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Subject: Multilevel weights

Posted by [teketo](#) on Thu, 04 Oct 2018 10:35:59 GMT

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Dear DHS,

I am doing analysis on maternal health service use (modern contraception among married women, antenatal care, health facility delivery and caesarean section). I am analysing the 2016 Ethiopia DHS data using SAS software.

I am just wondering how I can use Multilevel weights for this analysis. It will be great if I can get solutions how it will be done using SAS.

I am using a two level random effects model (Level 1: individuals, and Level 2: regions) for modern contraception among married women, antenatal care and health facility delivery. Moreover, for caesarean section, a three level random effects model (Level 1: individuals, Level 2: clusters and Level 3: regions) using MCMC method.

The other question I have is what should be the maximum number of a grouping (membership) variable? To make it clear, just have a look the following SAS Proc glimmix program:

```
Proc glimmix data = care;  
Class region V001;  
Model y (event = last) = a b c d e f g h i / solution;  
Random intercept e f g / solution subject = region;  
Random intercept a b c d / solution subject = V001 (region);  
Run;
```

The grouping variables showing how one is nested within the other on the above SAS code are region level 3 (there are 11 regions) and V001 level 2 (there are 622 clusters). We are asking the program to produce random effects for each of the 11 regions and the 622 clusters. It will have a convergence issue it will take long time to process and even might stop processing.

Regards  
Teketo

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Subject: Re: Multilevel weights

Posted by [Liz-DHS](#) on Wed, 17 Oct 2018 19:48:54 GMT

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Dear User, A response from Senior Sampler Dr. Mahmoud Elkasabi:

Quote:

Regarding the first question, we do not have specific guideline to be used in this situation. See Dr. Tom Pullum's answer to a similar question. Please follow this thread for a similar question.

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