

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 we want to use. In this case, we want *pgwage* if it is available and *pnwage* otherwise. The order of the two will simply determine which one has priority over the other :

```
compute pwage = 0 .  
if pnwage gt 0 pwage = pnwage .  
if pgwage gt 0 pwage = pgwage .
```

Keep in mind that in some countries, both *pgwage* and *pnwage* exist. For such countries, this code will always select *pgwage* over *pnwage*. If you prefer to prioritize *pnwage* over *pgwage*, simply interchange the two lines accordingly.

- Use the education standardisation subroutine:

```
include file = 'i:\educrcodepp.sps' .
```
- Remember to include the variables necessary for the standardisation routine in your **keep** statement in addition to *pweight* and the applicable wage variable.
- Use the **crosstab** command to find all the combinations of education level and gender. Since you want results by gender, you will need to get the **/cells = columns** option to produce all the required percentages.
- To get the mean of the wage by level of education for wage earners, you can use:

split file by psex educ.

Program

```
title "*** DEMOGRAPHICS AND EDUCATION - Exercise 8 ***" .

define dofiles () .
select if page ge 16.
include file = "i:\educrcodepp.sps" .
weight by pweight .
compute pwage = 0 .
if pnwage gt 0 pwage = pnwage .
if pgwage gt 0 pwage = pgwage .
crosstabs table = educ by psex
    / cells = column .
select if pwage gt 0 .
crosstabs table = educ by psex
    / cells = column .
sort cases by psex educ .
split file by psex educ .
descriptives variables = pwage
    / statistics = mean .
!enddefine .

get file = us00p
    / keep = country pweight page psex peduc ptocc pgwage pnwage .
dofiles .
get file = lu00p
    / keep = country pweight page psex peduc ptocc pgwage pnwage .
dofiles .
get file = it00p
    / keep = country pweight page psex peduc ptocc pgwage pnwage .
dofiles .
```

Results

| | <i>Educ Level</i> | US00 | | LU00 | | IT00 | |
|---|-------------------|-------------|---------|-------------|-----------|-------------|---------|
| | | Males | Females | Males | Females | Males | Females |
| <i>Percent of total population</i> | 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 |
| <i>Percent of wage earning population</i> | 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 |
| <i>Average wage of wage earners</i> | 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 |
| <i>Returns to education</i> | low →med | 86% | 95% | 36% | 33% | 23% | 29% |
| | med →high | 95% | 77% | 45% | 62% | 40% | 23% |
| <i>Gender wage gap</i> | 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.