

ECON 626: Empirical Microeconomics

Instrumental Variables: Treatment on the Treated (data from a real RCT)

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The data set `gemdata.dta` contains observations based on Brudevold-Newman, Honorati, Jakiela, and Ozier (2017). The study is an evaluation of an active labor market program for young women in Nairobi, Kenya. There are three randomly-assigned arms: control, cash grants, and a particular business program called “GEM,” the International Rescue Committee’s Girls Empowered by Microfranchise program, which includes a combination of training, cash, and mentorship.

The `.do` file `econ626-2019-L4-A1-selfemployment-start.do` has some material to get you started working with this data set.

1. Consider two variables measured at baseline and endline: `voced` and `selfemp`:
`voced` is a dummy for having received vocational training
`selfemp` is a dummy for self-employment
 - (a) In the control group, how correlated is `b_voced` with `e_voced`? What about `b_selfemp` and `e_selfemp`?
 - (b) Regress `e_voced` on the treatment dummies (`gem` and `grant`) controlling for strata dummies. How do results (and, specifically, t-statistics) compare when you run specifications with and without the baseline values of the outcome variable?
 - (c) Repeat this exercise for `e_selfemp`. How do results differ?
 - (d) Now estimate the treatment effect on the change in vocational training or self-employment.
2.
 - (a) Calculate the expected IV (Wald) estimate of the impact of training (through the GEM program) on self-employment: use data from the control group and the GEM treatment arm to estimate the reduced-form and the first stage in separate regressions, noting the resulting ratio.
 - (b) How does this compare to the actual IV estimate of the impact of training on self-employment (when you use `ivregress 2sls`)?
 - (c) One could also estimate the impact of launching a business (through the program) on self-employment (using the `bizlaunch` variable). What happens when you do this? Should you do this? Why or why not?
3. Compare the ITT and TOT estimates of the impact of *cash grants* on self-employment.