Subject: Multi-level approximated weights
Posted by Alessandra tangianu on Sat, 04 Feb 2023 12:53:12 GMT
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Hello,

(I just realised I posted on the wrong forum, I intended to write in the "weighting data" forum)
However,
I have been following many threads on how to weight data for DHS surveys and learnt very much from this forum. I am doing a multilevel logit regression for 20 countries from sub-Saharan Africa and South Asia and I will look at community and country level variables. In the previous threads I could not yet find an answer to my question.

I understood the procedure and how to approximate level 1 and 2 weights following the MR27 report, but as I am also pooling many different countries together I am also de-normalizing and re-scaling the weights for each country in an equal way for each survey so that every country survey has the same weight. Moreover, domestic violence will be my dependent variable so I will have to use the d005 weight.

1. I was wondering in what order I should calculate these weights? Should I first give the equal weight and then calculate the multi-level weights?

2. At what point do I need to use them? For example, when simply inspecting my variables descriptively do I need to use the "normal" re-scaled weights or the approximated level weights ?

3. Is there any difference for domestic violence weights?

Thank you in advance for your help

Subject: Re: Multi-level approximated weights
Posted by Bridgette-DHS on Mon, 06 Feb 2023 18:17:17 GMT
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Following is a response from Senior DHS staff member, Tom Pullum:

MR27 includes some examples of when you would use the multi-level weights--that is, when you would need separate weights for clusters and individuals within clusters, rather than the product of those weights, which is v005 and is sufficient for most analyses. Strictly speaking, if your model includes cluster-level covariates that are aggregates of individual data (within clusters) or come from another source, such as the DHS spatial files, then you should use the separate weights. However, even for such a model, you can do preliminary analysis with just v005 (and svyset). When you shift to a multi-level model you are basically just expanding the svyset command to encompass covariates and sampling at both levels.

Subject: Re: Multi-level approximated weights
Posted by Alessandra tangianu on Tue, 07 Feb 2023 16:29:08 GMT
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Dear Tom,

Thank you very much for the reply! I have a few follow up questions as it is my first time doing this kind of analysis with such weights.

Yes, my aim would be to use cluster level aggregates, which in my case would be "community level domestic violence acceptance" which aggregates the acceptance of wife's beating variables.

So, if I understand correctly from your reply I could run my preliminary analysis and descriptives with just svyset v005 (without equalising it for all countries?)
and then I would have to weight my data for the 2 levels country by country. And finally expand the svyset with the 2 levels when I run my models. But like this I would have weights that are specific to each country.

But what if I want to know the "average" effect of these cluster level variables on domestic violence for all countries? And then see the separate effect?
With this I mean, what if I want to see whether community acceptance is in general a relevant moderator (for the pooled sample) and then see whether it is a particularly strong moderator for certain countries? Would I need to have a specific svyset where I have the "general" level 1 and level 2 weights?

Thank you!

Subject: Re: Multi-level approximated weights
Posted by Bridgette-DHS on Thu, 09 Feb 2023 14:07:44 GMT
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Following is a response from Senior DHS staff member, Tom Pullum:

For the "average" effect, I believe you are proposing to pool multiple surveys into a single file and then run a single model on the combined data. Although it is possible to do that--with difficulty--I'd recommend applying a similar model to the surveys one at a time. You can then synthesize or summarize by comparing the results from the surveys, using the "meta" commands in Stata or something similar. At DHS we avoid pooling surveys, unless they are successive surveys from the same country. There are conceptual, as well as technical, difficulties in pooling surveys from different countries.

Otherwise your strategy sounds good, and may be similar to something done in a recent DHS Analytical Study: https://www.dhsprogram.com/pubs/pdf/AS82/AS82.pdf.

Subject: Re: Multi-level approximated weights
Posted by Alessandra tangianu on Sun, 12 Feb 2023 09:12:44 GMT
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Dear Tom,

Thank you, your reply was really helpful and actually the publication you suggested is very close to what I would like to do. I read it and I think that I will try to follow their approach but applied to my specific variables.

I was wondering whether they pooled the surveys in one dataset and then ran the models for each country by always using if v000== or whether they did it on each separate dataset?

And regarding meta-commands: do you mean running a meta-analysis? Or summarising the results in one graph and comparing?
I am not familiar with meta commands. I did a brief research on what they are and there are many possibilities. I am mainly wondering if you know how they were used them this specific publication you sent?

I read that the authors wrote "cross-cutting findings" but it is not written whether this graph was is the result of a multi-level regression done on the three countries or a simple summary graph done perhaps with these meta-commands.

Thank you again in advance,

Alessandra

Subject: Re: Multi-level approximated weights
Posted by SaraDHS on Tue, 14 Feb 2023 14:12:04 GMT
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Hi Alessandra,
For the cross-cutting graph in AS82, we plotted the coefficients of each country-specific multi-level regression, run using the separate datasets, on the same graph using coefplot command in Stata.

I hope that's helpful!

Best,
Sara

Subject: Re: Multi-level approximated weights
Posted by Alessandra tangianu on Tue, 14 Feb 2023 16:47:56 GMT
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Dear Sara,

Thank you very much!

Subject: Re: Multi-level approximated weights
Posted by Alessandra tangianu on Wed, 19 Apr 2023 13:23:57 GMT
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Dear Sara,

As I am following the approach present in the AS82, I was wondering whether you could help with a question on the analysis.
I am running my multilevel logistic regression with melogit and svy set and I already constructed the multilevel weights. I do see in the analysis part of the AS82 publication that after using the melogit model with svyset you could calculate the VIF and check for multicollinearity. However, when attempting to do the same it is impossible to me as the command doesn't work and even after trying this command:

display "tolerance = " 1-e(r2) " VIF = " 1/(1-e(r2))

it does not seem to work. Would you have any suggestion on how to proceed?

Kind regards,
Alessandra

Subject: Re: Multi-level approximated weights
Posted by Bridgette-DHS on Mon, 01 May 2023 20:29:29 GMT
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Following is a response from Senior DHS staff member, Tom Pullum:

I believe you are trying to extract a stored (or saved) result. I don't know what your original command was, but maybe this will help. After an estimation command in Stata has been executed, you can enter this command: "ereturn list". This will give you a list of the stored results. For some commands (I don't know about the one you are using) one of the results that is stored as a scalar is e(r2). This is R-squared or pseudo R-squared. If e(r2) shows up, then you should be able to enter "scalar tolerance = 1-e(r2)" and "scalar VIF =1/(1-e(r2))" . Then you can do "scalar list tolerance VIF", which is like "display". For saved results that are matrices, such as e(b) or e(V) or r(table), you can save them with "matrix B=e(b)", etc. I looked at "help melogit", and under "stored results" I do not see e(r2) actually listed. Maybe it shows up for you, but maybe not.

A list of stored results from other commands, such as "summarize" will come up if you enter

"return list" (without the "e" for "estimation"). Hope this helps.