R Output – A1

Emma Shin

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Exercise 1

Number of students: 340,823

Number of schools: 898

Number of programs: 33 (32 excluding NA)

Number of school-program choices: 3,086

Number of missing scores: 179,887

Number of students who applied to multiple programs in the same school: 120,071

Number of students who applied to fewer than six programs: 17,734

Exercise 2

schoolcode	sssdistrict	ssslong	ssslat	district	long	cutoff	meanscore	size
30107	Cape Coast Municipal	-1.306593895	5.153656006	0	0	394	432.0315789	380
30103	Cape Coast Municipal	-1.306593895	5.153656006	0	0	393	423.5	220
21003	Kwahu South (Mpraeso)	-0.635528684	6.619226456	0	0	372	410.2678571	280
10111	Ga West (Amasaman)	-0.397510529	5.664687634	0	0	371	412.51	600
30104	Cape Coast Municipal	-1.306593895	5.153656006	0	0	373	411.3825	400
20301	Akwapim South (Nsawam)	-0.268249363	5.826002598	0	0	385	407.3066667	450
50110	Kumasi Metro	-1.597187161	6.682059765	0	0	387	411.0068182	440
10110	Accra Metropolitan	-0.197115257	5.607395649	0	0	343	408.0785047	535
40103	Shama/Ahanta/East (Sekondi/Takoradi)	-1.623654723	5.081101418	0	0	377	398.8220339	236
21103	Kwaebibirem (Kade)	-0.799037278	6.133318901	0	0	388	411.6666667	225
50102	Kumasi Metro	-1.597187161	6.682059765	0	0	374	403.3277311	357
10102	Accra Metropolitan	-0.197115257	5.607395649	0	0	343	394.1491935	248
30301	Mfantsiman (Saltpond)	-1.006453395	5.201528072	0	0	315	382.5379877	487
50108	Kumasi Metro	-1.597187161	6.682059765	0	0	374	401.9116667	600
60106	Sunyani	-2.327423334	7.344677925	0	0	362	387.2989691	194
20102	New Juaben (Koforidua)	-0.297512323	6.112612724	0	0	374	397.1225	400
20402	Akwapim North (Akropong)	-0.166071147	5.976426125	0	0	343	382.1117318	358
50107	Kumasi Metro	-1.597187161	6.682059765	0	0	350	383.3051471	544
30101	Cape Coast Municipal	-1.306593895	5.153656006	0	0	356	396.2475	400
30102	Cape Coast Municipal	-1.306593895	5.153656006	0	0	361	391.6275	400

Exercise 3

studentid	dist1	dist2	dist3	dist4	dist5	dist6
1	8.813579	8.813579	18.89505	18.89505	17.17965	63.91775
2	0	21.67279	0	0	21.67279	21.67279
3	0	0	9.439135	0	12.51935	0
4	0	25.65106	70.46157	25.65106	70.46157	25.70067
5	102.388	42.2294	26.91043	26.91043	42.2294	26.91043
6	121.5651	0	8.813421	14.5354	22.38081	14.43245
7	27.48362	0	27.48362	0	115.9497	78.9166
8	34.22092	0	0	34.22092	83.02287	34.22092
9	0	0	19.05111	19.05111	16.25134	11.71034
10	138.7428	229.3084	22.3114	0	22.3114	22.3114
11	23.06082	28.74763	0	28.74763	28.74763	22.31581
12	110.4471	0	109.5835	0	50.5586	29.20631
13	17.70057	17.70057	0	0	17.70057	0
14	24.32577	24.32577	24.32577	24.32577	82.31303	91.112
15	351.2641	370.0089	264.3003	373.4175	0	0
16	20.41585	20.41585	20.41585	0	0	91.1641
17	138.7428	138.7428	138.7428	138.7428	0	0
18	63.19403	87.70457	0	14.27161	49.34462	42.59942
19	125.0673	139.0192	139.0192	125.0673	37.83134	37.83134
20	96.91296	0	71.9103	0	113.9938	149.8575

Exercise 4

meancutoff1	270.5631
sdcutoff1	53.66962
mmeanscore1	315.2255
sdmeanscore1	47.27682
meandist1	28.24994
sddist1	44.23394
meancutoff2	258.6857
sdcutoff2	47.66861
mmeanscore2	303.1561
sdmeanscore2	42.24879
meandist2	28.17719
sddist2	42.57611
meancutoff3	250.8506
sdcutoff3	44.33484
mmeanscore3	295.4499
sdmeanscore3	39.4576
meandist3	27.31729
sddist3	41.10339
meancutoff4	242.6378
sdcutoff4	41.68894
mmeanscore4	287.4614
sdmeanscore4	37.60339
meandist4	24.3616
sddist4	39.02033
meancutoff5	229.6916
sdcutoff5	28.06715
mmeanscore5	275.9961
sdmeanscore5	24.11259
meandist5	28.67274
sddist5	28.30688
meancutoff6	226.7896
sdcutoff6	27.03497
mmeanscore6	272.7503
sdmeanscore6	23.68513
meandist6	29.48252
sddist6	28.4079

By quartile:

quartile	[158,252]	(252,283]	(283,324]	(324,469]	NA
meancutoff1	258.3289	274.3916	296.0065	337.7568	251.9723
sdcutoff1	43.51786	46.35185	47.95778	45.30473	45.359
mmeanscore1	304.9324	320.0907	339.8682	377.5744	297.2074
sdmeanscore1	37.57388	38.46928	38.54086	35.61609	40.31122
meandist1	28.27913	31.69949	34.86944	41.98427	22.97254
sddist1	44.89946	48.20433	48.9477	47.69021	40.14333
meancutoff2	247.1181	260.4349	278.3113	314.1333	244.2788
sdcutoff2	39.22457	42.03011	43.97465	42.571	41.54423
mmeanscore2	292.8534	305.7469	322.4275	355.5923	289.0162
sdmeanscore2	34.4185	35.39423	35.92649	33.98561	37.07474
meandist2	28.69947	31.22761	33.4669	38.49917	23.92386
sddist2	43.71274	46.57879	46.836	45.44718	38.98908
meancutoff3	239.8705	250.675	265.7821	297.849	239.6426
sdcutoff3	37.41749	40.0721	42.12543	42.04982	39.62
mmeanscore3	285.4459	296.0905	310.3393	340.0854	284.3679
sdmeanscore3	33.37654	34.18493	34.66182	33.86576	35.76357
meandist3	27.67535	29.8182	31.35241	33.97069	24.31165
sddist3	42.1575	45.01575	44.98074	42.73751	38.28563
meancutoff4	231.8167	240.6512	252.901	282.0855	234.5115
sdcutoff4	35.49314	38.04009	40.1984	42.62236	38.21389
mmeanscore4	277.4663	286.5017	298.4099	325.1927	279.1417
sdmeanscore4	32.6414	33.1883	33.77839	34.80243	35.14785
meandist4	25.34848	26.12894	26.97811	27.51189	22.46467
sddist4	40.95437	42.53877	42.57398	40.39295	36.41883
meancutoff5	226.9899	231.4884	236.3363	241.1965	225.9745
sdcutoff5	27.02062	28.2765	29.20691	29.33112	26.7209
mmeanscore5	272.9889	278.5754	284.3275	290.5377	271.1505
sdmeanscore5	23.44678	23.03363	22.11651	20.27857	23.85587
meandist5	29.3259	29.94637	30.78063	31.05815	27.26264
sddist5	28.7811	28.51642	28.1144	28.04709	28.16601
meancutoff6	223.8836	228.2086	232.2142	236.5018	223.8579
sdcutoff6	25.99348	27.28575	28.37175	28.7397	25.80794
mmeanscore6	269.3515	274.8425	279.9092	285.6582	268.7127
sdmeanscore6	23.2037	22.8918	22.34894	20.63031	23.45191
meandist6	29.8205	30.73509	31.30439	31.59482	28.27123
sddist6	28.64225	28.56983	28.20151	28.02791	28.38237

Exercise 5: no real output (unless you want 10,000 rows of random variables in here)

Exercise 6:

Correlation: 0.2023137

This is different than 1.2 because 1.2 is the actual coefficient. This correlation is a measure of the variation in one variable that can be predicted by variation in the other variable, and is thus bounded between 0 and 1.

OLS calculation:

Intercept:	2.4857692
X1:	1.1917050
X2:	-0.8968853
X3:	0.1248442

Standard errors:

Intercept:	0.04094887
X1:	0.017495125
X2:	0.0029267042
X3:	0.0219788771

Exercise 7:

Probit model:

Intercept:	3.04359920
X1:	1.09843972
X2:	-0.87139773
X3:	0.03705668

Logit model:

Intercept:	5.45333051
X1:	1.95564661
X2:	-1.55816791
X3:	0.07183958

Linear probability:

Intercept:	0.909043942
X1:	0.140277606
X2:	-0.104445753
X3:	0.003733884

Linear probability standard errors:

Intercept:	0.01343125
X1:	0.0057384106
X2:	0.0009599606
X3:	0.0072090838

Exercise 8:

Probit marginal effects:

Intercept:	0.377355436
X1:	0.136188168
X2:	-0.108038755
X3:	0.004594409

Logit marginal effects:

Intercept:	0.377295229
X1:	0.135303762
X2:	-0.107803721
X3:	0.004970307

Probit standard errors:

Intercept:	0.1128261
X1:	0.048204190
X2:	0.0080639267
X3:	0.0605582395

Logit standard errors:

Intercept:	0.2094584
X1:	0.089489680
X2:	0.014970446
X3:	0.112424615