

**Econometrics 1: Microeconometric Methods of Impact Evaluation.**  
**Exercise 5: Matching**

1. Use the database microfinance.dta under the Lecture 5.

For the definition of the variables, see Table 1 of Pitt, M. and S. Khandker (1998), “The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?”, The Journal of Political Economy, 106(5), 958-996. This file contains information on participation to microfinance in 1991/92. We want to estimate the causal impact of microfinance.

- (a) Why can't we compare participants (part=1) to non-participants (part=0)?
- (b) Regress the participation to the program, with a logit specification, on HGC sex age landHHpar landHHbro landHHsis landHHSPpar landHHSPbro landHHSPsis HHland HGChad sexhead agehead adultmale adultfemale scohab village11-village243. What is the  $R^2$ ? Generate ps1, the propensity score from this estimation.
- (c) Regress the participation to the program, with a logit specification, on HGC-dummy (a dummy equal to 1 if the individual has  $HGC > 0$ , and equal to 0 if  $HGC = 0$ .) savings nfeown livevalue agrincome HHland hhsiz nonagr wage agrwage fed med mar age2 age3 age4 mliv sex age agehead adultmale village11-village243. Does this regression seem better? Why? Generate ps2 from this specification.
- (d) Generate the log of percaexpenditure, which will be our outcome.
- (e) Perform a matching with 1 nearest neighbor, with the two scores. Use the psttest and psgraph command to check your results.
- (f) Perform a matching caliper with 0.2, 0.1, 0.05 as calipers.
- (g) Perform a matching strata with 0.2, 0.1, 0.05 as stratas.
- (h) Perform a matching kernel with 0.05, 0.02, 0.01 as bandwidths.
- (i) What is the best method? The best specification?
- (j) What are the results?