SM 625: Week 8 Sampling Project Notes

Assume that you will decide to allocate your final computed n_{opt} number of clusters to each of the nine project strata based on the proportions of the total number of students in the population in each stratum (i.e., if 20% of the population of students comes from Region 1, you would sample 20% of your clusters from that region). Describe the first-stage sampling fractions for each stratum, where the total number of schools to sample at the first stage in each stratum is defined by your proportionate allocation of the n_{opt} clusters.

Next your team should extend your design to consider stratified PPeS selection of schools from each of the nine strata at the first stage of your sample design.

You have been provided with a sampling frame that lists the schools within each region. Given the information on the sampling frame, how might you sort this list to achieve implicit stratification within the regions? You can treat the overall student count from a previous year (tot_all) as the measure of size for the PPeS sampling. Given this information, compute your zone size for systematic PPeS sampling within each of the nine strata (regions), and proceed with systematic selection based on fractional intervals to select the allocated number of schools within each stratum using PPeS sampling. What is your first-stage sampling fraction within each of the nine strata?

Now, suppose that you have the entire list of sampled schools from a given stratum. As outlined in the project description, the client wishes to work under a paired selection model for estimation of sampling variance. How would you form pseudo-strata to meet this request, based on your systematic sampling within each first-stage stratum? We aren't ready to write the estimation methods section yet, but you can describe this general process as a part of the description of your first-stage sampling.

In future weeks, we will work on determining the sampling rates within each of the sampled schools to maintain epsem across the nine strata. For now, your focus should be on refining the description of the first-stage sampling process.