NAEP 2012 LONG TERM TREND SAMPLE NONRESPONSE BIAS ANALYSIS REPORT

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1. NONRESPONSE BIAS ANALYSIS IN THE 2012 NAEP LONG TERM TREND SAMPLE

NCES statistical standards call for a nonresponse bias analysis to be conducted for a sample with a response rate below 85 percent. Weighted school response rates for 2012 NAEP indicate a need for school nonresponse bias analyses for the Long Term Trend private school samples for ages 9, 13, and 17. Based on the weighted student response rates, a student nonresponse bias analysis is not required at any age.

Response rates for schools and students are shown in tables 1 and 2, respectively.

Table 1. Weighted school response rates, before substitution

Age	Public	Private
9	89.0	61.2
13	89.9	68.6
_ 17	85.6	62.5

Table 2. Weighted student response rates

Age	Subject	Public	Private
9	Mathematics	95.0	93.0
	Reading	95.0	93.8
13	Mathematics	92.9	95.1
	Reading	93.1	93.9
17	Mathematics	88.2	85.9
	Reading	88.3	87.6

The analyses conducted in this report consider only certain characteristics of schools and students. They do not directly consider the effects of the nonresponse on student achievement; the primary focus of NAEP. Thus, these analyses cannot be conclusive of either the existence or absence of nonresponse bias for student achievement (see Peytcheva and Groves, 2009).

2. SCHOOL NONRESPONSE BIAS ANALYSIS

The school analysis, required for private school samples in ages 9, 13, and 17, was conducted in three parts.

- 1. The distribution of the responding original school sample was compared with that of the entire eligible original school sample. Schools were weighted by their school base weights and their enrollment, referred to as a size-adjusted weight. The original sample is the sample before substitution.
- 2. The distribution of the responding sample, including participating substitutes was compared to the full sample (but in this case, substitutes were included in place of those nonrespondents that they replaced). Again, the size-adjusted school base weights were used for both the full sample and the respondents.
- 3. The same sets of schools were compared as in the second analysis, but this time when analyzing the responding schools alone, school nonresponse adjustments were applied to the size adjusted weights.

The first part of the analysis indicates the potential for nonresponse bias that was introduced through school nonresponse. The second part of the analysis suggests the remaining potential for nonresponse bias after the mitigating effects of substitution have been accounted for. The third part indicates the potential for bias after accounting for the mitigating effects of both substitution and nonresponse weight adjustments. Both the second and third parts, however, may provide an overly optimistic scenario, since even though substitution and nonresponse adjustments may correct somewhat for deficiencies in the few characteristics examined here, there is no guarantee that they are equally as effective for other characteristics, and in particular for student achievement.

In each analysis, chi-square tests of association were conducted between school response status and each of the following four categorical variables:

- Census region;
- Reporting subgroup for private schools (Catholic/ Non-Catholic);
- Urban-centric locale; and
- Estimated age enrollment divided into three equally sized categories.

The chi-square tests were carried out using procedures that appropriately account for the complex sample design used in NAEP, and the weighting procedures. The Rao-Scott chi-square test (Rao and Scott, 1984) was computed using WesVar (Westat 2002), where this test is referred to as 'RS3'.

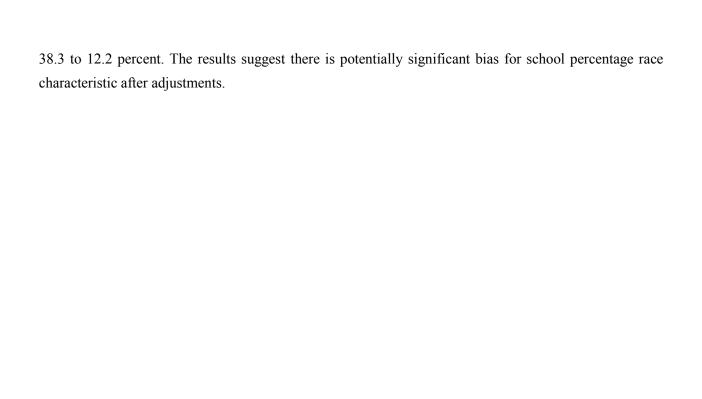
In addition, mean values of race/ethnicity percentages and enrollment for responding and nonresponding schools were compared. Two measures of the mean size of enrollment in the respective ages were considered, one using the size adjusted school weight (mean size of school attended by an average student), and the other using the school weight without the size adjustment (mean estimated age enrollment). Differences between the means for the respondents and full sample were tested using t-tests. These tests also took account of the complex sample design, as well as the fact that the respondents are a subset of the full sample (thus in that sense the first two sets of comparisons, using only school base weights, are equivalent to testing whether the mean for respondents is significantly different from the mean for nonrespondents).

The results of these analyses for private schools are presented in the tables in appendix A, and summarized in table 3.

Table 3. Characteristics with p-values less than 0.05, private schools

Age	Analysis	Characteristics with p-values less than 0.05
9	Original Sample	Private school subgroup, Race/ethnicity
	Sample with Substitutes	Estimated age enrollment, Race/ethnicity
	Nonresponse Adjusted	Race/ethnicity
13	Original Sample	Private school subgroup, Race/ethnicity
	Sample with Substitutes	Private school subgroup
	Nonresponse Adjusted	None
17	Original Sample	Private school subgroup, Size of school attended by average student, Race/ethnicity
	Sample with Substitutes	Private school subgroup, Race/ethnicity
	Nonresponse Adjusted	None

Overall, nonresponse adjustments decreased the number of variables with significant differences. For ages 13 and 17, all results showed no significant bias for any characteristic after substitution and nonresponse adjustments. For age 9, Race/ethnicity remains significant, specifically for the percentages of White, non-Hispanic and Black non-Hispanic. The largest absolute bias among all race percentage variables before substitution and nonresponse adjustments was 4.92 (significant) for percentage White, non-Hispanic, and this decreased slightly to 4.31 (significant), and the relative bias decreased from 6.5 to 5.7 percent. The absolute bias for percentage Black non-Hispanic, increased from 0.46 (non-significant) to 2.40 (significant), and the relative bias from 3.7 to 35.1 percent. The results for Percentage Hispanic heritage changed from significant to non-significant after nonresponse adjustments, the absolute bias decreasing from 4.03 (significant) to 1.28 (non-significant) and the relative bias from



REFERENCES

- Peytcheva, E., and Groves, R.M. (2009). Using Variation in Response Rates of Demographic Subgroups as Evidence of Nonresponse Bias in Survey Estimates. *Journal of Official Statistics*, **25**, 193-201.
- Rao, J.N.K., and Scott, A.J. (1984). On Chi-Squared Tests for Multiway Contingency Tables with Cell Proportions Estimated from Survey Data. *Annals of Statitistics*, **12**, 46-60.

Westat (2002). WesVar 4.2 User's Guide. Rockville, MD: Westat, Inc.

Appendix A School Tables

Table A-1. 2012 NAEP Age 9 original sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 120)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region					0.034
Northeast	26.48	23.04	-3.44	-0.130	
Midwest	22.23	27.72	5.49	0.247	
South	34.08	27.20	-6.88	-0.202	
West	17.20	22.04	4.84	0.281	
Private School Reporting					
Subgroup					0.000
Roman Catholic	40.89	63.55	22.66	0.554	
Non-Catholic Private	59.11	36.45	-22.66	-0.383	
Urban-Centric Locale					0.105
City	39.92	44.65	4.73	0.118	
Suburban	35.56	38.15	2.59	0.073	
Town	8.56	9.80	1.24	0.145	
Rural	15.96	7.40	-8.56	-0.536	
Size					0.354
Large (≥25)	60.34	55.07	-5.27	-0.087	
Medium (11-24)	26.20	30.47	4.27	0.163	
Small (≤10)	13.46	14.45	0.99	0.074	

Table A-2. 2012 NAEP Age 9 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	36.55	31.11	-5.44	-0.149	0.170
Estimated Grade Enrollment	18.21	18.98	0.77	0.042	0.668
Race/Ethnicity					
Percentage White, not Hispanic	75.99	71.06	-4.92	-0.065	0.016
Percentage Black, not Hispanic	6.82	7.28	0.46	0.067	0.571
Percentage Hispanic Heritage	10.51	14.54	4.03	0.383	0.009
Percentage Asian	3.54	3.71	0.17	0.049	0.661
Percentage Hawaiian/Pacific Islander	0.29	0.44	0.15	0.523	0.013
Percentage American Indian/Alaskan					
Native	0.28	0.21	-0.07	-0.255	0.409

Table A-3. 2012 NAEP Age 9 sample with substitutes - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 120)

	Full sample	Respondent			
	weighted	weighted		Relative	Chi-square
	percentage	percentage	Bias	bias	p-value
Census Region					0.251
Northeast	26.48	22.44	-4.04	-0.153	
Midwest	22.23	24.01	1.78	0.080	
South	34.08	35.31	1.23	0.036	
West	17.20	18.23	1.03	0.060	
Private School Reporting					
Subgroup					0.000
Roman Catholic	40.89	51.02	10.13	0.248	
Non-Catholic Private	59.11	48.98	-10.13	-0.171	
Urban-Centric Locale					0.057
City	39.92	40.11	0.19	0.005	
Suburban	35.56	38.78	3.22	0.091	
Town	8.56	10.26	1.70	0.199	
Rural	15.96	10.85	-5.11	-0.320	
Size					0.302
Large (≥25)	60.34	55.02	-5.32	-0.088	
Medium (11-24)	26.20	30.47	4.27	0.163	
Small (≤10)	13.46	14.52	1.06	0.079	

Table A-4. 2012 NAEP Age 9 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	36.55	32.25	-4.30	-0.118	0.150
Estimated Grade Enrollment	18.21	19.83	1.62	0.089	0.282
Race/Ethnicity					
Percentage White, not Hispanic	75.99	71.69	-4.30	-0.057	0.003
Percentage Black, not Hispanic	6.82	7.93	1.11	0.162	0.164
Percentage Hispanic Heritage	10.51	12.98	2.47	0.235	0.003
Percentage Asian	3.54	3.80	0.26	0.074	0.474
Percentage Hawaiian/Pacific Islander	0.29	0.35	0.06	0.203	0.057
Percentage American Indian/Alaskan					
Native	0.28	0.41	0.12	0.425	0.294

Table A-5. 2012 NAEP Age 9 nonresponse-adjusted sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 120)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region					0.968
Northeast	26.48	26.48	0.00	0.000	
Midwest	22.23	22.23	0.00	0.000	
South	34.08	34.08	0.00	0.000	
West	17.20	17.20	0.00	0.000	
Private School Reporting					
Subgroup					0.938
Roman Catholic	40.89	40.89	0.00	0.000	
Non-Catholic Private	59.11	59.11	0.00	0.000	
Urban-Centric Locale					0.186
City	39.92	38.01	-1.91	-0.048	
Suburban	35.56	38.86	3.30	0.093	
Town	8.56	10.17	1.61	0.188	
Rural	15.96	12.97	-2.99	-0.187	
Size					0.088
Large (≥25)	60.34	51.22	-9.12	-0.151	
Medium (11-24)	26.20	31.69	5.49	0.210	
Small (≤10)	13.46	17.08	3.62	0.269	

Table A-6. 2012 NAEP Age 9 nonresponse-adjusted sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	36.55	31.11	-5.44	-0.149	0.068
Estimated Grade Enrollment	18.21	18.46	0.25	0.013	0.854
Race/Ethnicity					
Percentage White, not Hispanic	75.99	71.68	-4.31	-0.057	0.001
Percentage Black, not Hispanic	6.82	9.22	2.40	0.351	0.027
Percentage Hispanic Heritage	10.51	11.80	1.28	0.122	0.070
Percentage Asian	3.54	3.74	0.20	0.056	0.625
Percentage Hawaiian/Pacific Islander	0.29	0.33	0.05	0.163	0.195
Percentage American Indian/Alaskan					
Native	0.28	0.42	0.13	0.466	0.261

Table A-7. 2012 NAEP Age 13 original sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 109)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region					0.674
Northeast	21.56	19.24	-2.32	-0.108	
Midwest	22.77	23.87	1.10	0.048	
South	35.04	32.53	-2.51	-0.072	
West	20.62	24.35	3.73	0.181	
Private School Reporting					
Subgroup					0.000
Roman Catholic	45.89	61.27	15.38	0.335	
Non-Catholic Private	54.11	38.73	-15.38	-0.284	
Urban-Centric Locale					0.133
City	41.07	48.69	7.62	0.186	
Suburban	37.81	39.12	1.31	0.035	
Town	7.71	4.25	-3.46	-0.449	
Rural	13.42	7.95	-5.47	-0.408	
Size					0.944
Large (≥29)	58.20	59.22	1.02	0.018	
Medium (16-28)	25.07	24.43	-0.64	-0.026	
Small (≤ 15)	16.73	16.35	-0.38	-0.023	

Table A-8. 2012 NAEP Age 13 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	42.17	40.40	-1.76	-0.042	0.637
Estimated Grade Enrollment	20.67	22.58	1.91	0.092	0.461
Race/Ethnicity					
Percentage White, not Hispanic	73.38	71.30	-2.08	-0.028	0.417
Percentage Black, not Hispanic	5.48	4.93	-0.55	-0.100	0.498
Percentage Hispanic Heritage	11.11	13.99	2.89	0.260	0.044
Percentage Asian	6.35	6.11	-0.24	-0.038	0.825
Percentage Hawaiian/Pacific Islander	1.03	0.44	-0.59	-0.575	0.372
Percentage American Indian/Alaskan					
Native	0.12	0.05	-0.07	-0.585	0.163

Table A-9. 2012 NAEP Age 13 sample with substitutes - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 109)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region	j i i i i i i i	F			0.649
Northeast	21.56	19.90	-1.66	-0.077	
Midwest	22.77	23.38	0.61	0.027	
South	35.04	33.26	-1.78	-0.051	
West	20.62	23.46	2.84	0.138	
Private School Reporting					
Subgroup					0.019
Roman Catholic	45.89	52.75	6.86	0.149	
Non-Catholic Private	54.11	47.25	-6.86	-0.127	
Urban-Centric Locale					0.151
City	41.07	46.13	5.06	0.123	
Suburban	37.81	38.63	0.82	0.022	
Town	7.71	3.66	-4.05	-0.525	
Rural	13.42	11.59	-1.83	-0.136	
Size					0.467
Large (≥29)	58.20	54.90	-3.30	-0.057	
Medium (16-28)	25.07	25.14	0.07	0.003	
Small (≤15)	16.73	19.97	3.24	0.194	

Table A-10. 2012 NAEP Age 13 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample R	Respondent		Relative	T-test
	mean	mean	Bias	bias	p-value
Size of School Attended by Average					
Student	42.17	37.93	-4.24	-0.100	0.245
Estimated Grade Enrollment	20.67	22.03	1.36	0.066	0.584
Race/Ethnicity					
Percentage White, not Hispanic	73.38	71.28	-2.09	-0.029	0.305
Percentage Black, not Hispanic	5.48	5.72	0.24	0.044	0.829
Percentage Hispanic Heritage	11.11	12.46	1.35	0.122	0.185
Percentage Asian	6.35	6.98	0.63	0.100	0.617
Percentage Hawaiian/Pacific Islander	1.03	0.39	-0.64	-0.619	0.342
Percentage American Indian/Alaskan					
Native	0.12	0.13	0.01	0.084	0.891

Table A-11. 2012 NAEP Age 13 nonresponse-adjusted sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 109)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region	1 5	1 2			0.994
Northeast	21.56	21.56	0.00	0.000	
Midwest	22.77	22.77	0.00	0.000	
South	35.04	35.04	0.00	0.000	
West	20.62	20.62	0.00	0.000	
Private School Reporting					
Subgroup					0.998
Roman Catholic	45.89	45.89	0.00	0.000	
Non-Catholic Private	54.11	54.11	0.00	0.000	
Urban-Centric Locale					0.222
City	41.07	43.41	2.34	0.057	
Suburban	37.81	39.15	1.34	0.035	
Town	7.71	4.05	-3.66	-0.475	
Rural	13.42	13.39	-0.03	-0.002	
Size					0.178
Large (≥29)	58.20	52.67	-5.53	-0.095	
Medium (16-28)	25.07	24.68	-0.39	-0.016	
Small (≤15)	16.73	22.64	5.91	0.353	

Table A-12. 2012 NAEP Age 13 nonresponse-adjusted sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	42.17	37.00	-5.17	-0.123	0.214
Estimated Grade Enrollment	20.67	20.96	0.29	0.014	0.908
Race/Ethnicity					
Percentage White, not Hispanic	73.38	72.27	-1.11	-0.015	0.587
Percentage Black, not Hispanic	5.48	6.07	0.59	0.108	0.626
Percentage Hispanic Heritage	11.11	11.39	0.29	0.026	0.701
Percentage Asian	6.35	6.76	0.41	0.065	0.769
Percentage Hawaiian/Pacific Islander	1.03	0.33	-0.69	-0.675	0.299
Percentage American Indian/Alaskan					
Native	0.12	0.15	0.03	0.210	0.761

Table A-13. 2012 NAEP Age 17 original sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 65)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Census Region	1 0				0.846
Northeast	31.61	28.74	-2.87	-0.091	
Midwest	20.89	23.78	2.89	0.138	
South	31.32	29.49	-1.83	-0.058	
West	16.18	17.99	1.81	0.112	
Private School Reporting					
Subgroup					0.000
Roman Catholic	46.38	65.43	19.05	0.411	
Non-Catholic Private	53.62	34.57	-19.05	-0.355	
Urban-Centric Locale					0.830
City	41.74	44.38	2.64	0.063	
Suburban	34.17	32.05	-2.12	-0.062	
Town	7.76	5.73	-2.03	-0.262	
Rural	16.33	17.84	1.51	0.092	
Size					0.410
Large (≥58)	64.06	60.65	-3.41	-0.053	
Medium (27-57)	24.98	30.32	5.34	0.214	
Small (≤26)	10.96	9.03	-1.93	-0.176	

Table A-14. 2012 NAEP Age 17 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	118.99	139.86	20.88	0.175	0.038
Estimated Grade Enrollment	41.95	43.38	1.42	0.034	0.832
Race/Ethnicity					
Percentage White, not Hispanic	76.68	74.35	-2.33	-0.030	0.239
Percentage Black, not Hispanic	6.77	7.10	0.33	0.049	0.692
Percentage Hispanic Heritage	6.68	7.84	1.17	0.175	0.105
Percentage Asian	7.11	7.91	0.80	0.112	0.482
Percentage Hawaiian/Pacific Islander	0.19	0.29	0.11	0.567	0.022
Percentage American Indian/Alaskan					
Native	0.30	0.26	-0.04	-0.122	0.616

Table A-15. 2012 NAEP Age 17 sample with substitutes - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 65)

	Full sample	Respondent			
	weighted	weighted		Relative	Chi-square
	percentage	percentage	Bias	bias	p-value
Census Region					0.964
Northeast	31.61	30.01	-1.60	-0.051	
Midwest	20.89	21.40	0.51	0.024	
South	31.32	31.87	0.55	0.018	
West	16.18	16.73	0.55	0.034	
Private School Reporting					
Subgroup					0.002
Roman Catholic	46.38	57.32	10.94	0.236	
Non-Catholic Private	53.62	42.68	-10.94	-0.204	
Urban-Centric Locale					0.238
City	41.74	47.08	5.34	0.128	
Suburban	34.17	30.30	-3.87	-0.113	
Town	7.76	4.61	-3.15	-0.406	
Rural	16.33	18.01	1.68	0.103	
Size					0.982
Large (≥58)	64.06	64.66	0.60	0.009	
Medium (27-57)	24.98	24.43	-0.55	-0.022	
Small (≤26)	10.96	10.91	-0.05	-0.005	

Table A-16. 2012 NAEP Age 17 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	118.99	130.27	11.28	0.095	0.060
Estimated Grade Enrollment	41.95	44.06	2.11	0.050	0.659
Race/Ethnicity					
Percentage White, not Hispanic	76.68	73.59	-3.09	-0.040	0.196
Percentage Black, not Hispanic	6.77	8.90	2.13	0.315	0.316
Percentage Hispanic Heritage	6.68	7.57	0.89	0.134	0.175
Percentage Asian	7.11	7.35	0.23	0.033	0.807
Percentage Hawaiian/Pacific Islander	0.19	0.24	0.05	0.262	0.037
Percentage American Indian/Alaskan					
Native	0.30	0.29	0.00	-0.008	0.978

Table A-17. 2012 NAEP Age 17 nonresponse-adjusted sample - Weighted percentages of full sample and responding schools by various subgroups - All Private Schools (sample size = 65)

	Full sample	Respondent			
	weighted	weighted		Relative	Chi-square
	percentage	percentage	Bias	bias	p-value
Census Region					0.721
Northeast	31.61	30.41	-1.20	-0.038	
Midwest	20.89	22.09	1.20	0.057	
South	31.32	31.32	0.00	0.000	
West	16.18	16.18	0.00	0.000	
Private School Reporting					
Subgroup					0.946
Roman Catholic	46.38	46.38	0.00	0.000	
Non-Catholic Private	53.62	53.62	0.00	0.000	
Urban-Centric Locale					0.077
City	41.74	45.84	4.10	0.098	
Suburban	34.17	28.26	-5.91	-0.173	
Town	7.76	3.84	-3.92	-0.505	
Rural	16.33	22.06	5.73	0.351	
Size					0.736
Large (≥58)	64.06	60.46	-3.60	-0.056	
Medium (27-57)	24.98	27.31	2.33	0.093	
Small (≤26)	10.96	12.23	1.27	0.116	

Table A-18. 2012 NAEP Age 17 nonresponse-adjusted sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Size of School Attended by Average					
Student	118.99	119.89	0.90	0.008	0.867
Estimated Grade Enrollment	41.95	40.38	-1.57	-0.037	0.728
Race/Ethnicity					
Percentage White, not Hispanic	76.68	73.48	-3.21	-0.042	0.212
Percentage Black, not Hispanic	6.77	9.46	2.69	0.398	0.227
Percentage Hispanic Heritage	6.68	7.00	0.33	0.049	0.591
Percentage Asian	7.11	7.55	0.44	0.061	0.733
Percentage Hawaiian/Pacific Islander	0.19	0.20	0.02	0.078	0.207
Percentage American Indian/Alaskan					
Native	0.30	0.30	0.01	0.022	0.941