

# Chapter 8

## Special cases in weighting



## 1. Sampling of individuals, estimates for clusters such as households

**Question:** How to estimate household level estimates such as the household composition or average household size, if the sampling units are individuals?

This occurs in the European Social Survey, and it is possible that a user just makes his/her estimates as for individuals. This however leads to incorrect estimates. Why?

Since the individual weights are summed up to 15+ population, the estimates using such weights are concerned respective individuals. We however need to know the estimates of households. The number of households for each unit is obtained by dividing the individual weight with the number of 15+ persons. Thus nothing is needed if the 15+ size is =1 but in the case of larger households, the weight will be smaller respectively. Table 8.1 is based on the ESS individual basic (or design) weights dividing these by the number of 15 years old members of each:

$w\_basic\_Households = w\_basic\_individuals / \text{members 15 Plus.}$

**Table 8.1. Average household size by country with correct and incorrect weights, ESS Round 7. The countries are sorted by the correct estimates**

<b>Country</b>	<b>Individual weights</b>	<b>Household weights</b>
Austria	3.05	1.89
Finland	2.36	1.98
Estonia	2.50	2.06
Sweden	2.61	2.10
Denmark	2.55	2.16
Norway	2.62	2.19
Germany	2.84	2.19
Switzerland	2.76	2.30
Netherlands	2.84	2.42
Belgium	2.95	2.45
Czech	2.83	2.46
Slovenia	3.14	2.55
Ireland	3.13	2.60
Poland	3.31	2.68
France	3.20	2.81

## 2. If analysis weights only are available but the proper weights are required

This was one training task.

population size is obtained. This respectively gives the proper weights with this formula

$$w_k = 10000d_k w_P$$

in which  $d_k$  = the ESS analysis weight and  $w_P$  = the ESS population weight.

Chapter 8 includes also two panel based examples.