
Subject: Sampling weight calculation

Posted by [Mahir](#) on Thu, 18 Jul 2024 15:00:28 GMT

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Dear DHS team,

I would like to understand the calculation behind the sampling weight in DHS survey. I have gone through the multilevel modelling manual and I just want to make sure what I have understood is correct. Let me know if my explanation for sampling weight calculation is correct.

First $P(h_i) = a(h) * M(h_i) / M(h)$

Let's assume that there are 5 strata/region in a country and I want to calculate the sampling weight for strata/region 1. Let's assume there are 12 clusters in strata/region 1 and we select 6 of these for sampling. If there is a total of 5000 households in region/strata 1 that means $M(h) = 5000$ and if there are 90 households in one of the 6 clusters selected for sampling $M(h_i) = 90$ this means $P(1h_i) = (6*90)/5000 = 0.108$

Now $P(2h_i) = s(h_i)/L(h_i)$

Let's assume that total number of households in one of the selected cluster for sampling is 500 ($L(h_i)$) and total number of households selected for survey in the cluster are 90 ($s(h_i)$). this means $P(2h_i) = 90/500 = 0.18$

Now sampling weight $d(h_{ij}) = 1/(P(1h_i)*P(2h_i))$

this means $d(h_{ij}) = 1/(0.108*0.18) = 51.44$

I have attached a sample figure I created on my own. Could you tell me if my explanation is correct?

If not, you explain what is wrong in my example.

Thank you for your help

Best
Mahir

File Attachments

1) [DHS_sampling_weight.png](#), downloaded 43 times
