Statistics/Data Analysis

```
      name:  <unnamed>
       log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_dis
> trict_differentials_mi5_linear_120919.smcl
  log type:  smcl
 opened on:   9 Dec 2019, 11:11:02

1 . *
2 . * 4. RE-RUN LINEAR MIXED MODELS USING RACE/CLASS DIFFERENTIALS BETWEEN SCHOOL AND DI
  > STRICT
3 . *
4 .
5 . *mi xeq: gen povertydiff = povertysd - povertyschoolprop
6 . *mi xeq: gen pocdiff = pocsd - pocschoolprop
7 .
8 . /*
  > * Check nesting in these new DVs using different model parameters. These should all
  > be the same (CMO x state with district nested therein):
  > mi xeq 1: quietly xtmixed povertydiff inquiry_full_log primary middle high lnage lns
  > tudents urban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: , nolog; xtm
  > rho
  > mi xeq 1: quietly xtmixed povertydiff readall14 mathall14 primary middle high lnage
  > lnstudents urban readlevel14 mathlevel14 || _all:R.cmoname || _all:R.state || geodis
  > trict: , nolog; xtmrho
  > mi xeq 1: quietly xtmixed povertydiff inquiry_full_log readall14 mathall14 primary m
  > iddle high lnage lnstudents urban readlevel14 mathlevel14 || _all:R.cmoname || _all:
  > R.state || geodistrict: , nolog; xtmrho
  >
  > * Now check nesting for new race differential var:
  > mi xeq 1: quietly xtmixed pocdiff inquiry_full_log primary middle high lnage lnstude
  > nts urban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: , nolog; xtmrho
  > mi xeq 1: quietly xtmixed pocdiff readall14 mathall14 primary middle high lnage lnst
  > udents urban readlevel14 mathlevel14 || _all:R.cmoname || _all:R.state || geodistric
  > t: , nolog; xtmrho
  > mi xeq 1: quietly xtmixed pocdiff inquiry_full_log readall14 mathall14 primary middl
  > e high lnage lnstudents urban readlevel14 mathlevel14 || _all:R.cmoname || _all:R.st
  > ate || geodistrict: , nolog; xtmrho
  > */
9 .
10. * PT 1:
11. * 0. controls only
12. mi est, dots: mixed inquiry_full_log primary middle high lnage lnstudents urban pctp
  > dfs || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784

  ------------------------------------------------------------------------------
                  |  No. of       Observations per Group
   Group Variable |  Groups    Minimum    Average    Maximum
  ----------------+-------------------------------------------------------------
            _all  |       1      5,784    5,784.0      5,784
       geodistrict|   1,481          1        3.9        251
  ------------------------------------------------------------------------------

                                                    Average RVI      =     0.0000
                                                    Largest FMI      =     0.0000
  DF adjustment:   Large sample                     DF:     min      =   5.14e+58
                                                            avg      =   2.46e+61
                                                            max      =          .
  Model F test:       Equal FMI                     F(   7, 1.2e+64) =      10.20
                                                    Prob > F         =     0.0000
```

inquiry_full_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	.0013426	.003901	0.34	0.731	-.0063031	.0089884
middle	-.0124991	.0058186	-2.15	0.032	-.0239033	-.001095
high	-.0097576	.0046736	-2.09	0.037	-.0189177	-.0005976
lnage	-.0048955	.0016684	-2.93	0.003	-.0081654	-.0016256
lnstudents	.0099569	.0018209	5.47	0.000	.0063881	.0135258
urban	.0059421	.0039068	1.52	0.128	-.001715	.0135992
pctpdfs	.118419	.0318136	3.72	0.000	.0560655	.1807726
_cons	.0756538	.0130765	5.79	0.000	.0500244	.1012832

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	.0770352	.0042986	.0690544	.0859384
_all: Identity sd(R.state)	.0264266	.00484	.0184563	.0378388
geodistrict: Identity sd(_cons)	.041052	.0030242	.0355327	.0474286
sd(Residual)	.1007134	.0011072	.0985665	.1029071

```
13. * 1. poverty differential
14. mi est, dots: mixed inquiry_full_log povertydiff primary middle high lnage lnstudent
  > s urban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations       =          5
  Mixed-effects ML regression                       Number of obs     =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	1	5,784	5,784.0	5,784
geodistrict	1,481	1	3.9	251

```
                                                    Average RVI       =     0.0080
                                                    Largest FMI       =     0.0796
  DF adjustment:   Large sample                     DF:     min       =     676.53
                                                            avg       = 6510478.23
                                                            max       =   6.09e+07
  Model F test:       Equal FMI                     F(   8,168386.0)  =      22.48
                                                    Prob > F          =     0.0000
```

inquiry_full_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
povertydiff	.0592817	.0059016	10.05	0.000	.0476941	.0708693
primary	.0009971	.00387	0.26	0.797	-.006588	.0085822
middle	-.0114772	.0057733	-1.99	0.047	-.0227927	-.0001617
high	-.010757	.0046371	-2.32	0.020	-.0198455	-.0016685
lnage	-.0046874	.0016527	-2.84	0.005	-.0079266	-.0014481
lnstudents	.0084789	.0018086	4.69	0.000	.0049341	.0120236
urban	.0092015	.003863	2.38	0.017	.0016302	.0167728
pctpdfs	.1162271	.0315769	3.68	0.000	.0543371	.1781172
_cons	.1072823	.0132624	8.09	0.000	.0812884	.1332761

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.0776407**	**.0043032**	**.0696485**	**.0865501**
_all: Identity sd(R.state)	**.0248422**	**.0046792**	**.0171735**	**.0359353**
geodistrict: Identity sd(_cons)	**.0394661**	**.0030177**	**.0339734**	**.0458468**
sd(Residual)	**.0999379**	**.0010996**	**.0978057**	**.1021165**

```
15. * 2. race differential
16.
17. * PT 2:
18. * 0. controls only
19. mi est, dots: mixed povertydiff primary middle high lnage lnstudents urban || _all:R
  > .cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

```
                                                  Average RVI       =     0.0732
                                                  Largest FMI       =     0.1272
DF adjustment:   Large sample                     DF:     min       =     273.98
                                                          avg       =   1,735.56
                                                          max       =   6,154.19
Model F test:       Equal FMI                     F(   6, 2737.3)   =      11.60
                                                  Prob > F          =     0.0000
```

povertydiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	**.0058325**	**.0094815**	**0.62**	**0.539**	**-.0128316**	**.0244967**
middle	**-.0187592**	**.0138682**	**-1.35**	**0.177**	**-.0460038**	**.0084855**
high	**.0165469**	**.0112914**	**1.47**	**0.144**	**-.0056677**	**.0387616**
lnage	**-.0048683**	**.0038841**	**-1.25**	**0.210**	**-.0124837**	**.0027471**
lnstudents	**.0262898**	**.0044602**	**5.89**	**0.000**	**.0175092**	**.0350704**
urban	**-.0511746**	**.0094873**	**-5.39**	**0.000**	**-.069774**	**-.0325752**
_cons	**-.5432353**	**.0332984**	**-16.31**	**0.000**	**-.6086098**	**-.4778608**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.119871**	**.0093552**	**.1028656**	**.1396877**
_all: Identity sd(R.state)	**.1003302**	**.0147869**	**.0751217**	**.1339978**
geodistrict: Identity sd(_cons)	**.1141475**	**.0062926**	**.1024413**	**.1271914**
sd(Residual)	**.2291371**	**.0025463**	**.2241943**	**.2341889**

```
20. * 1. IBL
21. mi est, dots: mixed povertydiff inquiry_full_log primary middle high lnage lnstudent
  > s urban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

```
                                                  Average RVI       =     0.0920
                                                  Largest FMI       =     0.2455
  DF adjustment:   Large sample                   DF:     min       =      78.04
                                                          avg       =   1,428.15
                                                          max       =   6,063.18
  Model F test:       Equal FMI                   F(   8, 2428.5)   =      20.02
                                                  Prob > F          =     0.0000
```

povertydiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquiry_full_log	**.2980827**	**.0311036**	**9.58**	**0.000**	**.2369654**	**.3592**
primary	**.0056184**	**.0094111**	**0.60**	**0.551**	**-.0129089**	**.0241457**
middle	**-.0148101**	**.0138035**	**-1.07**	**0.284**	**-.0419352**	**.012315**
high	**.019316**	**.0112136**	**1.72**	**0.086**	**-.002748**	**.0413799**
lnage	**-.0033594**	**.0038617**	**-0.87**	**0.384**	**-.0109316**	**.0042128**
lnstudents	**.0231182**	**.0044473**	**5.20**	**0.000**	**.0143598**	**.0318766**
urban	**-.0534828**	**.0093823**	**-5.70**	**0.000**	**-.0718772**	**-.0350883**
pctpdfs	**-.0289489**	**.0822014**	**-0.35**	**0.726**	**-.1925979**	**.1347002**
_cons	**-.5654291**	**.0329519**	**-17.16**	**0.000**	**-.6301121**	**-.500746**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.1230211**	**.0093998**	**.1059078**	**.1428998**
_all: Identity sd(R.state)	**.0981291**	**.0146403**	**.0732035**	**.1315418**
geodistrict: Identity sd(_cons)	**.111094**	**.0062608**	**.0994568**	**.1240928**
sd(Residual)	**.2273012**	**.0025023**	**.2224459**	**.2322625**

```
22. * 2. academic performance
23. mi est, dots: mixed povertydiff readall14 mathall14 primary middle high lnage lnstud
  > ents urban readlevel14 mathlevel14 || _all:R.cmoname || _all:R.state || geodistrict:
  >  ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

Average RVI = **0.2379**
Largest FMI = **0.4183**
DF adjustment: **Large sample** DF: min = **27.98**
avg = **483.87**
max = **3,860.63**
Model F test: **Equal FMI** F(**10**, **674.1**) = **106.73**
Prob > F = **0.0000**

povertydiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
readall14	**.4502869**	**.0268736**	**16.76**	**0.000**	**.3968857**	**.5036882**
mathall14	**.1076342**	**.0304014**	**3.54**	**0.001**	**.0453574**	**.1699111**
primary	**-.0098241**	**.0087568**	**-1.12**	**0.263**	**-.0270827**	**.0074344**
middle	**-.0298769**	**.0126965**	**-2.35**	**0.019**	**-.0548079**	**-.004946**
high	**-.0028179**	**.0117612**	**-0.24**	**0.812**	**-.0265196**	**.0208838**
lnage	**-.0158607**	**.0037635**	**-4.21**	**0.000**	**-.0232842**	**-.0084373**
lnstudents	**.0052468**	**.0049462**	**1.06**	**0.292**	**-.0045983**	**.0150919**
urban	**-.0380344**	**.008599**	**-4.42**	**0.000**	**-.0549315**	**-.0211373**
readlevel14	**-.0002094**	**.0008236**	**-0.25**	**0.799**	**-.0018274**	**.0014086**
mathlevel14	**.0000869**	**.0008748**	**0.10**	**0.921**	**-.0016566**	**.0018304**
_cons	**-.6657689**	**.038597**	**-17.25**	**0.000**	**-.7424508**	**-.589087**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.115362**	**.0084651**	**.099904**	**.1332118**
_all: Identity sd(R.state)	**.1113467**	**.0149484**	**.0855432**	**.1449337**
geodistrict: Identity sd(_cons)	**.086382**	**.0057722**	**.0757282**	**.0985346**
sd(Residual)	**.2100046**	**.0025379**	**.2050061**	**.2151251**

```
24. * 3. fully specified
25. mi est, dots: mixed povertydiff inquiry_full_log readall14 mathall14 primary middle
  > high lnage lnstudents urban pctpdfs readlevel14 mathlevel14 || _all:R.cmoname || _al
  > l:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

```
                                                Average RVI       =     0.2410
                                                Largest FMI       =     0.4206
DF adjustment:   Large sample                   DF:     min       =      27.67
                                                        avg       =     405.71
                                                        max       =   3,495.13
Model F test:       Equal FMI                   F(  12,  847.0)   =      92.84
                                                Prob > F          =     0.0000
```

povertydiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquiry_full_log	.1830893	.0293397	6.24	0.000	.1252618	.2409167
readall14	.4326319	.0274055	15.79	0.000	.3779713	.4872925
mathall14	.1136335	.0303555	3.74	0.001	.0514196	.1758474
primary	-.0098216	.008726	-1.13	0.262	-.0270199	.0073766
middle	-.0270379	.0126789	-2.13	0.033	-.0519378	-.002138
high	-.0008486	.0117295	-0.07	0.943	-.0244898	.0227927
lnage	-.0146503	.0037628	-3.89	0.000	-.0220752	-.0072254
lnstudents	.0041918	.0049651	0.84	0.401	-.005706	.0140896
urban	-.0396862	.0085798	-4.63	0.000	-.0565505	-.0228219
pctpdfs	-.001292	.0770948	-0.02	0.987	-.1559875	.1534035
readlevel14	-.0002181	.0008219	-0.27	0.791	-.0018331	.001397
mathlevel14	.0001699	.000866	0.20	0.845	-.0015536	.0018933
_cons	-.6792979	.0383311	-17.72	0.000	-.7554253	-.6031706

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	.1163875	.0084754	.1009019	.1342496
_all: Identity sd(R.state)	.1094317	.0148264	.0838622	.1427974
geodistrict: Identity sd(_cons)	.0853869	.0057723	.074732	.0975608
sd(Residual)	.209226	.0024928	.2043295	.2142399

```
26.
27. * PT 3:
28. * 0. controls only
29. mi est, dots: mixed pocdiff primary middle high lnage lnstudents urban || _all:R.cmo
  > name || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	1	5,784	5,784.0	5,784
geodistrict	1,481	1	3.9	251

```
                                                Average RVI       =     0.0057
                                                Largest FMI       =     0.0177
DF adjustment:   Large sample                   DF:     min       =  12,918.88
                                                        avg       =   3.56e+09
                                                        max       =   3.91e+10
Model F test:       Equal FMI                   F(   6,532219.2)  =      25.88
                                                Prob > F          =     0.0000
```

pocdiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	-.0326782	.0069225	-4.72	0.000	-.0462461	-.0191103
middle	-.0458543	.010215	-4.49	0.000	-.0658753	-.0258332
high	-.0401534	.008306	-4.83	0.000	-.0564332	-.0238736
lnage	.0102715	.0030002	3.42	0.001	.0043908	.0161523
lnstudents	.0037366	.0033023	1.13	0.258	-.0027359	.010209
urban	-.0774944	.0079261	-9.78	0.000	-.0930292	-.0619595
_cons	-.2536046	.0275384	-9.21	0.000	-.3075788	-.1996304

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	.1044545	.0069381	.0917039	.118978
_all: Identity sd(R.state)	.1018291	.0141104	.0776106	.133605
geodistrict: Identity sd(_cons)	.1310743	.0047239	.1221342	.1406688
sd(Residual)	.1714492	.0018715	.1678201	.1751568

```
30. * 1. IBL
31. mi est, dots: mixed pocdiff inquiry_full_log primary middle high lnage lnstudents ur
  > ban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	1	5,784	5,784.0	5,784
geodistrict	1,481	1	3.9	251

```
                                                    Average RVI      =     0.0056
                                                    Largest FMI      =     0.0207
  DF adjustment:   Large sample                     DF:     min      =   9,517.80
                                                            avg      =   1.47e+09
                                                            max      =   1.91e+10
  Model F test:       Equal FMI                     F(   8,969100.4) =      40.01
                                                    Prob > F         =     0.0000
```

pocdiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquiry_full_log	.2917836	.0230479	12.66	0.000	.2466103	.3369569
primary	-.0326914	.0068229	-4.79	0.000	-.0460641	-.0193186
middle	-.0419655	.0100689	-4.17	0.000	-.0617002	-.0222308
high	-.0373082	.0081908	-4.55	0.000	-.0533621	-.0212543
lnage	.011538	.0029593	3.90	0.000	.0057373	.0173386
lnstudents	.0009235	.0032668	0.28	0.777	-.0054793	.0073262
urban	-.0793676	.007835	-10.13	0.000	-.0947238	-.0640113
pctpdfs	-.1072002	.05686	-1.89	0.059	-.2186439	.0042436
_cons	-.2762554	.0273151	-10.11	0.000	-.329792	-.2227188

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.1053186**	**.0068921**	**.0926405**	**.1197317**
_all: Identity sd(R.state)	**.1011843**	**.013972**	**.0771926**	**.1326327**
geodistrict: Identity sd(_cons)	**.1309567**	**.0047002**	**.1220601**	**.1405019**
sd(Residual)	**.1686073**	**.0018453**	**.1650291**	**.1722631**

```
32. * 2. academic performance
33. mi est, dots: mixed pocdiff readall14 mathall14 primary middle high lnage lnstudents
  >  urban readlevel14 mathlevel14 || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

```
                                                  Average RVI       =     0.0972
                                                  Largest FMI       =     0.4163
  DF adjustment:   Large sample                   DF:     min       =      28.24
                                                          avg       =  28,819.06
                                                          max       = 151,937.20
  Model F test:       Equal FMI                   F(  10, 2214.1)   =     101.62
                                                  Prob > F          =     0.0000
```

pocdiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
readall14	**.3274931**	**.0190997**	**17.15**	**0.000**	**.2900407**	**.3649455**
mathall14	**.0560295**	**.0209192**	**2.68**	**0.009**	**.0145665**	**.0974926**
primary	**-.0414025**	**.0064702**	**-6.40**	**0.000**	**-.0540849**	**-.0287202**
middle	**-.0527131**	**.0095105**	**-5.54**	**0.000**	**-.0713535**	**-.0340728**
high	**-.0522472**	**.0080213**	**-6.51**	**0.000**	**-.067989**	**-.0365055**
lnage	**.0019757**	**.0028131**	**0.70**	**0.483**	**-.0035402**	**.0074917**
lnstudents	**-.012301**	**.0035145**	**-3.50**	**0.000**	**-.0191896**	**-.0054124**
urban	**-.0690041**	**.0074998**	**-9.20**	**0.000**	**-.0837063**	**-.0543019**
readlevel14	**-.0004909**	**.0007777**	**-0.63**	**0.533**	**-.0020833**	**.0011015**
mathlevel14	**.0000452**	**.0007151**	**0.06**	**0.950**	**-.0013962**	**.0014865**
_cons	**-.3260709**	**.0293254**	**-11.12**	**0.000**	**-.3835492**	**-.2685926**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.105661**	**.0066866**	**.0933342**	**.1196157**
_all: Identity sd(R.state)	**.1047695**	**.0141405**	**.0804171**	**.1364963**
geodistrict: Identity sd(_cons)	**.1293885**	**.0044765**	**.1209055**	**.1384667**
sd(Residual)	**.1562983**	**.0017512**	**.1529025**	**.1597695**

```
34. * 3. fully specified
35. mi est, dots: mixed pocdiff inquiry_full_log readall14 mathall14 primary middle high
  >  lnage lnstudents urban pctpdfs readlevel14 mathlevel14 || _all:R.cmoname || _all:R.
  > state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations      =          5
  Mixed-effects ML regression                       Number of obs    =      5,784
```

Group Variable	No. of Groups	Observations per Group Minimum	Average	Maximum
_all	**1**	**5,784**	**5,784.0**	**5,784**
geodistrict	**1,481**	**1**	**3.9**	**251**

```
                                                  Average RVI      =     0.0907
                                                  Largest FMI      =     0.4417
  DF adjustment:   Large sample                   DF:     min      =      25.13
                                                          avg      =  26,364.93
                                                          max      = 166,167.19
  Model F test:       Equal FMI                   F(  12, 3403.5)  =      94.78
                                                  Prob > F         =     0.0000
```

pocdiff	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquiry_full_log	**.2121909**	**.0217037**	**9.78**	**0.000**	**.1696498**	**.254732**
readall14	**.3080822**	**.0193437**	**15.93**	**0.000**	**.2701125**	**.3460519**
mathall14	**.0619555**	**.020945**	**2.96**	**0.004**	**.0203598**	**.1035512**
primary	**-.0411969**	**.006406**	**-6.43**	**0.000**	**-.0537534**	**-.0286405**
middle	**-.049415**	**.0094256**	**-5.24**	**0.000**	**-.0678889**	**-.030941**
high	**-.0498268**	**.0079401**	**-6.28**	**0.000**	**-.0654075**	**-.0342462**
lnage	**.0032076**	**.0027907**	**1.15**	**0.250**	**-.0022643**	**.0086796**
lnstudents	**-.0133336**	**.0034881**	**-3.82**	**0.000**	**-.0201704**	**-.0064967**
urban	**-.0707137**	**.0074471**	**-9.50**	**0.000**	**-.0853122**	**-.0561152**
pctpdfs	**-.0987475**	**.0532425**	**-1.85**	**0.064**	**-.2031111**	**.0056162**
readlevel14	**-.0004871**	**.0007847**	**-0.62**	**0.540**	**-.0021029**	**.0011286**
mathlevel14	**.0001218**	**.0007142**	**0.17**	**0.865**	**-.0013209**	**.0015645**
_cons	**-.3421537**	**.0291368**	**-11.74**	**0.000**	**-.3992627**	**-.2850446**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
_all: Identity sd(R.cmoname)	**.1052144**	**.006626**	**.0929953**	**.1190391**
_all: Identity sd(R.state)	**.1038115**	**.0140096**	**.0796842**	**.1352441**
geodistrict: Identity sd(_cons)	**.1297943**	**.0044636**	**.121334**	**.1388445**
sd(Residual)	**.1546572**	**.0017303**	**.1513021**	**.1580867**

```
36.
37. log close
       name:  <unnamed>
        log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_dis
  > trict_differentials_mi5_linear_120919.smcl
    log type:  smcl
   closed on:   9 Dec 2019, 16:49:25
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
      name:  <unnamed>
       log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_dis
  > trict_differentials_mi5_linear_120919.smcl
    log type:  smcl
   opened on:   2 Mar 2020, 16:26:23

38. do "/90days/jhaber/STATATMP/SD15526.000000"

39. * Create differentials such that higher means school has LOWER poverty/POC density t
  > han does surrounding district:
40. mi xeq: gen povertydiff = povertysd - povertyschoolprop

  m=0 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (476 missing values generated)

  m=1 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (12 missing values generated)

  m=2 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (12 missing values generated)

  m=3 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (12 missing values generated)

  m=4 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (12 missing values generated)

  m=5 data:
  -> gen povertydiff = povertysd - povertyschoolprop
  (12 missing values generated)

41. mi xeq: gen pocdiff = pocsd - pocschoolprop

  m=0 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (40 missing values generated)

  m=1 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (12 missing values generated)

  m=2 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (12 missing values generated)

  m=3 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (12 missing values generated)

  m=4 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (12 missing values generated)

  m=5 data:
  -> gen pocdiff = pocsd - pocschoolprop
  (12 missing values generated)
```

```
42.
  end of do-file

43. do "/90days/jhaber/STATATMP/SD15526.000000"

44. * 2. race differential
45. mi est, dots: mixed inquiry_seed_log pocdiff primary middle high lnage lnstudents ur
  > ban pctpdfs || _all:R.cmoname || _all:R.state || geodistrict: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations      =          5
  Mixed-effects ML regression                     Number of obs    =      5,784

------------------------------------------------------------------------------
                |  No. of       Observations per Group
 Group Variable |  Groups    Minimum    Average    Maximum
----------------+-------------------------------------------------------------
           _all |       1      5,784    5,784.0      5,784
    geodistrict |   1,481          1        3.9        251
------------------------------------------------------------------------------

                                                Average RVI      =     0.0001
                                                Largest FMI      =     0.0014
  DF adjustment:   Large sample                 DF:     min      = 1999509.69
                                                        avg      =   1.29e+10
                                                        max      =   1.28e+11
  Model F test:       Equal FMI                 F(   8, 4.8e+08) =      12.48
                                                Prob > F         =     0.0000

------------------------------------------------------------------------------
inquiry_seed_log |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
         pocdiff |   .0230936   .0029371     7.86   0.000     .0173369    .0288503
         primary |   .0041248   .0016532     2.50   0.013     .0008846    .0073649
          middle |  -.0017067   .0024755    -0.69   0.491    -.0065587    .0031453
            high |  -.0026137   .0019776    -1.32   0.186    -.0064896    .0012622
           lnage |   -.001034   .0007016    -1.47   0.141    -.0024091    .0003411
      lnstudents |   .0023379   .0007575     3.09   0.002     .0008533    .0038225
           urban |   .0005378    .001536     0.35   0.726    -.0024727    .0035483
         pctpdfs |   .0214108   .0132901     1.61   0.107    -.0046373     .047459
           _cons |   .0131619   .0052663     2.50   0.012     .0028402    .0234836
------------------------------------------------------------------------------

------------------------------------------------------------------------------
  Random-effects Parameters |   Estimate   Std. Err.     [95% Conf. Interval]
----------------------------+-------------------------------------------------
_all: Identity              |
                sd(R.cmoname) |   .0224293   .0015565       .019577    .0256972
----------------------------+-------------------------------------------------
_all: Identity              |
                  sd(R.state) |   .0093904   .0016655      .0066331     .013294
----------------------------+-------------------------------------------------
geodistrict: Identity       |
                    sd(_cons) |   .0104657   .0015509      .0078276    .0139928
----------------------------+-------------------------------------------------
                 sd(Residual) |   .0441515   .0004757       .043229    .0450936
------------------------------------------------------------------------------

46.
  end of do-file

47. log close
       name:  <unnamed>
        log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_dis
  > trict_differentials_mi5_linear_120919.smcl
    log type:  smcl
   closed on:   2 Mar 2020, 17:26:28
------------------------------------------------------------------------------
```