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Subject: creation of level 2 weights for multi level models

Posted by [preshit](#) on Sun, 22 Sep 2019 21:47:06 GMT

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Hello DHS Forum,

Apologies in advance for lengthy post. I am using NFHS-2 and 4 (DHS India survey rounds) for the district level analysis. I have pooled both the surveys and have created analytical data set. I have already traced back all the districts from latest survey on the previous one. I wish to use multi-level regression model to take account of nested structure of the data and use fixed effects at the desired level (i.e. District and PSU). I am aware of the fact that level 2 weights (in my case for district) can not be generated. So I decided to assume all the districts in each survey had equal probability of being selected since surveys covered almost all districts in the country that time. Thus, level 2 weight variable takes value of 1.

My mixed model command-

```
melogit `dv' `iv' || district: || psu:
```

runs fine without an error. However, when I use both level weights with svy command, i.e. level 2 weight (wgt2=1) and level 1 weight(wgt) (wgt is re-normalized as DHS experts recommend for pooled data sets)

```
cap drop wgt2
gen wgt2=1
svyset, clear
svyset district,weight(wgt2) || psu, weight(wgt)
svy: melogit `dv' `iv' || district: || psu:
```

I get and error:

"weights in variable wgt not constant within groups defined by: district psu"

As per State forum, it might be because the number of observations vary for each district for two time periods. See [here-https://www.statalist.org/forums/forum/general-stata-discussion/general/1460027-error-weight-not-constant-within-id](https://www.statalist.org/forums/forum/general-stata-discussion/general/1460027-error-weight-not-constant-within-id)

I have gone through all relevant posts on DHS forum but could not find satisfactory work around to the problem. We all are waiting for guidelines from DHS experts on this front. Meanwhile, I had following questions for you-

1. Shall I represent my results without weights as Gary Solon's paper suggests?
  2. Is there any better alternative to create district level weight variable?
  3. Do I need to modify my level 1 weights? even after re-normalizing them before appending?
- What will be that procedure and can anyone provide Stata codes?

Any help on these questions is appreciated. I have read most of the relevant posts on both normalizing weights and multi level models in this forum. However, if I have missed any which can help me resolving the issue,then please share it if possible. Thank you so much for your time.

Regards  
Preshit

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