

Benchmarks

2000-02 Post-Stratification Weighting

Student cases were weighted for sex and enrollment status (full-time, less than full-time) with a post-stratification weighting algorithm to minimize nonresponse bias (Little, 1993). This resulted in the creation of four cells for first-year students and another four cells for seniors. The weight for student cell h is given by:

$$W_h = rP_h / r_h$$

Where r is the total number of institutional respondents of a given class, P_h is the 1997-98 IPEDS (for 2000 schools) or 1998-99 IPEDS (for 2001 schools) or 1999-2000 IPEDS (for 2002 schools) institutional proportion corresponding to cell h , and r_h is the number of institutional respondents in cell h .

If sex or enrollment status could not be determined for a particular student, no weight was assigned to this student. There were 2.1 percent missing values for student-reported sex. However, using sex provided by the institution when student-reported sex was unavailable, we were able to reduce the percentage of missing values for sex to .1 percent. In addition, 1.8 percent of the student-reported values for enrollment status were missing. In total, we were unable to assign weights to 2,993 out of 156,751 students (1.9 percent) due to missing values for sex or enrollment status. Further, 152 students (.1%) were not assigned weights because their corresponding institutional IPEDS proportion was zero for their particular cell.

If a student was not assigned a weight, s/he was not included in the calculation of her/his institution's benchmarks. To enhance the stability of the weighting procedure, students were assigned a weight of unity if r_h was less than 5.

In general, missing weights resulted in only modest losses of information for each institution. In fact, 92 percent and 96 percent of 2000-02 institutions had less than five percent missing weights for first-year students and seniors, respectively. Only one percent of institutions had more than ten percent missing weights for either class. When the number of students with missing weights permitted at these few institutions, we conducted t-tests to investigate whether students with weights had significantly different benchmark scores than students without weights. In the virtually all instances, we found that means on the benchmarks did not differ significantly for these two groups ($p < .05$, equal variances not assumed) at these schools.

Reference

Little, R.J.A. (1993) "Post-Stratification: A Modeler's Perspective". *Journal of the American Statistical Association*. 88:1001-1012.