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Subject: calculating sample size for two-stage sample  
Posted by [aina2233](#) on Wed, 01 Jun 2016 18:44:10 GMT  
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I am reading the DHS Sampling and Household Listing Manual (published in Sept.2012, ICF International, Calverton, Maryland USA). I got confused from page 10 (reading in Word the Manual), chapter 1.6.2. Sample Size Determination. Since I want to achieve the results, provided in the table below on that page, using the provided formula for calculating sample size, and I can't get the identical results:

$$n = \text{Deft}^2 \times \left( \frac{1/P - 1}{\text{divided by } a^2} \right) / (R_i \times R_h \times d)$$

and the values are in the manual's table as copied below. For calculating sample size n for RSE 0.10 I am multiplying 1,4 squared x (1/0,2 - 1) / 0,1 squared / (0.96 x 0.92 x 1,05)

and cannot get to the same number as in the table (846) . I used also half of RSE 0.05 squared, but can't get the same number 846. If you can help me, what I am doing wrong? Since I want to be confident in using formula for sample size calculation (intended for two-stage sample).

From Manual's Table:

|                                |                      |                            |             |
|--------------------------------|----------------------|----------------------------|-------------|
| Estimated proportion p         | 0.20                 | Total target population    | (blank)     |
| Estimated design effect (Deft) | 1.40                 | # of target individuals/HH | 1.05        |
| Individual response rate       | 0.96                 | HH gross response rate     | 0.92        |
| Desired Net Sample             | Sample size Expected | 95% confidence limits      |             |
| RSE size individual            | Household SE         | Lower                      | Upper       |
| 0.12                           | 544 587              | 0.024                      | 0.152 0.248 |
| 0.11                           | 648 699              | 0.022                      | 0.156 0.244 |
| 0.10                           | 784 846              | 0.020                      | 0.160 0.240 |
| 0.05                           | 3136 3382            | 0.010                      | 0.180 0.220 |