Subject: svyset for multilevel analysis of pooled dhs data
Posted by chiarap93 on Sat, 14 Nov 2020 17:39:22 GMT
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Dear all,

I am trying to do a multilevel analysis utlizing the most recent DHS survey from 30 Sub-Saharan African countries, to analyse determinants of infant mortality. In the multilevel analysis, the levels shall be child, mother and cluster (variable v001).

To apply weights correctly, I am relying on the valuable DHS methodological report that came out in August of this year, where a detailed explanation of how to construct level-specific weights is provided (https://dhsprogram.com/pubs/pdf/MR27/MR27.pdf)

I followed the procedure described in the document thoroughly, constructing woman-level and cluster-level weights for each of the 30 countries I am analysing.

Following this, I have appended all the datasets together, and relying on the replies to other queries on this forum I have constructed new variables for cluster, strata, and mother with the commands

egen cluster_pooled=group(v000 v001)
egen strata_pooled=group(v000 strata)
egen mother_pooled=group(v000 mother)

I am writing here because my model fails to converge, which makes me wonder specifically if I have used the svyset command in the correct way.

svyset cluster_pooled, weight(wt2) strata(strata_pooled) singleunit(centered) || mother_pooled, weight (wt1)

where wt2 is the cluster-level weight and wt1 is the woman-level weight, again created according to what mentioned in the DHS methodological report (for example, for the woman-level weight, denormalizing it by multiplying v005 by the ratio between the number of women in reproductive age in the country in the year of the survey and the number of women interviewed)

My model is something like:

svy: melogit infant_death (various control variables) i.country if childbornlast5years==1 || cluster_pooled: || mother_pooled:

The error message I receive is:

initial values not feasible
an error occurred when svy executed melogit

My original plan was even to include country as a fourth level of analysis, but I suspect this would further complicate things.

I was wondering if someone could
a) elucidate on whether the svyset is correct, as well as the use of weights like this
b) provide any suggestion on why the model fails to converge, and what shall I do to simplify things

Thank you lots!