions using techniques such as coefficient of determination (R-squared), multiple regression and discriminant analysis.

Coefficient of determination

The coefficient of determination is the correlation squared. Correlation is a simple statistic that measures how well two attributes are (linearly) related. For example, we can ask customers about a retail establishment:

Overall, how do you rate the quality of service provided by this company? and follow this by a series of evaluative questions such as

How would you rate this establishment in terms of

- Promptness of service
- Courteousness of staff
- Adequately trained personnel
- Knowledge level of staff

We can then correlate each of the rating questions with overall satisfaction.

Attribute	Correlation with overall satisfaction
Promptness of service	.73
Courteousness of staff	.80
Adequately trained personnel	.65
Knowledge level of staff	.40

Although correlation measures how well each attribute is related to overall satisfaction, correlation is not a good enough measure for assessing the importance of an attribute to overall satisfaction. The reason for this is that correlation is not a linear measure. For example, a correlation coefficient of .4 is not twice as large as a correlation of .2. This makes the comparison of the importance of different attributes intrinsically difficult.

A better measure of derived importance is the coefficient of determination or R-squared. This measure is obtained by taking the square of the correlation, which is a linear measure. Thus,

	r	R ²	R ² *100
Promptness of service	.73	.53	53%
Courteousness of staff	.80	.64	64
Trained personnel	.65	.42	42
Knowledge level	.40	.16	16

The coefficient of determination (R-squared) refers to the amount of variance explained, and it is interpreted linearly. Thus we can state that courteousness is four times as important as *knowledge* in determining overall satisfaction since R-squared is four times as large (16 versus 64).

Multiple regression analysis

If our aim is to assess the core set of attributes that contributes to customer satisfaction, we can use another technique known as multiple regression analysis. Given a set of attributes that influence customer satisfaction, multiple regression analysis identifies the fewest possible attributes that contribute to customer satisfaction as well as their relative importance. The input for this analysis could be customer rating of overall satisfaction for a given firm and the ratings of the same firm on performance attributes.

The output produced by multiple regression analysis will include the following:

- The attributes that contribute the most to customer satisfaction.
- Percentage variance explained by the attributes that contribute to customer satisfaction (the higher the percentage, the greater the contribution of the chosen attributes to customer satisfaction).
- The relative importance of the attributes included in the model (commonly known as the beta weights).

However, there are many weaknesses in this model. For instance, if two attributes are both highly related to customer satisfaction *and* if they correlate highly between themselves, then only one of the two will appear to influence customer satisfaction. For instance, if fast service and efficient service are highly correlated with each other and with customer satisfaction, then only one of the two (say efficient service) will be highly related to customer satisfaction. The other variable (fast service) is likely to be only weakly related to satisfaction. This problem is known as multicollinearity. As long as this problem exists, weights derived from multiple regression analysis cannot be used as indicating the relative importance of attributes.

Simple regression analysis

In simple regression analysis, we carry out a regression for each attribute separately, with some criterion variable such as overall customer satisfaction. Because we analyze one variable at a time, the problem of multicollinearity does not arise. What we get is a measure similar to coefficient of determination.

Discriminant analysis

Why do customers prefer one organization over another? What attributes contribute to this choice? To what extent do each of these attributes contribute to the choice? Questions like these are answered by discriminant analysis. In structure, as well as in its basic objective, discriminant analysis is very similar to multiple regression analysis. In multiple regression analysis, our aim is to understand the extent to which a set of variables (such as different performance ratings) affect another variable (such as customer satisfaction). In discriminant analysis our aim is to understand the extent to which a set of variables (such as different performance ratings) affect a customer choosing one firm over another.

Limitations of derived importance scores

While it looks attractive to use derived importance scores, they can be seriously misleading. Consider an attribute on which all firms are rated high or all firms are rated low. When this happens, attributes that show little variance will have low derived importance. The reason for this is all firms are rated the same irrespective of how they are rated on overall satisfaction. For instance consider the following illustration:

Firm	Overall rating	Convenient location
A	9	8
B	3	8
C	5	7
D	8	7

Although B scored very low on overall satisfaction, it is perceived to be as good as any other firm as far as convenient location is concerned. Although the overall ratings vary, the ratings on convenient location are more or less constant. Therefore, the derived importance of convenient location will be very low. But it does NOT mean that convenient location is not important. So when we compute derived importance, we should also look for attributes that show low variance. In such cases, it is the stated importance rather than the derived importance that is more reliable.

Which technique to use?

If we simply want to understand the relative importance of different attributes, correlation is preferred, since it is not affected by other variables in the set. If, on the other hand, we want to build a model to predict customer satisfaction with the least number of variables, multiple regression may be a better method. Finally, if we want to know why a customer chooses to belong to one group (e.g., customer of our firm) vs. another (e.g., customer of our competitor) we use discriminant analysis.

Correlation, multiple regression, and discriminant analyses, like all statistical tests, have their limitations. A basic understanding of statistical concepts is necessary to interpret the results correctly.

What if this is your first CSM quantitative study?

The above discussion assumes that you have done some preliminary quantitative research from which the results can be used to derive the importance weights. If no such research data are available, then derived importance scores cannot be used to select the salient attributes. In such cases, a larger number of attributes may be included in the questionnaire, based on qualitative research and the objectives of the firm. Once some quantitative data become available, then we can derive the importance of attributes and eliminate from the next study the attributes that do not contribute to customer satisfaction.

What criterion measure to use?

Most customer satisfaction studies use overall satisfaction as the criterion measure. The derived importance scores are simply a measure of how strongly each attribute contributes to overall satisfaction. This is an acceptable approach. However, as we mentioned earlier, CSM measures have been criticized as being unrelated to behavioural variables such as repeat purchase. In such cases, there is no reason why the criterion variable could not be repeat purchase, revenue from current customers or even, market share. If repeat purchase data are not available we can also use some proxy variables such as intent to buy the product the next time. In fact, we can use both hard (such as repeat purchase) and soft (such as overall satisfaction) measures and derive more than one set of derived importance scores.

Derived importance score is not a statistical term but a generic expression for importance weights obtained by a number of methods. Any applied book on statistics covering the techniques discussed in this section can be used to obtain further information.

Avoid measurements that no longer work

Over a period of time, the marketing environment changes. Even if we had been careful in choosing the attributes that relate to our mission and attributes that contribute to customer satisfaction, it does not follow that these attributes will be equally effective across time. Rapid technological changes can quickly change the factors that contribute to satisfaction. What contributes to a satisfactory transaction in a bank? Research might have shown that efficiency and pleasantness of the employee the customer deals with are the most critical factors. As more and more people start using electronic transactions, efficiency and pleasantness of the employee become less and less critical. At the same time, the ease and quickness with which the customer can access his or her account and carry out the required transactions can be more important in contributing to customer satisfaction.

It is therefore important that we not completely rely on the derived important scores of the past, but continually test them to make sure that they stay current.

Avoid detrimental measures

In measuring customer satisfaction, we should avoid measures that create a conflict between external and internal customers. A Canadian hotel chain had this sign posted at the check-in counter: "You are checked-in within 60 seconds or your room is free". It is unclear whether customer satisfaction is substantially affected by the fact that he or she was checked in within 60 seconds as opposed to two or three minutes. Yet, such a stringent standard (with uncertain benefits to the customer) is likely to create stress in the employee, leading to employee dissatisfaction. A measure like this can potentially create a conflict between the employee and the customer where the customer is seen as a challenge to be coped with. As Deming repeatedly emphasizes, dissatisfied or fearful employees can seldom be expected to provide quality service that leads to customer satisfaction.

Dr. Chuck Chakrapani of Standard Research Systems is a Toronto-based consultant, author and seminar leader. He works internationally. He is currently completing a book: How to Measure Service Quality and Customer Satisfaction which will be published by the American Marketing Association early next year.

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