Comparing Educational Outcomes

Goal

When comparing educational levels across countries, it is necessary to carefully look at the labels of those variables for each country, and recode them to make them comparable across the countries you are investigating. Or you may wish to use the education routine created by LIS (as seen in the previous exercise). In this exercise, the educational population structure of different countries is compared with the use of the LIS educational routine.

Activity

Compare the educational composition of the total adult populations (16+) of the US, Luxembourg, and Italy in 2000 by gender. Repeat the exercise for the wage-earning population. Calculate average wages of wage earners for each country by education level.

Guidelines

- Please note that for some datasets, including Italy and Luxembourg, income is reported net of taxes and social contributions. (For more information, see http://www.lisproject.org/techdoc/netdatasets.htm). For those datasets, use net wages instead of gross wages. Net wage is reported in a different variable (***pnwage*** rather than ***pgwage***).
- One way to ensure that you choose the correct wage is by creating a new variable with the wage you want to use. In this case, you want ***pgwage*** if it is available and ***pnwage*** otherwise You can create the new wage variable immediately after your `foreach` statement by using:

```
quietly sum pgwage
gen pwage=cond(r(mean)==0,pnwage,pgwage)
```

  Keep in mind that in some countries, both ***pgwage*** and ***pnwage*** exist. In that case, this code will always select ***pgwage*** over ***pnwage***. If you prefer to use ***pnwage*** when available, adapt the program accordingly.
- Remember to include the variables necessary for the standardisation routine in your keep statement in addition to ***pweight*** and the applicable wage variable. If you created the new variable ***pwage*** within your `foreach` loop, your keep statement should look like:

```
use [varlist] pwage using `file', clear
```

- Use the tabulate command to find all the combinations of education level and gender.
  - Remember that the tabulate command does not accept non-integer frequency weights. In order to get weighted results, use the analytical weight "`aweight`".
  - Don't forget to include the missing option when you run the `tab` command. This will help you account for those individuals with unclassifiable levels of education.
  - Since you want results by gender, you will need to get the `col` or `row` percentages.

  Your final command will look like:

```
tab educ psex [aw=pweight], mi col
```
or
```
tab psex educ [aw=pweight], mi row
```

- To get the mean of the wage by level of education for wage earners, you can use:

```
bysort psex educ: sum pwage [w=pweight] if pwage>0
```

Program

```
di "** DEMOGRAPHICS AND EDUCATION – Exercise 8 **"


foreach file in $us00p $lu00p $it00p {
  display "`file'"
  global wage "pgwage"
  if inlist("`file'","$lu00p","$it00p") {
    global wage "pnwage"
  }
  use country pweight page psex peduc ptocc $wage if inrange(page,16,.) using
`file', clear
  qui do $myincl\educrecodepp.do
  tab educ psex [aw=pweight], mi col
  tab educ psex [aw=pweight] if $wage>0, mi col
  bysort psex educ: sum $wage [w=pweight] if $wage>0
}
```

Results

	Educ Level	US00		LU00		IT00	
		Males	Females	Males	Females	Males	Females
Percent of total population	low	*20.3*	*19.2*	*30.4*	*45.2*	*57.9*	*63.3*
	medium	*49.0*	*51.0*	*36.4*	*28.2*	*33.6*	*29.6*
	high	*30.7*	*29.8*	*26.1*	*19.0*	*8.5*	*7.1*
Percent of wage earning population	low	*14.8*	*11.9*	*26.0*	*32.8*	*47.7*	*33.0*
	medium	*50.6*	*52.1*	*39.1*	*34.9*	*41.3*	*50.4*
	high	*34.6*	*36.0*	*34.4*	*31.8*	*11.0*	*16.7*
Average wage of wage earners	low	*17,744*	*10,364*	*883,626*	*514,064*	*23,334*	*17,142*
	medium	*33,026*	*20,215*	*1,204,372*	*681,842*	*28,717*	*22,112*
	high	*64,344*	*35,711*	*1,747,091*	*1,107,552*	*40,286*	*27,220*
Returns to education	low →med	*86%*	*95%*	*36%*	*33%*	*23%*	*29%*
	med →high	*95%*	*77%*	*45%*	*62%*	*40%*	*23%*
Gender wage gap	low	*1.7*		*1.7*		*1.4*	
	medium	*1.6*		*1.8*		*1.3*	
	high	*1.8*		*1.6*		*1.5*	

Comments

- Please note that education was not recoded for some countries in certain years. Check documentation on-line (lissification tables and descriptives) for more precise information about education levels.
- Please note that in the results above, the percentage of population by level of education may not add up to 100% because the category ***educ*** =9 (missing or not defined) was not included in the table, but was included in the calculations.
- The education composition across countries varies considerably. (Italy has the least-educated population of the three countries chosen for this comparison.)
- In all countries, wage earners are more educated than the total population.
- As expected, wages increase with the level of education, but to a different extent in each country. In the US, returns to education are substantially higher than in Luxembourg or Italy.
- Net versus Gross wages:

Please note that, even when considering exchange rates (or PPPs), it is not possible to directly compare the level of wages between countries that report either net or gross wages. In these cases, it

is only possible to compare ratios. Even then, a progressive taxation system might affect the ratios. If high wage earners (i.e., the most educated) face higher tax rates than low earners, the returns to higher education will be lower than if the returns had been measured using gross wages. The higher gross returns, therefore, are partly offset by higher taxes.