
```
name: <unnamed>
log: /Users/carsoncrenshaw/Library/CloudStorage/OneDrive-Universityof
> Virginia/RMDA I/RMDA1_Homework6_log.smcl
log type: smcl
opened on: 17 Nov 2023, 15:21:46
```

```
1 .
2 . *****
3 . *           1: Homework Code
4 . *****
5 .
6 . use "${classpath}tracking.dta", clear

7 .
8 . *QUESTION 1
9 . *1A
10 . // Recreate dummy for missing values (as represented by 1)
11 . generate missing_scores = 0

12 . replace missing_scores = 1 if score_lit_30months ==. | score_math_30months
    > ==.
    (1,408 real changes made)

13 .
14 . drop if missing_scores == 1 // remove observations with missing data
    (1,408 observations deleted)

15 .
16 . reg score_math_30months tracked, cluster(schoolid)

Linear regression               Number of obs   =      5,02
> 3                             F(1, 110)      =      3.6
> 3                             Prob > F        =      0.059
> 4                             R-squared       =      0.003
> 4                             Root MSE     =      .998
> 4
```

```

                                (Std. err. adjusted for 111 clusters in schoolid
> )
> -
s~h_30months | Coefficient    Robust      t    P>|t|    [95% conf. interval
> ]
> -
    tracked |    .1176209    .0617365    1.91    0.059    -.0047264    .239968
> 2
    _cons   |   -.0661984    .044971    -1.47    0.144    -.1553203    .022923
> 6
> -

```

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17 .
18 . *1B
19 . reg score_math_30months tracked female, cluster(schoolid)

```

```

Linear regression                Number of obs    =      5,02
> 3                               F(2, 110)       =      2.7
> 7                               Prob > F        =      0.067
> 3                               R-squared       =      0.003
> 9                               Root MSE     =      .9982
> 7

```

```

                                (Std. err. adjusted for 111 clusters in schoolid
> )
> -
s~h_30months | Coefficient    Robust      t    P>|t|    [95% conf. interval
> ]
> -
    tracked |    .1170471    .0618204    1.89    0.061    -.0054663    .239560
> 6
    female  |    .0423732    .0349877    1.21    0.228    -.0269642    .111710
> 6
    _cons   |   -.0865938    .0458755    -1.89    0.062    -.1775082    .004320
> 6

```

```

> -

20 .
21 . *1C
22 . reg score_math_30months tracked score_lit_30months, cluster(schoolid)

Linear regression                                Number of obs    =    5,02
> 3                                              F(2, 110)        =    947.3
> 2                                              Prob > F         =    0.000
> 0                                              R-squared        =    0.390
> 9                                              Root MSE        =    .7806
> 2

                                (Std. err. adjusted for 111 clusters in sc
> hoolid)
> -----
score_math_30mon~s | Coefficient    Robust      t    P>|t|    [95% conf. in
> terval]
> -----
> tracked          |    .0226605    .0477735    0.47    0.636    -.0720153    .
> 1173363
score_lit_30months |    .6242342    .0146741   42.54    0.000    .5951536    .
> 6533148
    _cons          |   -.0134469    .0349536   -0.38    0.701   -.0827168    .
> 0558229
> -----
> -----

```

```

23 .
24 . *1D
25 . reg score_math_30months tracked age_base, cluster(schoolid)

```

```

Linear regression      Number of obs   =      4,87
> 5                    F(2, 110)       =      8.2
> 9                    Prob > F        =      0.000
> 4                    R-squared       =      0.007
> 4                    Root MSE      =      .9932
> 7

```

(Std. err. adjusted for **111** clusters in **schoolid**)

```

> )

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	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
score_math_30months						
tracked	.1045249	.0621743	1.68	0.096	-.0186899	.227739
age_base	.0451316	.0122613	3.68	0.000	.0208325	.069430
_cons	-.4641756	.1227912	-3.78	0.000	-.7075189	-.220832

```

> -

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26 . // confirm with a covariate balance test regression:

```

```

27 . // reg age_base tracked, cluster(schoolid)
28 .
29 .
30 . *QUESTION 2
31 . *2C
32 . *i
33 . reg score_math_30months tracked if score_base_bottomhalf == 0, cluster(scho
    > olid)

```

```

Linear regression      Number of obs    =      2,57
> 0                    F(1, 110)         =      4.3
> 6                    Prob > F           =      0.039
> 0                    R-squared          =      0.006
> 1                    Root MSE         =      .8741
> 7

```

(Std. err. adjusted for **111** clusters in **schoolid**)

```
> )
```

> -						
s~h_30months	Coefficient	Robust std. err.	t	P> t	[95% conf. interval	
>]						
> -						
tracked	.1371874	.0656757	2.09	0.039	.0070336	.267341
> 3						
_cons	.2876395	.0448724	6.41	0.000	.1987128	.376566
> 1						
> -						

```

34 .
35 . *ii
36 . reg score_math_30months tracked if score_base_bottomhalf == 1, cluster(scho
    > olid)

```

```

Linear regression          Number of obs    =      2,45
> 3                        F(1, 110)        =      2.6
> 4                        Prob > F          =      0.106
> 8                        R-squared         =      0.003
> 8                        Root MSE        =      .9775
> 8

```

(Std. err. adjusted for **111** clusters in **schoolid**)

```

> )

```

	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
score_math_30months						
tracked	.1223352	.0752343	1.63	0.107	-.0267615	.271431
_cons	-.4509802	.0566526	-7.96	0.000	-.5632523	-.33870

```

> -

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```

37 .
38 . *iii

```

```
39 . gen tracked_bottomhalf = tracked * score_base_bottomhalf
```

```
40 . reg score_math_30months tracked score_base_bottomhalf tracked_bottomhalf, c
> luster(schoolid)
```

```
Linear regression          Number of obs    =      5,02
> 3                        F(3, 110)         =      187.6
> 2                        Prob > F           =      0.000
> 0                        R-squared          =      0.142
> 8                        Root MSE        =      .9261
> 1
```

(Std. err. adjusted for **111** clusters in

```
> schoolid)
```

	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
score_math_30months					
tracked	.1371874	.0656826	2.09	0.039	.00702
score_base_bottomhalf	-.7386196	.0427332	-17.28	0.000	-.8233068
tracked_bottomhalf	-.0148522	.0631805	-0.24	0.815	-.1400612
_cons	.2876395	.0448771	6.41	0.000	.1987035

```

41 .
42 .
43 . *QUESTION 3
44 .
45 . use "${classpath}cps17_va.dta", clear

46 .
47 . *3A
48 . reg htotval hunder18

```

Source	SS	df	MS	Number of obs	=	1,51
				F(1, 1510)	=	17.8
Model	1.8999e+11	1	1.8999e+11	Prob > F	=	0.000
Residual	1.6081e+13	1,510	1.0650e+10	R-squared	=	0.011
				Adj R-squared	=	0.011
Total	1.6271e+13	1,511	1.0768e+10	Root MSE	=	1.0e+

htotval	Coefficient	Std. err.	t	P> t	[95% conf. interval	
hunder18	10288.7	2435.886	4.22	0.000	5510.616	15066.7
_cons	90074.79	3237.562	27.82	0.000	83724.19	96425.3


```

49 .
50 . *3B
51 . generate married = 0

52 . replace married = 1 if a_maritl == 1 | a_maritl == 2 | a_maritl == 3
    (715 real changes made)

53 .
54 . reg htotval hunder18 married

```

Source	SS	df	MS	Number of obs	=	1,51
				F(2, 1509)	=	62.7
Model	1.2486e+12	2	6.2428e+11	Prob > F	=	0.000
Residual	1.5022e+13	1,509	9.9551e+09	R-squared	=	0.076
				Adj R-squared	=	0.075
Total	1.6271e+13	1,511	1.0768e+10	Root MSE	=	9977

	Coefficient	Std. err.	t	P> t	[95% conf. interval	
htotval						
hunder18	4306.61	2425.524	1.78	0.076	-451.1461	9064.36
married	54581.09	5293.08	10.31	0.000	44198.52	64963.6
_cons	68818.11	3748.022	18.36	0.000	61466.22	76169.9

```

55 .
56 . generate unmarried = 0

57 . replace unmarried = 1 if a_maritl == 4 | a_maritl == 5 | a_maritl == 6 | a_
    > maritl == 7
    (797 real changes made)

58 .
59 . reg htotval hunder18 unmarried

```

Source	SS	df	MS	Number of obs	=	1,51
> 2				F(2, 1509)	=	62.7
> 1				Prob > F	=	0.000
Model	1.2486e+12	2	6.2428e+11	R-squared	=	0.076
> 0				Adj R-squared	=	0.075
Residual	1.5022e+13	1,509	9.9551e+09	Root MSE	=	9977
> 7						
> 5						
Total	1.6271e+13	1,511	1.0768e+10			
> 5						

> -						
htotval	Coefficient	Std. err.	t	P> t	[95% conf. interval	
>]						
> -						
hunder18	4306.61	2425.524	1.78	0.076	-451.1461	9064.36
> 7						
unmarried	-54581.09	5293.08	-10.31	0.000	-64963.67	-44198.5
> 2						
_cons	123399.2	4499.12	27.43	0.000	114574	132224.
> 4						
> -						

```

60 .
61 . *3C
62 . generate hs_grad = 0

63 . replace hs_grad = 1 if a_hga >= 39
    (1,357 real changes made)

64 .
65 . reg htotval hunder18 hs_grad

```

Source	SS	df	MS	Number of obs	=	1,51
				F(2, 1509)	=	27.4
Model	5.7107e+11	2	2.8553e+11	Prob > F	=	0.000
Residual	1.5700e+13	1,509	1.0404e+10	R-squared	=	0.035
				Adj R-squared	=	0.033
Total	1.6271e+13	1,511	1.0768e+10	Root MSE	=	1.0e+

	Coefficient	Std. err.	t	P> t	[95% conf. interval	
htotval						
hunder18	11429.68	2415.019	4.73	0.000	6692.53	16166.8
hs_grad	52499.11	8674.605	6.05	0.000	35483.55	69514.6
_cons	42088.96	8550.264	4.92	0.000	25317.3	58860.6

```

66 .
67 . *3D
68 . gen hunder18_sq = hunder18 * hunder18
69 . reg htotval hunder18 hunder18_sq

```

Source	SS	df	MS	Number of obs	=	1,51
> 2				F(2, 1509)	=	16.6
> 9				Prob > F	=	0.000
Model	3.5222e+11	2	1.7611e+11	R-squared	=	0.021
> 0				Adj R-squared	=	0.020
Residual	1.5919e+13	1,509	1.0549e+10	Root MSE	=	1.0e+
> 6						
> 4						
Total	1.6271e+13	1,511	1.0768e+10			
> 05						

> -							
htotval	Coefficient	Std. err.	t	P> t	[95% conf. interval		
>]							
> -							
hunder18	31748.86	5985.354	5.30	0.000	20008.36	43489.3	
> 5							
hunder18_sq	-7070.278	1802.932	-3.92	0.000	-10606.8	-3533.7	
> 6							
_cons	86228.27	3368.24	25.60	0.000	79621.34	92835.	
> 2							
> -							

```
70 .
71 .
72 . *****
73 . *      2: Close log file
74 . *****
75 .
76 .      log close
      name: <unnamed>
      log:  /Users/carsoncrenshaw/Library/CloudStorage/OneDrive-Universityof
> Virginia/RMDA I/RMDA1_Homework6_log.smcl
      log type:  smcl
      closed on:  17 Nov 2023, 15:21:46
```
