

## Sampling and Sample Size

### Section: Use survey routines to calculate estimators and standard errors

#### Exercise

Use a syntax file in stata to:

1. Recalculate estimators from last exercise by using survey routines and compare with ordinary statistics

Saved under	Design	Detail	Sample Size
SRSWOR.dta	SRS WOR		n=20
SRSWR.dta	SRS WR		n=20
SYS.dta	SYS		n=20
STRATPROP.dta	Stratified proportional	f=1/5	n=20
STRATDISPROP.dta	Stratified disproportional	n <sub>h</sub> =5	n=20
S1SCS.dta	Simple one stage cluster sampling = S1SCS	k=2	n=30-70
S2SCS.dta	Simple two stage cluster sampling = S2SCS	k=2 n <sub>h</sub> =10	n=20
PPSWR.dta	PPS (probabilities proportional to size) <b>WR</b>	k=2 n <sub>h</sub> =10	n=20

f = Sample fraction

N<sub>h</sub> = Population size in cluster or stratum h , n<sub>h</sub> = Sample size from cluster or stratum h

k = Number of cluster or strata drawn

#### Please fill the following tables

Population N= **100**

Mean income = **301**

Std = **101**

Ordinary routines					Survey routines				
n	Mean	SEM	CI		Mean	SEM	CI	deff	deft
SRS WOR									
SRS WR									
SYS									
Strat Prop									
Strat Disprop									
S1SCS									
S2SCS									
2SPPS WR									

Hint

\* For each sampling stage use variables like:

```
gen pop1 =
gen n1 =
gen p1 = n1/pop1
gen w1 = 1/p1
...
```

\* Then, for the ultimate weight w

```
gen w = w1*w2*...
```