This dataset is drawn from the HSLS:09 open dataset. Since this is not a thorough study. We chose to investigate the relation of student’s SES and 9th grade math ability with the high-school stem achievement.

The dependent variable:

X3TGPASTEM

High school final GPA in STEM courses

The independent variable:

X1SES

This composite variable is used to measure a construct for socioeconomic status. X1SES is calculated using parent/guardians' education (X1PAR1EDU and X1PAR2EDU), occupation (X1PAR1OCC2 and X1PAR2OCC2), and family income (X1FAMINCOME). For cases with nonresponding parent/guardians, 5 imputed values are generated (X1SES1-X1SES5), X1SES is computed as the average of the 5 imputed values, and the imputation flag is set as X1SES\_IM=1 (values for parent/guardian education, occupation, and income are set to -8). When education, occupation, or family income are imputed using other information provided by the responding parent/guardian, X1SES is constructed from the combination of actual and imputed parent/guardian values. For these cases, the values of X1SES1-X1SES5 are equivalent to X1SES and X1SES\_IM=2. Otherwise, the responding parent/guardian provided responses for all input variables so that the values of X1SES1-X1SES5 are again equivalent to X1SES and X1SES\_IM=0. For more information on this variable, please refer to section 7.3.2.2 and appendix k of the HSLS:09 Base-Year Data File Documentation (NCES 2011-328).

X1TXMTSCOR

The math standardized T score provides a norm-referenced measurement of achievement, that is, an estimate of achievement relative to the population (fall 2009 9th graders) as a whole. It provides information on status compared to peers (as distinguished from the IRT-estimated percent-correct score which represents status with respect to achievement on a particular criterion set of test items). The standardized T score is a transformation of the IRT theta (ability) estimate, rescaled to a mean of 50 and standard deviation of 10. An advantage of the standardized score over the raw theta score is that it facilitates comparisons in standard deviation units. See Chapter 2 of the HSLS:09 Base-Year Data File Documentation (NCES 2011-328) for more information on the derivation of the math T score.