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# Weighting the 1995 Year 9 Cohort Sample for Differential Response Rates and Sample Attrition Technical Paper No. 15

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### Abstract

This technical paper describes the weighting procedure developed for analysis of the first five (1995-1999) waves of the 1995 Year 9 sample (Y95) of the Longitudinal Surveys of Australian Youth (LSAY) study. The weighting procedure addresses three issues: (a) The original sample used a disproportionate stratified design. Students from States and Territories with smaller numbers of Year 9 students were oversampled and students from States with larger numbers of Year 9 students were under-sampled. Students from government, Catholic and independent schools were to be proportionately selected within States. In order for the sample to more accurately represent the population of Australian Year 9 students, the sample needs to be weighted so that sample sizes within strata are proportionate to the population sizes of the strata. In the first year of the survey (1995) the weighting compensates for the joint effects of differences in sampling fractions among the strata and differences in response rates among the strata. In subsequent years it also compensates for differences in attrition among the strata. (b) The initial sample consisted of schools selected with probability proportional to size. In order for each student to have an equal probability of selection, an equal number of students should be selected from each school. Since students were randomly selected in intact classes, different numbers of students were selected from each school. Schools must be weighted so that within strata the students from each school represent the same number of students. In the first year of the survey (1995) the school weighting compensates for sampling unequal numbers of students from each school. In subsequent years it also compensates for differences in attrition among the schools. (c) Students with different characteristics have a differing probabilities of responding to subsequent waves of the survey. Such differing probabilities reflect both the willingness of the respondent to participate in the survey and the availability of the respondent for interview. A post-stratification weighting schema attempts to compensate for such differential attrition by identifying a variable related to attrition and re-weighting the sample so that in any year the weighted sample reflects the original distribution of that variable. Gender and a combined measure of school achievement have been used in the poststratification weighting schema for the Y95 LSAY cohort.

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