Stata Syntax for Section 5.8.5, Chapter 5

Section 5.8.5

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//Chapter 5 Illustrating Examples (Section 5.8.5)

cd "D:\psa\_e2\Chapter5\data"

cap mkdir "C:\tmp" /\* create a new folder to store temporary data \*/

//outcome cccpros57

log using cccpros57, replace

//p-score single-level

use cccpros57, clear

logistic intschb agey female black hisp pcedu incpovlr pcempf fatherr AYP05Cs pmin05s

predict ps\_sgl

save cccpros57,replace

//school-level p-score model

use cccpros57, clear

sort schbl

g x=1 if schbl[\_n] != schbl[\_n-1]

drop if x !=1

logistic intschb AYP05Cs pmin05s

//before-matching balance check

use cccpros57, clear

ttest agey, by(intschb)

tab female intschb, chi2 row

tab black intschb, chi2 row

tab hisp intschb, chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb, chi2 row

tab fatherr intschb, chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//p-scocre matching

//I. using ps\_sgl

use cccpros57, clear

set seed 1000

generate x=uniform()

sort x

sum ps\_sgl

display r(sd)\*.25

psmatch2 intschb, pscore(ps\_sgl) caliper(.08528376) noreplacement descending

sort \_id

g match=id[\_n1]

g treat=id if \_nn==1

drop if treat==.

sum treat

g mset=\_n

keep treat match mset

save scheme1, replace

clear

use scheme1, replace

keep treat mset

gen tx=1

rename treat id

save "C:\tmp\t1.dta",replace

use scheme1, replace

keep match mset

gen tx=0

rename match id

append using "C:\tmp\t1.dta"

sort id

save "C:\tmp\t2.dta",replace

clear

use cccpros57, replace

sort id

merge id using "C:\tmp\t2.dta"

tab tx

drop if tx==.

save post1, replace

//post-matching balance check

use post1, clear

ttest agey, by(intschb)

tab female intschb if ps\_sgl !=., chi2 row

tab black intschb if ps\_sgl !=., chi2 row

tab hisp intschb if ps\_sgl !=., chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb if ps\_sgl !=., chi2 row

tab fatherr intschb if ps\_sgl !=., chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//p-scocre matching

//II. using ps\_sch

use cccpros57, clear

set seed 1000

generate x=uniform()

sort x

sum ps\_sch

display r(sd)\*.25

psmatch2 intschb, pscore(ps\_sch) caliper(.05649421) noreplacement descending

sort \_id

g match=id[\_n1]

g treat=id if \_nn==1

drop if treat==.

sum treat

g mset=\_n

keep treat match mset

save scheme2, replace

clear

use scheme2, replace

keep treat mset

gen tx=1

rename treat id

save "C:\tmp\t1.dta",replace

use scheme2, replace

keep match mset

gen tx=0

rename match id

append using "C:\tmp\t1.dta"

sort id

save "C:\tmp\t2.dta",replace

clear

use cccpros57, replace

sort id

merge id using "C:\tmp\t2.dta"

tab tx

drop if tx==.

save post2, replace

//post-matching balance check

use post2, clear

ttest agey, by(intschb)

tab female intschb if ps\_sch !=., chi2 row

tab black intschb if ps\_sch !=., chi2 row

tab hisp intschb if ps\_sch !=., chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb if ps\_sch !=., chi2 row

tab fatherr intschb if ps\_sch !=., chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//check ICC

use cccpros57, clear

xtreg cccpros57, i(schbl) mle

//ICC=.1850556

use post1, clear

xtreg cccpros57, i(schbl) mle

//ICC=.1827006

xtreg cccpros57, i(mset) mle

//ICC=.0745292

use post2, clear

xtreg cccpros57, i(schbl) mle

//ICC=.1930747

xtreg cccpros57, i(mset) mle

//ICC=0

//Outcome analysis: multilevel

use cccpros57, clear

xtmixed cccpros57 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

use post1, clear

xtmixed cccpros57 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

use post2, clear

xtmixed cccpros57 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

//CCREM

set more off

use post1, clear

xtmixed cccpros57 intschb agey female black hisp pcedu incpovlr pcempf ///

 fatherr AYP05Cs pmin05s ///

 || \_all: R.schbl || \_all: R.mset ///

 , mle emonly emiterate(30000) emdots difficult

log close

//outcome cccragg24

set more off

log using cccragg24, replace

//p-score single-level

use cccragg24, clear

logistic intschb agey female black hisp pcedu incpovlr pcempf fatherr AYP05Cs pmin05s

predict ps\_sgl

save cccragg24,replace

//school-level p-score model

use cccragg24, clear

sort schbl

g x=1 if schbl[\_n] != schbl[\_n-1]

drop if x !=1

logistic intschb AYP05Cs pmin05s

//before-matching balance check

use cccragg24, clear

ttest agey, by(intschb)

tab female intschb, chi2 row

tab black intschb, chi2 row

tab hisp intschb, chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb, chi2 row

tab fatherr intschb, chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//p-scocre matching

//I. using ps\_sgl

use cccragg24, clear

set seed 1000

generate x=uniform()

sort x

sum ps\_sgl

display r(sd)\*.25

psmatch2 intschb, pscore(ps\_sgl) caliper(.07356514) noreplacement descending

sort \_id

g match=id[\_n1]

g treat=id if \_nn==1

drop if treat==.

sum treat

g mset=\_n

keep treat match mset

save scheme1, replace

clear

use scheme1, replace

keep treat mset

gen tx=1

rename treat id

save "C:\tmp\t1.dta",replace

use scheme1, replace

keep match mset

gen tx=0

rename match id

append using "C:\tmp\t1.dta"

sort id

save "C:\tmp\t2.dta",replace

clear

use cccragg24, replace

sort id

merge id using "C:\tmp\t2.dta"

tab tx

drop if tx==.

save post3, replace

//post-matching balance check

use post3, clear

ttest agey, by(intschb)

tab female intschb if ps\_sgl !=., chi2 row

tab black intschb if ps\_sgl !=., chi2 row

tab hisp intschb if ps\_sgl !=., chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb if ps\_sgl !=., chi2 row

tab fatherr intschb if ps\_sgl !=., chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//p-scocre matching

//II. using ps\_sch

use cccragg24, clear

set seed 1000

generate x=uniform()

sort x

sum ps\_sch

display r(sd)\*.25

psmatch2 intschb, pscore(ps\_sch) caliper(.06009162) noreplacement descending

sort \_id

g match=id[\_n1]

g treat=id if \_nn==1

drop if treat==.

sum treat

g mset=\_n

keep treat match mset

save scheme2, replace

clear

use scheme2, replace

keep treat mset

gen tx=1

rename treat id

save "C:\tmp\t1.dta",replace

use scheme2, replace

keep match mset

gen tx=0

rename match id

append using "C:\tmp\t1.dta"

sort id

save "C:\tmp\t2.dta",replace

clear

use cccragg24, replace

sort id

merge id using "C:\tmp\t2.dta"

tab tx

drop if tx==.

save post4, replace

//post-matching balance check

use post4, clear

ttest agey, by(intschb)

tab female intschb if ps\_sch !=., chi2 row

tab black intschb if ps\_sch !=., chi2 row

tab hisp intschb if ps\_sch !=., chi2 row

ttest pcedu, by(intschb)

ttest incpovlr, by(intschb)

tab pcempf intschb if ps\_sch !=., chi2 row

tab fatherr intschb if ps\_sch !=., chi2 row

ttest AYP05Cs, by(intschb)

ttest pmin05s, by(intschb)

//check ICC

use cccragg24, clear

xtreg cccragg24, i(schbl) mle

//ICC=.0779501

use post3, clear

xtreg cccragg24, i(schbl) mle

//ICC=.0505285

xtreg cccragg24, i(mset) mle

//ICC=0

use post4, clear

xtreg cccragg24, i(schbl) mle

//ICC=.0513024

xtreg cccragg24, i(mset) mle

//ICC=.1915563

//Outcome analysis: multilevel

use cccragg24, clear

xtmixed cccragg24 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

use post3, clear

xtmixed cccragg24 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

use post4, clear

xtmixed cccragg24 intschb agey female black hisp pcedu incpovlr pcempf fatherr ///

 AYP05Cs pmin05s ||schbl: , cov(un) ml variance

//CCREM

set more off

use post4, clear

xtmixed cccragg24 intschb agey female black hisp pcedu incpovlr pcempf ///

 fatherr AYP05Cs pmin05s ///

 || \_all: R.schbl || \_all: R.mset ///

 , mle emonly emiterate(30000) emdots difficult

log close

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