

Combining modeling with survey weights

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Abstract

Statistical approaches such as multilevel modeling and poststratification (MRP) can be used for small-area estimation, extrapolation to unsampled groups, and adjustment for differences between sample and population. But challenges arise when applying these methods to real-world surveys that include weights. Weighted regression or weighted likelihood approaches can be statistically inefficient as well as being awkward to incorporate into a model-based framework. Conversely, model-based estimates cannot in general be expressed as weighted averages. We are working on an integrated approach that includes weights as a latent poststratification variable. In this talk we will show the success of this approach or discuss why it does not work as planned, or perhaps both!