

### Supplemental figure 1

Studentized residuals are plotted against hat-values, and the size of circle is proportional to Cook's distance. Observations 11433 and 35761 showed the largest Cook's distances, but their hat-values were moderate. Outlier, which is defined as observation with a response value that is unusual conditional on covariate patterns, can be examined using Studentized residuals. Observations that are far from the average covariate pattern (or regressor space) are considered to have high leverage. Leverage can be examined with hat value. Cook's distance is a measure of influence. Removal of an influential observation causes substantial change in the estimates of coefficient. The removal of the two observations did not significantly modify the regression model.

