
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.

* a_c_h completed clusters by strata

```
gen a_c_h=.
```

```
quietly levelsof v022, local(lstrata)
```

```
quietly foreach ls of local lstrata {
```

```
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 if v022 == 22
```

```
replace A_h = 31 if v022 == 23
```

```
replace A_h = 50 if v022 == 24
```

```
replace A_h = 28 if v022 == 25
```

```
replace A_h = 25 if v022 == 26
```

```
replace A_h = 25 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 if v022 == 31
```

```
replace A_h = 11 if v022 == 32
```

```
replace A_h = 13 if v022 == 33
```

```
replace A_h = 29 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 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 if v022 == 25
replace M_h = 62 if v022 == 26
replace M_h = 69 if v022 == 27
replace M_h = 65 if v022 == 28
replace M_h = 58 if v022 == 29
replace M_h = 50 if v022 == 30
replace M_h = 63 if v022 == 31
replace M_h = 59 if v022 == 32
replace M_h = 68 if v022 == 33
replace M_h = 60 if v022 == 34
replace M_h = 70 if v022 == 35
replace M_h = 69 if v022 == 36
replace M_h = 74 if v022 == 37
replace M_h = 56 if v022 == 38
replace M_h = 68 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  
}
```
