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Subject: Question on using weights for svyset and finding ICC in svy:melogit

Posted by [jisoojoykim](#) on Wed, 14 Jun 2017 07:53:27 GMT

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Hello DHS experts,

I have two challenges that I have been struggling with.

1. I am using the Kenyan SPA dataset and merged the facility audit and ANC client exit interview. Therefore, I have two weight variables: one for facility and one for client-level. In setting up svyset, I have been using the following command

```
'svyset facil, weight(facilityweight) strata(strata5) singleunit(centered) ||_n, weight(clientweight)'
where facilityweight=facwt/1000000 and clientweight=clientwt/1000000
```

However, I got confused, whether the clientweight should be the weight of client being selected ( $w_{ij}$ ) or the weight of client being selected within a facility ( $w_{ijj}$ ).

This quote is from STATA meglm manual - complex survey data (p. 21)

"it is not sufficient to use the single sampling weight  $w_{ij}$ , because weights enter the log likelihood at both the group level and the individual level. Instead, what is required for a two-level model under this sampling design is  $w_j$ , the inverse of the probability that group  $j$  is selected in the first stage, and  $w_{ijj}$ , the inverse of the probability that individual  $i$  from group  $j$  is selected at the second stage conditional on group  $j$  already being selected. You cannot use  $w_{ij}$  without making any assumptions about  $w_j$ ."

Is this method of weighting only applied in meglm? or does it also have to be applied in svyset as well?

2. I am trying to fit a multilevel mixed-effects logistic regression using svy:melogit. I want to find out the ICC (Intraclass correlation coefficient) for the effect of facility-level on the outcome in my model. In the regular melogit, I could use 'estat icc' to get the ICC, but 'svy' does not support 'estat icc'. I tried to include weights in my melogit model, as it would theoretically give the same answer. However, after including weight, I was also not able to get the ICC using 'estat icc'.

After ' melogit intdel [pweight=clientweight]||| facil: , pw(facweight) or', I get:

```
estat icc
estat icc not allowed after estimation with robust standard errors
r(321);
```

Is it theoretically not possible to get the ICC after multilevel mixed-effects logistic regression with survey weights? Or is there a way to find this in STATA, without using 'estat icc'?

Thank you in advance for your answer.

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Subject: Re: Question on using weights for svyset and finding ICC in svy:melogit  
Posted by [Bridgette-DHS](#) on Thu, 15 Jun 2017 16:52:23 GMT  
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Following is a response from DHS Senior Research Associate, Shireen Assaf:

The client weight is conditional on the facility. All the clients from the same facility have the same weight. However, I would still set up the svyset as you have.  
For your second question, I believe that it is not theoretically possible to obtain the ICC. However, as this is not a DHS question, perhaps posting it in the Stata user forum would provide you with some other recommendations.

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Subject: Re: Question on using weights for svyset and finding ICC in svy:melogit  
Posted by [jisoojoykim](#) on Fri, 16 Jun 2017 00:05:51 GMT  
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Thank you so much for your answer Shireen.

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