ASSIGNMENT WEEKS 1 AND 2

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Exercise 1

Q 1.1: Using Stata, generate per capita income (*pcinc*).

A: confer do file

Q 1.2: Using Stata, estimate the average per capita income and the total income of our population.

A: let's assume that the average per capita income is noted as (*apcinc)*

Variable	Obs	Mean	Std. Dev.	Min	Max
pcinc	10	111.9167	68.96954	46.66667	280

By using stata *apcinc= 111.9167*

*sum income

Variable	Obs	Mean	Std. Dev.	Min	Max
income	10	320	125.5211	140	560

From the above table the average income = 320 for 10 observations . It can therefore be deduced that the total income of the population would be equal to 10 times the average income which corresponds to 3200.

Q 1.3: Assume that, the poverty line is equal to 120, generate the variable per capita poverty gap (*pgap*), and then estimate its average (the per capita poverty gap should be normalized by the poverty line).

A:

```
gen pline = 120
gen pgap = 0
replace pgap = (pline-pcinc)/pline if (pcinc < pline)
sum pgap [aw=hhsize]
```

Variable	Obs	Weight	Mean	Std. Dev.	Min	Max
pgap	10	33	.3005051	.2054157	0	.6111111

Q 1.4: Redo the question Q 1.3 using DASP.

A:

ifgt pcinc, pline(120) alpha(1) hsize(hhsize)

```
. ifgt pcinc, pline(120) alpha(1) hsize(hhsize)

    Poverty index   :  FGT index
    Household size  :  hhsize
    Parameter alpha :  1.00
```

Variable	Estimate	STE	LB	UB	Pov. line
pcinc	0.300505	0.061199	0.162064	0.438946	120.00

Q 1.5: Assume that the purchasing power in region B is higher than that of region A by 20% and that of region C is higher than that of region A by 40%. In the case where the region A is the region of reference, generate the variable (*deflator*) as a price deflator index, and then generate the variable real per capita income (r*pcinc*).

A:

```
gen deflator = 1
replace deflator = 1.2 if region == 2
replace deflator = 1.4 if region == 3
gen rpcinc = pcinc/deflator
```

Q 1.6: Redo the question 1.3 and 1.4 using the real per capita income when the poverty line is 110.

A:

***Redo 1.3**

```
sum rpcinc [aw=hhsize]
replace pline = 110
replace pgap = (pline-rpcinc)/pline if (rpcinc < pline)
sum pgap [aw=hhsize]
```

```
. sum rpcinc [aw=hhsize]
```

Variable	Obs	Weight	Mean	Std. Dev.	Min	Max
rpcinc	10	33	83.8961	44.54531	33.33334	233.3333

```
. sum pgap [aw=hhsize]
```

Variable	Obs	Weight	Mean	Std. Dev.	Min	Max
pgap	10	33	.3115571	.1825609	0	.6969697

******Redo 1.4**

```
. ifgt rpcinc, pline(110) alpha(1) hsize(hhsize)

    Poverty index   :  FGT index
    Household size  :  hhsize
    Parameter alpha :  1.00
```

Variable	Estimate	STE	LB	UB	Pov. line
rpcinc	0.311557	0.053215	0.191176	0.431938	110.00

Exercise 2

2.1 Using the file data_2, estimate the average per adult equivalent expenditures without using the sampling weight and by using the DASP command ***imean***. What does this statistic refer to?

A:

```
. imean ae_exp

    Index           :  Mean index
```

Variable	Estimate	STE	LB	UB
1: mean_ae_exp	40979.687500	865.346985	39282.609375	42676.761719

on average per capita expenditure per adult in the population is 40979.687500

2.2 By using the variables ***strata, psu*** and the sampling weight variable, initialise the sampling design, and then estimate the average per adult equivalent expenditure.

A:

2.3 Test whether the average per adult equivalent expenditure in region 1 is higher than the double of that of region 3.

A:

```
. sum ae_exp if region ==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ae_exp	578	48255.71	45662.11	7840.201	452004.7

Mean of ae_exp in strata 1 = 48255.71 (A)

```
. sum ae_exp if region ==3
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ae_exp	312	27784.74	28456.53	4935.043	315948.5

27784x 2 = 55568 (B)

We remark that (A) < (B)

Therefore the average per adult equivalent expenditure in region 1 is less than the double of that of region 3.

2.4 Using the DASP command ***dimean*** test whether the average per adult equivalent expenditure for male household heads is higher than that of female households headed. Briefly discuss your results.

Exercise 3

Q 3.1 Use the data_2.dta data file, and then compute the population size of the sampled households.

A:

Q 3.2 Rank the per capita expenditures in ascending order and then generate the variable population share (*ps*) that includes the proportion of the population with corresponding per capita expenditures. Based on this, generate the variables percentiles (*p*) and quantiles (*q*).

A:

Q 3.3 Draw the cumulative distribution curve (X-Axis: the percentiles and Y-Axis: the corresponding per capita expenditures) (range of percentiles: min=0 and max=0.95).

A:

Q 3.4 Plot the quantile curve (X-axis percentiles (0 to 0.95) and Y-axis quantiles), and briefly discuss the results.

A:

Q 3.5 Using DASP, draw the quantile curves by the sex of the household head (percentiles (0 to 0.95)), and briefly discuss the results.

A:

Q 3.6 Using DASP, draw the density curves of the per capita expenditures for each of the rural and urban regions (range of per capita expenditures: min=0 and max=1000000), and briefly discuss the results.

A: