```
      name:  <unnamed>
       log:  C:\Users\XuQi\Desktop\第5章.smcl
  log type:  smcl
 opened on:  16 Jul 2024, 09:14:57

. do 第5章.do, nostop

. use "C:\Users\XuQi\Desktop\cfps2010.dta", clear

.
. *不控制任何变量
. reg lninc college, vce(cluster provcd)

Linear regression                               Number of obs     =      4,137
                                                F(1, 24)          =     271.17
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1095
                                                Root MSE          =     1.1498

                                   (Std. err. adjusted for 25 clusters in provcd)
------------------------------------------------------------------------------
             |               Robust
      lninc  | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
     college |    .823612   .0500155    16.47   0.000     .7203851     .926839
       _cons |   9.353189   .1084703    86.23   0.000     9.129317    9.577061
------------------------------------------------------------------------------

.
. *对hukou实施精确匹配
. teffects nnmatch (lninc) (college), ematch(hukou)

Treatment-effects estimation                   Number of obs      =      4,137
Estimator      : nearest-neighbor matching     Matches: requested =          1
Outcome model  : matching                                  min =        786
Distance metric: Mahalanobis                               max =       1594
------------------------------------------------------------------------------
             |               AI robust
      lninc  | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
ATE          |
     college |
 (是 vs 否)  |   .8021249   .0337823    23.74   0.000     .7359127     .868337
------------------------------------------------------------------------------

.
. *同时对hukou、age、gender、race、sibling和fmedu实施精确匹配
. teffects nnmatch (lninc) (college), ematch(hukou age gender race sibling fmedu)
no exact matches for observation 4; use option osample() to identify all observations with deficient matches
r(459);

. teffects nnmatch (lninc) (college), ematch(hukou age gender race sibling fmedu) osample(overlap)
593 observations have no exact matches; they are identified in the osample() variable
r(459);

. tab overlap

  overlap |
violation |
indicator |      Freq.     Percent        Cum.
----------+-----------------------------------
        0 |      3,544       85.67       85.67
        1 |        593       14.33      100.00
----------+-----------------------------------
    Total |      4,137      100.00
```

```
.
. *马氏匹配
. teffects nnmatch (lninc age race sibling) (college), ematch(hukou gender fmedu)

Treatment-effects estimation                   Number of obs      =      4,137
Estimator      : nearest-neighbor matching     Matches: requested =          1
Outcome model  : matching                                      min =          1
Distance metric: Mahalanobis                                   max =         50
```

lninc	Coefficient	AI robust std. err.	z	P>|z|	[95% conf.	interval]
ATE						
college (是 vs 否)	**.7699847**	**.041446**	**18.58**	**0.000**	**.6887521**	**.8512174**

```
. teffects nnmatch (lninc age race sibling) (college), ematch(hukou gender fmedu) nneighbor(4) vce(robust, nn(4))

Treatment-effects estimation                   Number of obs      =      4,137
Estimator      : nearest-neighbor matching     Matches: requested =          4
Outcome model  : matching                                      min =          4
Distance metric: Mahalanobis                                   max =         50
```

lninc	Coefficient	AI robust std. err.	z	P>|z|	[95% conf.	interval]
ATE						
college (是 vs 否)	**.7936157**	**.0392848**	**20.20**	**0.000**	**.7166189**	**.8706125**

```
. teffects nnmatch (lninc age race sibling) (college), ematch(hukou gender fmedu) nneighbor(4) vce(robust, nn(4)) ///
>          biasadj(age race sibling)

Treatment-effects estimation                   Number of obs      =      4,137
Estimator      : nearest-neighbor matching     Matches: requested =          4
Outcome model  : matching                                      min =          4
Distance metric: Mahalanobis                                   max =         50
```

lninc	Coefficient	AI robust std. err.	z	P>|z|	[95% conf.	interval]
ATE						
college (是 vs 否)	**.7949957**	**.0392914**	**20.23**	**0.000**	**.717986**	**.8720054**

```
. teffects nnmatch (lninc age race sibling) (college), ematch(hukou gender fmedu) nneighbor(4) vce(robust, nn(4)) ///
>          biasadj(age race sibling) atet

Treatment-effects estimation                   Number of obs      =      4,137
Estimator      : nearest-neighbor matching     Matches: requested =          4
Outcome model  : matching                                      min =          4
Distance metric: Mahalanobis                                   max =         50
```

lninc	Coefficient	AI robust std. err.	z	P>|z|	[95% conf.	interval]
ATET						
college (是 vs 否)	**.6993424**	**.0475923**	**14.69**	**0.000**	**.6060633**	**.7926215**

```
.
. *粗化精确匹配
```

```
. imb hukou age gender race sibling fmedu, treatment(college)

Multivariate L1 distance: .42932057

Univariate imbalance:

             L1      mean       min       25%       50%       75%       max
  hukou   .11753    .11753         0         0         0         0         0
    age   .32978   -6.5436         0        -6        -9        -9         0
 gender   .04055   -.04055         0         0         0         0         0
   race   .01072   -.01072         0         0         0         0         0
sibling   .13284    .13284         0         0         0         0         0
  fmedu   .22349    .01915         0         0         1        -1         0

.
. cem hukou age (30 35 40 45 50) gender race sibling fmedu(#0), treatment(college)
(using the scott break method for imbalance)

Matching Summary:
-----------------
Number of strata: 206
Number of matched strata: 133

              0     1
      All  2494  1643
  Matched  2409  1583
Unmatched    85    60


Multivariate L1 distance: .20630897

Univariate imbalance:

             L1      mean       min       25%       50%       75%       max
  hukou  8.3e-16   1.1e-16         0         0         0         0         0
    age   .07527    -.1677         0         0         1         0         0
 gender  1.4e-15   6.7e-16         0         0         0         0         0
   race  9.0e-16   1.8e-15         0         0         0         0         0
sibling  2.4e-15  -1.9e-16         0         0         0         0         0
  fmedu  3.7e-16   2.8e-15         0         0         0         0         0

. cem hukou age (#6) gender race sibling fmedu (#0), treatment(college)
(using the scott break method for imbalance)

Matching Summary:
-----------------
Number of strata: 179
Number of matched strata: 118

              0     1
      All  2494  1643
  Matched  2421  1579
Unmatched    73    64


Multivariate L1 distance: .22223609

Univariate imbalance:

             L1      mean       min       25%       50%       75%       max
  hukou  5.3e-15   4.6e-15         0         0         0         0         0
    age   .08636   -.24076         0         0         0         0         0
 gender  6.0e-15   7.2e-15         0         0         0         0         0
   race  1.2e-15   2.1e-15         0         0         0         0         0
sibling  4.1e-15   1.7e-15         0         0         0         0         0
  fmedu  7.4e-15   5.3e-15         0         0         0         0         0
```

```
. cem hukou age gender race sibling fmedu (#0), treatment(college)
(using the scott break method for imbalance)

Matching Summary:
-----------------
Number of strata: 369
Number of matched strata: 214

             0     1
      All  2494  1643
  Matched  2330  1523
Unmatched   164   120


Multivariate L1 distance: .09076546

Univariate imbalance:

               L1      mean       min       25%       50%       75%       max
  hukou   1.1e-15  -6.7e-16         0         0         0         0         0
    age    .02518   -.02531         0         0         0         0         0
 gender   1.8e-15  -2.3e-15         0         0         0         0         0
   race   8.7e-18         0         0         0         0         0         0
sibling   1.3e-15  -3.1e-16         0         0         0         0         0
  fmedu   1.6e-15   1.2e-15         0         0         0         0         0

.
. reg lninc college [iw=cem_weights]

      Source |       SS           df       MS      Number of obs   =     3,852
-------------+----------------------------------   F(1, 3850)      =    333.41
       Model |  450.866614         1  450.866614   Prob > F        =    0.0000
    Residual |  5207.69062     3,850  1.35264691   R-squared       =    0.0797
-------------+----------------------------------   Adj R-squared   =    0.0797
       Total |  5658.55723     3,851  1.46937347   Root MSE        =    1.1629

------------------------------------------------------------------------------
      lninc | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
    college |   .6996738   .0383184    18.26   0.000     .6245475    .7748001
      _cons |    9.47577   .0240912   393.33   0.000     9.428537    9.523003
------------------------------------------------------------------------------

. reg lninc college hukou age gender race sibling i.fmedu [iw=cem_weights]

      Source |       SS           df       MS      Number of obs   =     3,853
-------------+----------------------------------   F(8, 3844)      =     59.25
       Model |  621.146148         8  77.6432685   Prob > F        =    0.0000
    Residual |  5037.41109     3,844  1.31046074   R-squared       =    0.1098
-------------+----------------------------------   Adj R-squared   =    0.1079
       Total |  5658.55723     3,852  1.46899201   Root MSE        =    1.1448

------------------------------------------------------------------------------
      lninc | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
    college |    .699765   .0377211    18.55   0.000     .6258097    .7737203
      hukou |   .1384669   .0417004     3.32   0.001     .0567099    .2202238
        age |   .0036032    .002706     1.33   0.183    -.0017021    .0089086
     gender |   .3631285   .0378722     9.59   0.000     .2888771    .4373799
       race |   .1562387   .1279194     1.22   0.222    -.0945576    .4070351
    sibling |   .1464629   .0537444     2.73   0.006     .0410927    .2518332
            |
      fmedu |
         是 |   .0025106    .043347     0.06   0.954    -.0824748     .087496
       缺失 |   .0241171   .0565652     0.43   0.670    -.0867836    .1350179
            |
      _cons |   8.892506    .162912    54.58   0.000     8.573104    9.211908
------------------------------------------------------------------------------
```

```
.
end of do-file

. log close
      name:  <unnamed>
       log:  C:\Users\XuQi\Desktop\第5章.smcl
  log type:  smcl
 closed on:  16 Jul 2024, 09:15:32
```