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Subject: Multilevel modeling with svy and domestic violence weights

Posted by [hbsheldon](#) on Tue, 26 Oct 2021 12:50:57 GMT

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Hello,

I am working on running a meprobit that looks at the determinants of domestic violence experience at the country-level (for several African countries, but with a regression for each country). I recently used this DHS Methodological Report 27 (<https://www.dhsprogram.com/pubs/pdf/MR27/MR27.pdf>) to estimate level 1 and level 2 weights for IPV acceptance (which is answered by all women, not just women in the domestic violence module). I am looking for recommendations on how to calculate level 1 and level 2 weights for domestic violence. Repeating the same procedure outlined in MR27 for the domestic violence weight yields weights that are inconsistent between groups for level 2.

1) Some other forums suggested using the geometric mean or a weight = 1 for level 2 weights. Which weight is preferred for level 2?

2) For level 1, would it be ok to use the domestic violence weighted version of the alpha values for level 1, or the domestic violence weight on its own? Based on my research, I am concerned that using the domestic violence weight without any sort of rescaling/manipulation would be incorrect.

Thank you in advance!

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Subject: Re: Multilevel modeling with svy and domestic violence weights

Posted by [Bridgette-DHS](#) on Wed, 27 Oct 2021 20:56:17 GMT

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

I would use the same procedures used in MR27 initiated with the DV weight, d005 as [gen DHSwt = d005 / 1000000]. All other steps should remain the same.

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Subject: Re: Multilevel modeling with svy and domestic violence weights

Posted by [hbsheldon](#) on Wed, 27 Oct 2021 21:16:13 GMT

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Thank you for your response! When I try the same technique as MR27 but only with replacing v005 with d005, I get the following error:

"weights in variable wt2\_domv\_4 not constant within groups defined by: v001"  
where wt2\_domv\_4 is wt2\_4 but for domestic violence.

Here's a comparison of weights by cluster below:

```
. list v001 wt2_1 wt1_1 wt2_domv_1 wt1_domv_1 v005_weight domv_weight in 1/50 if v044 == 1
```

```
v001 wt2_1 wt1_1 wt2_do~1 wt1_do~1 v005_w~t domv_w~t
```

```
-  
2. 1 1.5 8.878671 1.5 6.819981 .118748 .091214  
10. 1 1.5 8.878671 1.5 6.819981 .118748 .091214  
13. 1 1.5 8.878671 1.5 6.819981 .118748 .091214  
14. 1 1.5 8.878671 1.5 15.58844 .118748 .208488  
19. 1 1.5 8.878671 1.5 6.819981 .118748 .091214
```

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Subject: Re: Multilevel modeling with svy and domestic violence weights  
Posted by [Bridgette-DHS](#) on Fri, 29 Oct 2021 19:42:19 GMT

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

Yes, this is correct because the DV weight is calculated on the individual level and not on the cluster level as other weights. I would suggest approximating the wt2 using the women weight or the HH weight and then calculating wt1 based on d005 and the approximated wt2. See the Stata code below as an example.

```
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
}
```

```
svyset v001, weight(wt2_2) strata(v022) , singleunit(centered) || _n, weight(d1_5)
svy: melogit cumodern age secondary urban i.children || v001:
estimates store model2
```

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Subject: Re: Multilevel modeling with svy and domestic violence weights  
Posted by [ndeblingia](#) on Fri, 18 Mar 2022 02:45:32 GMT  
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Hello,

I am working on a similar analysis, with multi-level logistic regression models that include domestic violence experience as the dependent variable (India DHS dataset). I am following the guidance provided in MR27, and using the women weight (v005) to calculate wt1. The previous response from the DHS team mentions a Stata code but I do not see it. Could you please share it? Thank you very much.

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Subject: Re: Multilevel modeling with svy and domestic violence weights  
Posted by [hbsheldon](#) on Sat, 19 Mar 2022 09:51:42 GMT  
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The code was posted by Bridgette-DHS on Friday, October 29, 2021 at 15:42. There are also examples of code in the following paper: <https://www.dhsprogram.com/pubs/pdf/MR27/MR27.pdf> (see Appendix B for Stata Code).