Subject: Multilevel modeling Posted by w@dhs on Tue, 12 Jul 2022 04:20:22 GMT

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We are following your recent guidelines in MULTILEVEL MODELING USING DHS SURVEYS: A FRAMEWORK TO APPROXIMATE LEVEL-WEIGHTS' file for weights calculation for domestic violence modules. So, for example, for Maldives, I've tried the following steps.

```
gen a c h=.
quietly levels of v022, local (Istrata)
quietly foreach Is of local Istrata {
tab v021 if v022==\lowerright\text{\text{Is}}, matrow(T)
scalar stemp=rowsof(T)
replace a_c_h=stemp if v022==`ls'
}
gen A_h = 0
replace A h = 433 if v022 == 1.... to replace A h = 54 if v022 == 21
gen M h = 0
replace M h = 51 if v022 == 1....replace M h = 68 if v022 == 21
gen m c= 928
gen M = 58277
gen S_h = 25
(*** I have applied wt already so, I skipped this step gen wgt = v005 / 1000000)
gen d_IR = wgt * (M/m_c)
gen f = d_IR / ((A_h/a_c_h) * (M_h/S_h))
local alphas 0 0.1 .25 .50 .75 0.90 1
local i = 1
foreach dom of local alphas{
gen wt2_i' = (A_h/a_c_h)*(f^{\infty}dom')
gen wt1_`i' = d_IR/wt2_`i'
local ++i
}
```

Then, I tried with the following svyset v001, weight(wt2_4) strata(v022), singleunit(centered) || _n, weight(wt1_4) svy: melogit outcome var i.indpendent var i.independent var i.independent var || v001:

I've got "no observation". So, I re-run the lines "local i=1, ...} separately or all together. Sometimes, I've got the results with only a coefficient without SEs, P-value, and 95% CI results.

But, if I run without svy: in front of melogit, it gives me the result. But when I run post estimation command without svy, the AIC and BIC value are the same for all models (I have 4 models: null model, and using variables of different levels), which does not make sense.

Q1: How can I fix it?

Q2: Also, I used svy:melogit. But, in such case, STATA does not allow to use the post estimation command estat ic, n(#).

The results showed when I omit svy command, again, the AIC and BIC values are the same. W Any suggestion for fixing it.

Thank you so much.

```
Subject: Re: Multilevel modeling
Posted by Janet-DHS on Fri, 15 Jul 2022 18:47:52 GMT
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```

Following is a response from DHS Senior Sampling Specialist, Mahmoud Elkasabi:

Yourcode has some mistakes, such as using the wrong values for v022 (I believe this is the reason for the errors) and the wrong number of completed HHs. Below a fixed copy of the code that works in my side.

```
gen a_c_h=.
quietly levels of v022, local (Istrata)
quietly foreach Is of local Istrata {
tab v021 if v022==ls', matrow(T)
scalar stemp=rowsof(T)
replace a_c_h=stemp if v022==`ls'
* check v022 values/labels
codebook v022, tabulate(99)
* A h total number of census clusters by strata
gen A h = 0
replace A h = 433 if v022 == 10
replace A_h = 41 if v022 == 20
replace A_h = 53 if v022 == 21
replace A_h = 32 \text{ if } v022 == 22
replace A h = 31 if v022 == 23
replace A_h = 50 if v022 == 24
replace A h = 28 \text{ if } v022 == 25
replace A h = 25 if v022 == 26
replace A_h = 25 \text{ if } v022 == 27
replace A h = 15 if v022 == 28
replace A_h = 22 if v022 == 29
replace A_h = 6 if v022 == 30
replace A_h = 14 \text{ if } v022 == 31
replace A_h = 11 if v022 == 32
```

* a_c_h completed clusters by strata

```
replace A h = 13 \text{ if } v022 == 33
replace A h = 29 \text{ if } v022 == 34
replace A_h = 33 if v022 == 35
replace A_h = 23 if v022 == 36
replace A_h = 32 if v022 == 37
replace A_h = 27 \text{ if } v022 == 38
replace A h = 54 if v022 == 39
* M h average number of households per cluster by strata
gen M h = 0
replace M h = 51 if v022 == 10
replace M h = 62 if v022 == 20
replace M_h = 64 if v022 == 21
replace M_h = 74 if v022 == 22
replace M_h = 65 if v022 == 23
replace M_h = 58 if v022 == 24
replace M h = 61 \text{ if } v022 == 25
replace M h = 62 \text{ if } v022 == 26
replace M h = 69 \text{ if } v022 == 27
replace M h = 65 \text{ if } v022 == 28
replace M h = 58 \text{ if } v022 == 29
replace M h = 50 \text{ if } v022 == 30
replace M_h = 63 if v022 == 31
replace M h = 59 \text{ if } v022 == 32
replace M_h = 68 if v022 == 33
replace M h = 60 \text{ if } v022 == 34
replace M_h = 70 if v022 == 35
replace M h = 69 \text{ if } v022 == 36
replace M_h = 74 if v022 == 37
replace M h = 56 \text{ if } v022 == 38
replace M h = 68 \text{ if } v022 == 39
* m_c total number of completed households (added from the HR dataset)
gen m_c= 6050
* M total number of households in country
gen M = 58277
* S_h households selected per stratum
gen S h = 25
gen DHSwt = v005 / 1000000
* Stage B *** Approximate Levels-weight ***
```

* Steps to approximate Level-1 and Level-2 weights from Household or Individual Weights

```
*Step 1. De-normalize the final weight, using approximated normalization factor gen d_HH = DHSwt * (M/m_c) gen dv_HH = (d005/1000000) * (M/m_c)

*Step 2. Approximate the Level-2 weight * f the variation factor gen f = d_HH / ((A_h/a_c_h) * (M_h/S_h))

* Calculating the levels-weight based on different values of alpha local alphas 0 0.1 .25 .50 .75 0.90 1 local i = 1

foreach dom of local alphas{ gen wt2_`i' = (A_h/a_c_h)*(f^`dom') gen wt1_`i' = d_HH/wt2_`i' gen d1_`i' = dv_HH/wt2_`i' local ++i
```

```
Subject: Re: Multilevel modeling
Posted by w@dhs on Tue, 19 Jul 2022 01:08:58 GMT
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```

Thank you so much. It helps. However, I still have two more questions related to the Philippines and Nepal data.

I am aware that there are some previous responses related to the Philippines. However, I still need to have some clarification. Please kindly see the file attached. Very much appreciated.

Sincerely

W

File Attachments

1) Multilevel modelling_Nepal_Philippines.docx, downloaded 359 times

Subject: Re: Multilevel modeling Posted by Janet-DHS on Thu, 21 Jul 2022 16:31:59 GMT View Forum Message <> Reply to Message

Following is a response from DHS Senior Sampling Specialist, Mahmoud Elkasabi:

Regarding the Philippines, you need to change tabulate (99) to tabulate (118) or to any number that is larger than 117 so all values/labels get printed.

Regarding Nepal, it looks like your problem is related to the melogit not to the clusters weight. Unfortunately, we cannot advise on that. However, I see from the error that it is related to the region codes; I would advise you to check the region variable.