

MIT Sampling Methodology

Survey Population

The survey will solicit feedback from four customer communities: faculty, researchers/other academics, students, and administrators. For some analysis, students will be broken down further into graduates and undergraduates.

Selection Criteria - All Communities

- Must have a MIT certificate.
- Must have an email address.

(This may exclude 600 persons not already excluded under the administrative category below.)

Selection Criteria - Faculty and Research Academic

- Tenured, Tenure Line, Appointment Line are included.
- Visiting faculty and research staff are not included.

Selection Criteria - Students

- Includes undergraduates and graduates.

Selection Criteria - Administrative

- IS&T staff are excluded - 200.
- Bargaining units are excluded - 800.

The table opposite presents a summary of the population and sample size estimates that result from applying the above criteria.

MIT Sample Size Estimates

Group	Target Sample Size	Anticipated Response Rate	Initial Sample Size
Faculty	100	20%	500
Research/Academic	140	40%	350
Graduate Students	100	50%	200
Undergraduates	100	50%	200
Administrative Staff	100	40%	250
Total	540	36%	1500

Notes:

- The Target Sample Size was derived assuming a Confidence Interval of .20 and a minimum Confidence Level of 95%.
- Assuming that the anticipated response rates are reasonably accurate, for any cumulative statistics each group will represent approximately 20% of the total. This will result in relative over weighting of the faculty and under weighting of graduate students. The other three groups are relatively close to their percent of the adjusted population.
- There may be some fluctuations in the population numbers by the time the sample is drawn for the survey, but the Target Sample Size and Initial Sample Size will remain the same.

Demographic Data

There will be an attempt to use a sample data source that includes demographic information such as gender, length of service, age, and academic year (students). Additional fields may be included.

MIT Response Rates

Group	Initial Sample Size	Target No. Responses	Actual No. Responses	Target Response Rate	Actual Response Rate
Faculty	500	100	138	20%	27%
Research/Academic	350	140	146	40%	41%
Graduate Students	200	100	112	50%	56%
Undergraduates	200	100	106	50%	53%
Admin Staff	250	100	144	40%	57%
Total	1500	540	646	36%	43%

Scale Modifications for the 2005 MIT IT Survey

by Harold Pakulat, MIT

Summary

There have been two major changes to most of the rating scales to be used in this year's client survey:

- The number of rating categories was increased from five to six.
- There were substantial changes to how the categories are defined.

In previous surveys we used five point satisfaction scales of the form:

Very Dissatisfied 1	Dissatisfied 2	Neutral 3	Satisfied 4	Very Satisfied 5	NA
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The six point scale we used this year is of the form:

Very Dissatisfied 1	Dissatisfied 2	Somewhat Dissatisfied 3	Somewhat Satisfied 4	Satisfied 5	Very Satisfied 6
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These changes should result in the following improvements:

- A greater ability to identify differences in the perception of services from one survey to the next; and between services within the same survey. This should result from the increase in the number of effective rating categories.
- Improved reliability and validity for rating questions by addressing the response problems associated with the ambiguity of the Neutral and NA options.

Some details and rationale for these scale changes are provided below.

Background

There are a wide variety rating scales but the five point scale is arguably the most common and its widespread use is largely a matter of familiarity or convention, rather than a deliberate choice of the most optimum scale. To some degree, all rating scales have problems with *contraction bias* and *satisficing* as discussed below. The changes to our rating scales are intended to reduce these problematic effects.

Contraction Bias

As discussed by Tourangeau (2002), contraction bias - the tendency to avoid the end points of rating scales - is a common phenomenon in survey instruments. This typically results in clustered responses towards the middle of a scale and consequently makes it particularly problematic to detect changes over time, and identify differences across questions within the same survey. We've observed this problem directly in our own results and those of other institutions. The fewer the number of scale points, the more problematic this effect may be.

Satisficing

The concept of satisficing was forwarded by Krosnick and Alan (1987) as a particular type of response bias in which there is a tendency for survey respondents to often use the path of least cognitive work to minimally comply with survey obligations. Krosnick, et al. (2002), used the satisficing model to examine the effect of no-opinion options in survey response and concluded that the “inclusion of no-opinion options in attitude measures may not enhance data quality and instead may preclude measurement of some meaningful opinions.” Our recent direct experience shows that the satisficing problem is further compounded by the ambiguity of Neutral or NA options, which appear to be used somewhat interchangeably by respondents.

Contraction Bias, Satisficing and the Number of Scale Points

Our strategy was to reduce contraction bias by increasing the number of scale points, and to moderate satisficing effects by using an even numbered “forced choice” scale without a neutral mid point, or other explicit no-opinion option. Respondents were instructed to simply skip questions that did not apply. This left a well defined problem of determining the maximum even numbered scale. In a review of the literature Krosnick and Fabrigar (1997) indicate that when there are greater than seven response categories, respondents fail to reliably distinguish between adjacent categories. This would indicate that since we wished to avoid an odd numbered scale with a neutral mid point, a six point scale should be optimal for our purposes.

Specific Changes to the Rating Scale

As noted above, our five point satisfaction scales have been of the form:

Very Dissatisfied 1	Dissatisfied 2	Neutral 3	Satisfied 4	Very Satisfied 5	NA
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The NA (Not Applicable) choice is not technically considered part of the scale because it is not included in computations for level of satisfaction. There is also the option of skipping the question which provides a seventh response option. Note that:

- Of the seven available responses above (1,2,3,4,5, NA, *skip*), three of them (Neutral, NA, and *skip*) provide no, or ambiguous, information.
- There are really only four choices for level of satisfaction (1,2,4,5).
- There is no obvious choice for a respondent who may “slightly” agree or disagree.

The six point scale we used this year is of the form:

Very Dissatisfied 1	Dissatisfied 2	Somewhat Dissatisfied 3	Somewhat Satisfied 4	Satisfied 5	Very Satisfied 6
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There is an additional seventh response option, which is to skip the question. Note that:

- All the numbered choices indicate some level of satisfaction or dissatisfaction.
- There is only one option for not providing information about level of satisfaction, and that is to skip the question.
- There is an unambiguous option for respondents who are only “somewhat” satisfied or dissatisfied.

Comparing Ratings between Five and Six Point Scales

A conversion process is required so that this years responses for the six point scale can be compared to the previous years ratings based on the five point scale. An additional 400 respondents were included in this years survey invitation, but these used a five point scale similar to those from previous years. Those responses were be used to develop a conversion table between the five and six point scales.

References

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