Statistics/Data Analysis

```
      name:  <unnamed>
       log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_fil
> tdensity_mi5_linear_030220.smcl
  log type:  smcl
 opened on:   2 Mar 2020, 18:05:59

1 . *
2 . * 4D. FILTERED DATA: DISTRICTS WITH ABOVE-AVERAGE POPULATION DENSITY
3 . *
4 .
5 . egen popdensitymean = mean(popdensity)

6 .
7 . drop if popdensity < popdensitymean
  (12,927 observations deleted)

8 .
9 . * PT 1:
10. * 0. controls only
11. mi est, dots: mixed inquiry_full_log primary middle high lnage lnstudents urban pctp
  > dfs || cmoname: ,
  (system variable _mi_id updated due to changed number of obs.)

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations       =          5
  Mixed-effects ML regression                       Number of obs     =      1,642

  Group variable: cmoname                           Number of groups  =        197
                                                    Obs per group:
                                                                  min =          1
                                                                  avg =        8.3
                                                                  max =        937
                                                    Average RVI       =     0.0000
                                                    Largest FMI       =     0.0000
  DF adjustment:   Large sample                     DF:     min       =   9.60e+61
                                                            avg       =   9.00e+62
                                                            max       =          .
  Model F test:       Equal FMI                     F(   7, 1.2e+64)  =       2.41
                                                    Prob > F          =     0.0185
```

inquir~l_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	-.0092181	.0082799	-1.11	0.266	-.0254464	.0070101
middle	-.0259562	.0107755	-2.41	0.016	-.0470758	-.0048367
high	-.0151927	.0096519	-1.57	0.115	-.0341101	.0037247
lnage	-.0002644	.0033638	-0.08	0.937	-.0068573	.0063285
lnstudents	.0022441	.0040345	0.56	0.578	-.0056633	.0101516
urban	.002846	.0085878	0.33	0.740	-.0139859	.0196779
pctpdfs	.2237535	.0752496	2.97	0.003	.076267	.37124
_cons	.1216092	.025973	4.68	0.000	.070703	.1725154

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
cmoname: Identity				
sd(_cons)	.0795487	.0066173	.0675811	.0936357
sd(Residual)	.105451	.0019479	.1017015	.1093388

```
12. * 1. school poverty
13. mi est, dots: mixed inquiry_full_log povertyschool primary middle high lnage lnstude
  > nts urban pctpdfs || cmoname: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      1,642

  Group variable: cmoname                         Number of groups  =        197
                                                  Obs per group:
                                                               min =          1
                                                               avg =        8.3
                                                               max =        937
                                                  Average RVI       =     0.0057
                                                  Largest FMI       =     0.0310
  DF adjustment:   Large sample                   DF:     min       =   4,278.75
                                                          avg       = 9262587.22
                                                          max       =   7.62e+07
  Model F test:       Equal FMI                   F(   8,453317.0)  =       6.81
                                                  Prob > F          =     0.0000
```

inquir~l_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
povertysch~l	-.0005246	.0000868	-6.04	0.000	-.0006948	-.0003545
primary	-.011816	.008199	-1.44	0.150	-.0278856	.0042537
middle	-.0258129	.0106531	-2.42	0.015	-.0466926	-.0049331
high	-.0163244	.0095477	-1.71	0.087	-.0350376	.0023888
lnage	.0008337	.0033321	0.25	0.802	-.005697	.0073644
lnstudents	.0015585	.0039951	0.39	0.696	-.0062718	.0093888
urban	.0053662	.008507	0.63	0.528	-.0113072	.0220395
pctpdfs	.2207375	.0751714	2.94	0.003	.0733886	.3680864
_cons	.1583746	.0263899	6.00	0.000	.1066514	.2100978

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
cmoname: Identity				
sd(_cons)	.0795704	.00661	.0676146	.0936401
sd(Residual)	.1041702	.0019283	.1004585	.1080191

```
14. * 2. school race
15. mi est, dots: mixed inquiry_full_log pocschoolprop primary middle high lnage lnstude
  > nts urban pctpdfs || cmoname: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      1,642

  Group variable: cmoname                         Number of groups  =        197
                                                  Obs per group:
                                                               min =          1
                                                               avg =        8.3
                                                               max =        937
                                                  Average RVI       =     0.0000
                                                  Largest FMI       =     0.0000
  DF adjustment:   Large sample                   DF:     min       =   8.28e+62
                                                          avg       =   7.42e+63
                                                          max       =          .
  Model F test:       Equal FMI                   F(   8, 8.2e+64)  =       7.99
                                                  Prob > F          =     0.0000
```

inquir~l_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
pocschoolp~p	-.0930369	.0136271	-6.83	0.000	-.1197454	-.0663284
primary	-.0067817	.0081729	-0.83	0.407	-.0228004	.009237
middle	-.0204659	.010657	-1.92	0.055	-.0413533	.0004216
high	-.0109543	.0095386	-1.15	0.251	-.0296496	.0077411
lnage	-.002921	.0033406	-0.87	0.382	-.0094685	.0036264
lnstudents	.0065946	.0040294	1.64	0.102	-.001303	.0144921
urban	.0141116	.0086296	1.64	0.102	-.002802	.0310253
pctpdfs	.2192354	.0741667	2.96	0.003	.0738713	.3645994
_cons	.1696611	.0265583	6.39	0.000	.1176079	.2217144

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
cmoname: Identity				
sd(_cons)	.0777178	.0065644	.0658604	.0917101
sd(Residual)	.1040575	.0019238	.1003545	.1078972

```
16. * 3. school district poverty
17. mi est, dots: mixed inquiry_full_log povertysd primary middle high lnage lnstudents
  > urban pctpdfs || cmoname: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                     Imputations       =          5
  Mixed-effects ML regression                       Number of obs     =      1,642

  Group variable: cmoname                           Number of groups  =        197
                                                    Obs per group:
                                                                  min =          1
                                                                  avg =        8.3
                                                                  max =        937
                                                    Average RVI       =     0.0033
                                                    Largest FMI       =     0.0307
  DF adjustment:   Large sample                     DF:     min       =   4,362.53
                                                            avg       =   1.81e+07
                                                            max       =   1.02e+08
  Model F test:       Equal FMI                     F(   8, 1.3e+06)  =       6.05
                                                    Prob > F          =     0.0000
```

inquir~l_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
povertysd	-.24857	.0449832	-5.53	0.000	-.33676	-.1603801
primary	-.0129611	.0082289	-1.58	0.115	-.0290894	.0031673
middle	-.0320372	.0107206	-2.99	0.003	-.0530492	-.0110252
high	-.0181614	.0095696	-1.90	0.058	-.0369175	.0005947
lnage	-.0002275	.003331	-0.07	0.946	-.0067561	.0063011
lnstudents	.0018299	.0039975	0.46	0.647	-.006005	.0096648
urban	.0104186	.0086113	1.21	0.226	-.0064593	.0272965
pctpdfs	.2109476	.0747219	2.82	0.005	.0644954	.3573998
_cons	.1682828	.0271214	6.20	0.000	.1151254	.2214401

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
cmoname: Identity				
sd(_cons)	.081546	.0066011	.0695822	.0955668
sd(Residual)	.1041894	.0019252	.1004836	.1080319

```
18. * 4. school district race
19. mi est, dots: mixed inquiry_full_log pocsd primary middle high lnage lnstudents urba
  > n pctpdfs || cmoname: ,

  Imputations (5):
    ..... done

  Multiple-imputation estimates                   Imputations       =          5
  Mixed-effects ML regression                     Number of obs     =      1,642

  Group variable: cmoname                         Number of groups  =        197
                                                  Obs per group:
                                                               min =          1
                                                               avg =        8.3
                                                               max =        937
                                                  Average RVI       =     0.0008
                                                  Largest FMI       =     0.0088
  DF adjustment:   Large sample                   DF:     min       =  52,553.35
                                                          avg       =   3.32e+10
                                                          max       =   1.79e+11
  Model F test:       Equal FMI                   F(   8, 2.0e+07)  =       2.18
                                                  Prob > F          =     0.0256
```

inquir~l_log	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
pocsd	-.0158999	.0199546	-0.80	0.426	-.0550112	.0232114
primary	-.0091186	.0082793	-1.10	0.271	-.0253457	.0071084
middle	-.025934	.0107735	-2.41	0.016	-.0470497	-.0048184
high	-.0154205	.0096546	-1.60	0.110	-.0343433	.0035022
lnage	-.0003891	.003367	-0.12	0.908	-.0069882	.00621
lnstudents	.0025737	.0040549	0.63	0.526	-.0053737	.010521
urban	.0038837	.0086847	0.45	0.655	-.0131379	.0209054
pctpdfs	.2222385	.0752591	2.95	0.003	.0747333	.3697437
_cons	.1271293	.0268774	4.73	0.000	.0744505	.1798081

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
cmoname: Identity				
sd(_cons)	.0795093	.0066173	.0675422	.0935968
sd(Residual)	.1054326	.0019476	.1016836	.1093198

```
20.
  end of do-file

21. do "/90days/jhaber/STATATMP/SD25493.000000"

22. * Load original data for filtering:
23. use "data/charter_schools_data_5_imputations.dta", clear

24. mi update

25.
26. log using "logs/robust_filtdensity_mi5_linear_030220.smcl", replace
  log file already open
  r(604);

  end of do-file

  r(604);
```

```
27. do "/90days/jhaber/STATATMP/SD25493.000000"

28. * PT 2:
29. * 0. controls only
30. mi est, dots: mixed povertyschoolprop primary middle high lnage lnstudents urban ||
  > geodistrict: ,

  Imputations (5):
    ..... done

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

  Group variable: geodistrict                     Number of groups  =      1,481
                                                  Obs per group:
                                                               min =          1
                                                               avg =        3.9
                                                               max =        251
                                                  Average RVI       =     0.0675
                                                  Largest FMI       =     0.1351
  DF adjustment:   Large sample                   DF:     min       =     244.08
                                                          avg       =   3,183.61
                                                          max       =  13,397.08
  Model F test:       Equal FMI                   F(   6, 3281.1)   =      10.99
                                                  Prob > F          =     0.0000
```

povertysch~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	-.0046805	.0095632	-0.49	0.625	-.0234571	.0140962
middle	.0323977	.0140638	2.30	0.021	.0048021	.0599933
high	-.0094542	.011426	-0.83	0.408	-.0319004	.0129919
lnage	.0014568	.0040016	0.36	0.716	-.006399	.0093127
lnstudents	-.0169675	.0044046	-3.85	0.000	-.0256434	-.0082916
urban	.0695119	.0108689	6.40	0.000	.0482066	.0908172
_cons	.5703494	.026164	21.80	0.000	.518934	.6217649

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
geodistrict: Identity sd(_cons)	.1900546	.0064028	.1779097	.2030286
sd(Residual)	.2390346	.0026034	.2339817	.2441967

```
31. * 1. IBL
32. mi est, dots: mixed povertyschoolprop inquiry_full_log primary middle high lnage lns
  > tudents urban pctpdfs || geodistrict: ,

  Imputations (5):
    ..... done

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

  Group variable: geodistrict                     Number of groups  =      1,481
                                                  Obs per group:
                                                               min =          1
                                                               avg =        3.9
                                                               max =        251
                                                  Average RVI       =     0.0807
                                                  Largest FMI       =     0.1866
  DF adjustment:   Large sample                   DF:     min       =     131.61
                                                          avg       =   2,567.04
                                                          max       =  12,200.37
  Model F test:       Equal FMI                   F(   8, 3361.3)   =      19.96
                                                  Prob > F          =     0.0000
```

povertysch~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquir~l_log	**-.2985455**	**.0308751**	**-9.67**	**0.000**	**-.3591653**	**-.2379258**
primary	**-.0035615**	**.0094917**	**-0.38**	**0.708**	**-.0221981**	**.0150751**
middle	**.0285334**	**.0140095**	**2.04**	**0.042**	**.001039**	**.0560277**
high	**-.01196**	**.0113481**	**-1.05**	**0.292**	**-.0342545**	**.0103345**
lnage	**.0005313**	**.0039804**	**0.13**	**0.894**	**-.0072843**	**.008347**
lnstudents	**-.0134949**	**.0044048**	**-3.06**	**0.002**	**-.0221777**	**-.0048122**
urban	**.0718041**	**.0107462**	**6.68**	**0.000**	**.0507393**	**.0928688**
pctpdfs	**.0640456**	**.0837048**	**0.77**	**0.446**	**-.1015353**	**.2296264**
_cons	**.5934848**	**.0259434**	**22.88**	**0.000**	**.5425226**	**.6444471**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
geodistrict: Identity sd(_cons)	**.1854702**	**.0063368**	**.1734559**	**.1983167**
sd(Residual)	**.2375566**	**.0025726**	**.2325645**	**.2426558**

```
33. * 2. academic performance
34. mi est, dots: mixed povertyschoolprop readall14 mathall14 primary middle high lnage
  > lnstudents urban readlevel14 mathlevel14 || geodistrict: ,

  Imputations (5):
    ..... done

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

  Group variable: geodistrict                       Number of groups  =      1,481
                                                    Obs per group:
                                                                  min =          1
                                                                  avg =        3.9
                                                                  max =        251
                                                    Average RVI       =     0.2201
                                                    Largest FMI       =     0.3683
  DF adjustment:   Large sample                     DF:     min       =      35.85
                                                            avg       =     866.14
                                                            max       =   6,093.00
  Model F test:       Equal FMI                     F(  10,  789.4)   =      90.63
                                                    Prob > F          =     0.0000
```

povertysch~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
readall14	**-.4410165**	**.0284298**	**-15.51**	**0.000**	**-.4976251**	**-.3844078**
mathall14	**-.0671554**	**.0302048**	**-2.22**	**0.033**	**-.1284005**	**-.0059102**
primary	**.0029805**	**.0088278**	**0.34**	**0.736**	**-.0143448**	**.0203057**
middle	**.0395737**	**.0130393**	**3.03**	**0.002**	**.0139981**	**.0651492**
high	**.0036065**	**.0119336**	**0.30**	**0.764**	**-.0202931**	**.0275062**
lnage	**.0083949**	**.0039555**	**2.12**	**0.036**	**.0005555**	**.0162344**
lnstudents	**.0002029**	**.0050872**	**0.04**	**0.968**	**-.0099364**	**.0103421**
urban	**.0638187**	**.010223**	**6.24**	**0.000**	**.0437565**	**.0838809**
readlevel14	**-.0006173**	**.0008473**	**-0.73**	**0.467**	**-.0022811**	**.0010464**
mathlevel14	**.0002824**	**.0008299**	**0.34**	**0.734**	**-.0013483**	**.0019132**
_cons	**.7098465**	**.0346865**	**20.46**	**0.000**	**.6394886**	**.7802045**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
geodistrict: Identity sd(_cons)	**.1736084**	**.00578**	**.1626394**	**.1853172**
sd(Residual)	**.22001**	**.0025146**	**.2151027**	**.2250292**

```
35. * 3. fully specified
36. mi est, dots: mixed povertyschoolprop inquiry_full_log readall14 mathall14 primary m
  > iddle high lnage lnstudents urban pctpdfs readlevel14 mathlevel14 || geodistrict: ,

  Imputations (5):
    ..... done

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

  Group variable: geodistrict                     Number of groups  =      1,481
                                                  Obs per group:
                                                               min =          1
                                                               avg =        3.9
                                                               max =        251
                                                  Average RVI       =     0.2139
                                                  Largest FMI       =     0.3736
  DF adjustment:   Large sample                   DF:     min       =      34.87
                                                          avg       =     828.51
                                                          max       =   7,021.44
  Model F test:       Equal FMI                   F(  12, 1051.6)   =      80.82
                                                  Prob > F          =     0.0000
```

povertysch~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquir~l_log	-.2067227	.0294643	-7.02	0.000	-.2647261	-.1487193
readall14	-.4212817	.0286622	-14.70	0.000	-.4784352	-.3641283
mathall14	-.076302	.0302566	-2.52	0.016	-.1377342	-.0148699
primary	.003873	.0088055	0.44	0.660	-.0134104	.0211563
middle	.0365928	.0130185	2.81	0.005	.0110561	.0621296
high	.0017849	.0118738	0.15	0.881	-.0219876	.0255574
lnage	.007471	.0039432	1.89	0.061	-.000345	.0152871
lnstudents	.0018585	.0051215	0.36	0.718	-.0083727	.0120897
urban	.0657172	.0101453	6.48	0.000	.045808	.0856264
pctpdfs	.0522677	.0787455	0.66	0.508	-.1040527	.208588
readlevel14	-.0004844	.0008506	-0.57	0.569	-.002156	.0011873
mathlevel14	.0000951	.0008205	0.12	0.908	-.0015159	.0017061
_cons	.724572	.0343455	21.10	0.000	.655054	.7940899

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
geodistrict: Identity sd(_cons)	.1703819	.0057388	.1594955	.1820113
sd(Residual)	.2194264	.0024784	.2145973	.2243643

```
37.
38. * PT 3:
39. * 0. controls only
40. mi est, dots: mixed pocschoolprop primary middle high lnage lnstudents urban || stat
  > e: || 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
state	43	2	134.5	1,056
geodistrict	1,492	1	3.9	251

			Average RVI	=	**0.0000**
			Largest FMI	=	**0.0000**
DF adjustment:	**Large sample**		DF: min	=	**9.88e+54**
			avg	=	**2.10e+60**
			max	=	**.**
Model F test:	**Equal FMI**		F(**6, 2.1e+62**)	=	**39.01**
			Prob > F	=	**0.0000**

pocschoolp~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
primary	**.0448028**	**.0072437**	**6.19**	**0.000**	**.0306054**	**.0590003**
middle	**.0703974**	**.0106574**	**6.61**	**0.000**	**.0495093**	**.0912854**
high	**.0565576**	**.0086033**	**6.57**	**0.000**	**.0396954**	**.0734198**
lnage	**-.0159215**	**.0030605**	**-5.20**	**0.000**	**-.02192**	**-.0099231**
lnstudents	**.0048071**	**.0033651**	**1.43**	**0.153**	**-.0017885**	**.0114026**
urban	**.1073286**	**.0091897**	**11.68**	**0.000**	**.0893171**	**.12534**
_cons	**.4319549**	**.0352738**	**12.25**	**0.000**	**.3628195**	**.5010902**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
state: Identity sd(_cons)	**.1744746**	**.0227584**	**.1351144**	**.2253007**
geodistrict: Identity sd(_cons)	**.200084**	**.0056393**	**.1893309**	**.2114478**
sd(Residual)	**.1823108**	**.0019655**	**.1784989**	**.1862042**

```
41. * 1. IBL
42. mi est, dots: mixed pocschoolprop inquiry_full_log primary middle high lnage lnstude
  > nts urban pctpdfs || 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
state	**43**	**2**	**134.5**	**1,056**
geodistrict	**1,492**	**1**	**3.9**	**251**

			Average RVI	=	**0.0000**
			Largest FMI	=	**0.0000**
DF adjustment:	**Large sample**		DF: min	=	**9.92e+54**
			avg	=	**1.09e+59**
			max	=	**.**
Model F test:	**Equal FMI**		F(**8, 1.3e+62**)	=	**49.60**
			Prob > F	=	**0.0000**

pocschoolp~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquir~l_log	**-.2923968**	**.0232802**	**-12.56**	**0.000**	**-.3380253**	**-.2467684**
primary	**.0455286**	**.0071399**	**6.38**	**0.000**	**.0315347**	**.0595226**
middle	**.0662506**	**.0105089**	**6.30**	**0.000**	**.0456535**	**.0868476**
high	**.054149**	**.0084812**	**6.38**	**0.000**	**.037526**	**.0707719**
lnage	**-.0166663**	**.0030173**	**-5.52**	**0.000**	**-.0225801**	**-.0107525**
lnstudents	**.0080466**	**.003329**	**2.42**	**0.016**	**.001522**	**.0145713**
urban	**.1095791**	**.009079**	**12.07**	**0.000**	**.0917847**	**.1273736**
pctpdfs	**.1041683**	**.0601487**	**1.73**	**0.083**	**-.0137209**	**.2220575**
_cons	**.456673**	**.0348726**	**13.10**	**0.000**	**.388324**	**.525022**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
state: Identity				
sd(_cons)	**.1721733**	**.0224832**	**.1332943**	**.2223924**
geodistrict: Identity				
sd(_cons)	**.1992213**	**.0055962**	**.1885494**	**.2104973**
sd(Residual)	**.1795236**	**.0019376**	**.1757659**	**.1833616**

```
43. * 2. academic performance
44. mi est, dots: mixed pocschoolprop readall14 mathall14 primary middle high lnage lnst
  > udents urban readlevel14 mathlevel14 || 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
state	**43**	**2**	**134.5**	**1,056**
geodistrict	**1,492**	**1**	**3.9**	**251**

```
                                                    Average RVI       =     0.1006
                                                    Largest FMI       =     0.3333
  DF adjustment:   Large sample                     DF:     min       =      43.48
                                                            avg       =  134,523.71
                                                            max       =  938,075.43
  Model F test:       Equal FMI                     F(  10, 2229.1)   =     106.73
                                                    Prob > F          =     0.0000
```

pocschoolp~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
readall14	**-.3425676**	**.0205975**	**-16.63**	**0.000**	**-.3829903**	**-.3021449**
mathall14	**-.04888**	**.0222751**	**-2.19**	**0.031**	**-.0930694**	**-.0046906**
primary	**.0516087**	**.0067639**	**7.63**	**0.000**	**.0383517**	**.0648657**
middle	**.0790823**	**.0099969**	**7.91**	**0.000**	**.0594887**	**.0986759**
high	**.0648965**	**.008295**	**7.82**	**0.000**	**.0486287**	**.0811642**
lnage	**-.0091191**	**.0029458**	**-3.10**	**0.002**	**-.0149007**	**-.0033375**
lnstudents	**.0233348**	**.0036582**	**6.38**	**0.000**	**.0161645**	**.0305051**
urban	**.0991666**	**.0085948**	**11.54**	**0.000**	**.0823201**	**.1160131**
readlevel14	**.0008406**	**.0007717**	**1.09**	**0.282**	**-.0007151**	**.0023963**
mathlevel14	**-.0003758**	**.000689**	**-0.55**	**0.586**	**-.0017393**	**.0009877**
_cons	**.5003446**	**.0364288**	**13.73**	**0.000**	**.4289397**	**.5717495**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
state: Identity				
sd(_cons)	**.1698052**	**.0217359**	**.132127**	**.218228**
geodistrict: Identity				
sd(_cons)	**.1887164**	**.0053632**	**.1784919**	**.1995267**
sd(Residual)	**.1683143**	**.0018291**	**.1647671**	**.1719378**

```
45. * 3. fully specified
46. mi est, dots: mixed pocschoolprop inquiry_full_log readall14 mathall14 primary middl
  > e high lnage lnstudents urban pctpdfs readlevel14 mathlevel14 || state: || geodistri
  > ct: ,

  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
state	**43**	**2**	**134.5**	**1,056**
geodistrict	**1,492**	**1**	**3.9**	**251**

```
                                                  Average RVI       =     0.0910
                                                  Largest FMI       =     0.3529
  DF adjustment:   Large sample                   DF:     min       =      38.95
                                                          avg       =  151,218.29
                                                          max       =  1063331.52
  Model F test:       Equal FMI                   F(  12, 3576.1)   =      99.30
                                                  Prob > F          =     0.0000
```

pocschoolp~p	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inquir~l_log	**-.2167755**	**.0219404**	**-9.88**	**0.000**	**-.259779**	**-.1737719**
readall14	**-.3214658**	**.0207581**	**-15.49**	**0.000**	**-.362244**	**-.2806876**
mathall14	**-.056707**	**.0223942**	**-2.53**	**0.013**	**-.1012601**	**-.0121539**
primary	**.0520425**	**.0066987**	**7.77**	**0.000**	**.0389132**	**.0651718**
middle	**.0753801**	**.0099071**	**7.61**	**0.000**	**.0559625**	**.0947977**
high	**.0628571**	**.008197**	**7.67**	**0.000**	**.0467838**	**.0789305**
lnage	**-.0099612**	**.0029167**	**-3.42**	**0.001**	**-.0156853**	**-.0042371**
lnstudents	**.0247613**	**.0036248**	**6.83**	**0.000**	**.0176566**	**.0318661**
urban	**.1009571**	**.0085287**	**11.84**	**0.000**	**.0842404**	**.1176738**
pctpdfs	**.1001108**	**.0563621**	**1.78**	**0.076**	**-.010364**	**.2105856**
readlevel14	**.0009294**	**.000774**	**1.20**	**0.237**	**-.0006362**	**.002495**
mathlevel14	**-.0005268**	**.0006849**	**-0.77**	**0.443**	**-.0018828**	**.0008293**
_cons	**.5176614**	**.0361495**	**14.32**	**0.000**	**.4468042**	**.5885185**

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
state: Identity sd(_cons)	**.1682607**	**.021573**	**.1308722**	**.2163307**
geodistrict: Identity sd(_cons)	**.1887415**	**.0053364**	**.1785666**	**.1994962**
sd(Residual)	**.1665788**	**.0018104**	**.1630679**	**.1701652**

```
47.
48. log close
       name:  <unnamed>
        log:  /hdir/0/jhaber/Projects/charter_data/sorting-schools-2019/logs/robust_fil
  > tdensity_mi5_linear_030220.smcl
    log type:  smcl
   closed on:   2 Mar 2020, 18:09:27
```