

Topic 5: Work experience and wages

A broad economic literature analyzes that industry-specific work experience affects wages positively. The underlying mechanism is that the more work experience workers collect in specific firms or industries, the more firm-specific human capital they accumulate. You will use the dataset to investigate the relation between firm tenure (how long a worker has been employed in a specific firm) and wages yourself.

1. Import the data frame `mz_prepared.dta` that has been stored in Stata format.
2. Select the following variables and store the new data frame in an object called `"df"`.
 - **id:** person identifier
 - **wage:** hourly wage in Euros
 - **tenure:** in years
 - **educ:** 1: unskilled, 2: apprenticeship/vocational school degree, 3: college degree
 - **industry:** 1: manufacturing, 2: construction, 3: public sector, 4: personal services, 5: business services
 - **east:** 1: East Germany, 0: West Germany
3. Where necessary, adjust the variable types appropriately using the functions `as.factor()`, `as.numeric()`, `as.character()`.
4. We are interested in how wages and tenure are related and if education, industry, and region are important in that context.
 - Generate a variable `"lnwage"` that is the logarithm of the variable `wage`. Use this variable in your regressions.
 - Generate a variable `"college"` that takes the value 1 if the person has a college degree and 0 otherwise.
 - Generate a variable `"tenurecat"` that takes the value 1 for tenures of ≤ 2 years,
2 for tenures of $>2-5$ years,
3 for tenures of $>5-10$ years and
4 for tenures >10 years.
 - Generate a variable `"shortten"` that takes the value 1 for tenures of ≤ 2 years and 0 otherwise.
5. Display and discuss the sample statistics, i.e., the medians, means, standard deviations, minimum and maximum values, and the number of observations of all variables that you use for your analyses. Check if the data contain missing values and if so, decide on how you want to deal with those missing values.
6. Chose an appropriate way to visualize if
 - wages and tenure are correlated.
 - the relation between wages and tenure is different across educational degree.
 - the relation between wages and tenure is different across industries.
 - the relation between wages and tenure is different across regions.

Describe your findings.

7. Run a linear regression and investigate the correlation between wages and having a tenure of less than 2 years at the current job. What happens to your estimate for the variable shortten when you subsequently add the following variables: education, industry, east? Describe your findings and interpret the coefficients.
8. What conclusions can you make from your analyzes? How do they relate to what we know already from the literature? Discuss critically. If you find interesting relationships: do you think they are causal? Why or why not?

Literature to start with:

Murphy, Kevin and Welch, Finis (1992): The structure of wages, Quarterly Journal of Economics 107(1), 285-326.

Hint: For inspiration how to present your findings in the term paper, analyze how scientific papers present sample statistics and regression results.