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ABSTRACT

An attempt was made to relate college or university student performance with high school effectiveness. School effectiveness was measured in terms of the college performance of graduates, after controlling for academic aptitude. The data base consisted of freshmen at selected institutions of a large state university system (N=150,000). Steps in the analysis included: (1) developing multiple regression equations for each institution by gender and minority status; (2) predicting college grade point average (GPA) through these equations, using as independent variables the proportions of free and reduced price lunches, the Scholastic Aptitude Test (SAT) verbal and mathematics scores, and college credit hours carried and earned; (3) using the appropriate regression equation for the institution to calculate the residual (the difference between actual and predicted GPA); and (4) determining the average residual for graduates of each high school to rank them on the basis of mean residuals. Results showed a modest pattern of suburban and urban high schools tending toward lower college performance than expected; on the other hand, there were high schools located in rural areas that had positive mean residual GPAs. This suggests that some rural and small-town schools do produce students who perform at a higher level than would be predicted on the basis of their SAT scores or the socio-economic status of their high schools. This method may have promise for extending assessment possibilities; methodological implications are discussed. One flowchart is provided, and an appendix lists the multiple regressions by institution.

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USING COLLEGE GRADE POINT AVERAGE
IN ASSESSMENT RESEARCH

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Using College Grade Point Average in Assessment Research

As assessment programs have been implemented, the issue of how to integrate college level measures of effectiveness with external criteria remains. Exploratory research is needed in this area of the assessment field.

The purpose of this paper is to relate college or university level student performance with high school effectiveness. A school's effectiveness is measured in terms of the college performance of its graduates, after controlling for students' academic aptitude. The method of this study is to identify unusually effective schools by examining the residuals of a multiple regression analysis. It is hypothesized that certain schools would be identified as being unusually effective, in that graduates of these schools have higher college grade point averages than would be expected given their academic aptitude as measured by the SAT.

Relevant Previous Research

In the 1960s and 1970s educational researchers made a substantial attempt to investigate educational effectiveness. Several large-scale statistical studies failed to find consistent relationships between school differences and students' performances on achievement tests (Averch et al., 1972; Coleman, 1966; Jencks et al., 1972).

In spite of the inconclusive or negative results of many previous school effect studies, it is possible that a small number of unusually effective schools do exist. The problem is one of

identifying those schools which seem to do an exceptional job in terms of student academic performance. Schools which may be exceptional in terms of their incremental effectiveness can then be identified by finding the outliers in the residuals of the regression analysis. This method has been successfully used by Klitgaard and Hall (1977), Austin (1979), Clauset and Gaynor (1981) and Edmonds (1979), and is recommended as potentially useful by Anderson (1982), Levine (1973) and Klitgaard (1978).

Anderson (1982) provides an in-depth review of school climate and school effects research. In a discussion of input variables, the necessity of controlling for variations in student inputs is stressed. The increment in achievement that the school provides is seen as the appropriate measure of a school's quality. The author considers the inconclusive findings of many school effect studies to be a result of design and analysis problems, including inadequacy of statistics, misinterpretation of statistical results, misuse of statistical procedures, and inadequacy of cross-sectional designs. The author recommends several design alternatives, including the use of outliers as described by Klitgaard and Hall (1977) and others.

Levine (1973) provides an extensive review and criticism of attempts by Coleman (1966), Jencks et al. (1972) and others to investigate educational effectiveness. Problems of data that characterize many input-output studies include aggregation of data at the school or district level, the inadequacy of standardized achievement tests as a summary measure of school effectiveness, and

the diminished chances of discovering significant input-output relationships by confining the analysis to average school effects. Several recommendations for future research are made, including analysis of the residuals from multiple regressions in order to identify unusual schools.

In a large-scale study by Walberg and Fowler (1987), district socioeconomic status, per student expenditures on education, and size of enrollment by district were used to predict average standardized test scores at three grade levels. The authors also controlled only for socioeconomic status and examined the residuals for districts high or low on achievement measures. It was found that the districts with the highest residuals (highest achievement after adjusting for socioeconomic status) expended the least amount of money for education. When socioeconomic status and per-student expenditures were taken into account, smaller districts tended to have higher achievement than larger districts.

The idea for this paper came from a study by Klitgaard and Hall (1977) titled "A Statistical Search for Unusually Effective Schools," which was included in the book Statistics and Public Policy. The authors began by describing studies which have failed to find consistent relationships between school variables and student achievement, and follow with possible explanations for this failure. They then develop the idea of looking at the outliers in the residuals of multiple regression analysis.

Six sets of data from Michigan and New York City schools were examined. Socioeconomic and other nonschool background factors

were included in the regression equation, while school variables were explicitly excluded. It was assumed that the variation remaining after such a fit represented school effectiveness along with random variation (which was expected to be small). It was also decided to avoid the risks of overcontrolling for too many background variables in order to give exceptional schools every opportunity to show up.

Histograms of the residuals on socioeconomic factors from a regression of school achievement scores were visually inspected for unusual right tails. Next the series of distributions (over many years) of residuals were looked at to see if the same schools were consistently above the mean over time. More schools with residuals greater than one standard deviation above the mean were found than would be expected on the basis of chance alone.

The next step was to determine if the top schools (those with high positive residuals) were different from the other schools in terms of any nonschool factors which had been excluded from the regression equation. It was decided at this point to run new regressions to include controls for racial composition and community type. The addition of these variables in the regression reduced the overall variability and allowed unusually effective schools to stand out, as evidenced by the unusual right tails in histograms of the residuals. It was found that the top 15 schools were predominantly below the state averages on both socioeconomic status and minority enrollment and tended to be located in rural areas. This was true in spite of controlling for these variables

in the regressions. Possible explanations, including sample sizes and heteroskedasticity, were tested and discussed.

The final task was to compare the top and average schools in terms of means and standard deviations on a number of school, background, and other variables. Important differences appeared on several school-related variables, while none of the background variables showed significant differences.

In summary, the authors used multiple regression techniques to predict standardized achievement test performance while controlling for various background influences. Residuals from the regression lines were assumed to be a function of school factors and were conceptualized as a measure of school effectiveness. Schools with high positive residuals were compared with average schools and found to differ on several important school variables. The authors conclude that the methodology developed in their report should be useful in future attempts to investigate school effectiveness.

Research Strategy.

The data base for this research is college and university students (N=150,000) who entered as first-time freshmen in selected institutions of a large state university system. Steps in the analysis are as follows: 1) Develop multiple regression equations for each system institution by gender and minority status. The level of analysis is the individual student. 2) The dependent variable in the regression equations is the college GPA. The independent variables are SAT verbal and math scores, and

credit hours accumulated as a control for college experience. A control measure of the socioeconomic status of the high school, the proportion of students who receive free and reduced price lunches, is also included in the multiple regression equations. 3) Using the appropriate regression equation for the institution attended, the residual (the difference between actual and predicted GPA) is calculated for each student. 4) The average residual for graduates of each high school is determined. High schools are ranked on the basis of their mean residuals, and high and low residual schools examined more closely for similarities and differences within and between the groups. This model is shown schematically in Figure 1.

Findings.

For each system institution a series of multiple regression equations predicting GPA were developed by gender and minority status. These equations are shown in Appendix A. The independent variables used to predict GPA include the proportions of free and reduced price lunches; SAT verbal and mathematics scores; and credit hours carried or attempted and credit hours earned. As multiple regression diagnostics were performed on these prediction equations, it was noted that credit hours carried and earned show clear evidence of a quadratic relationship with GPA. Thus squared values of credit hours attempted and earned were also included in the prediction equations.

Institution Regression Equations.

A review of the equations in Appendix A. shows that the

multiple correlation coefficients squared (R^2) for the institution equations are generally in the range of from .40 to .60. This is indicative that these independent variables are working as suitable predictors. Also, the equations for any given institution can show a large amount of dissimilarity, underlining the importance of doing separate equations by gender and minority status.

The regression coefficients for the socioeconomic status indicator for the high schools vary considerably in both magnitude and in sign. No patterns seem present and very few of these coefficient are even twice their standard errors. Thus the predictions would be almost identical even if a correction for high school socioeconomic status were not included in the equations.

In contrast to the coefficients for free and reduced lunches, the coefficients for SAT scores are more consistent, with more than 90 percent having positive signs. In a few cases the coefficients have negative signs. Also, the coefficient of SAT verbal is almost always larger than that of the SAT mathematics score.

Patterns are evident in the control variables used to account for college experience. The coefficient for credit hours earned is normally positive, while for credit hours carried it is negative. Thus the more credit hours earned the higher the predicted GPA. The squared values show opposite patterns, with hours earned squared being negative and hours attempted squared being positive in most equations.

Average Residual GPAs by High School.

The residual college GPA was obtained for each individual

student by subtracting actual GPA from predicted GPA. These residuals were then averaged across the students' high schools to develop a mean residual GPA for each high school. As a further test of the residuals, the means for four years were generated to help determine the existence of any patterns. These residual GPA means may be found in Appendix B.

The residual GPA means show a pattern where high schools located in urban and suburban areas tend to have negative mean residual GPAs. On the other hand, there are high schools located in rural areas and small towns that have positive mean residual GPAs. This suggests that some small town and rural high schools do give their students something "extra," so that these students perform at a higher level in college than would be predicted by the socioeconomic status of their high school or their SAT scores.

Summary and Conclusions.

The objective of this paper has been to relate college or university level student performance with high school effectiveness. This effort is largely exploratory due to the precursory state of research in this area of the assessment field. It is hypothesized that college or university GPAs can be used to identify unusually effective high schools in that the graduates of some high schools have higher college GPAs than would be expected given their academic aptitude as measured by the SAT scores and the socioeconomic status of their high school.

Over 150,000 first-time freshmen in a large state college system comprise the data base. The analysis developed multiple

regression equations predicting college GPA for each institution by gender and minority status. The independent variables were SAT verbal and mathematics cores, college experience as measured by credit hours attempted and earned, and the proportions of free and reduced lunches at each high school. The predicted college GPA was subtracted from the students actual GPA to calculate a residual GPA. Then the average residual GPA for graduates of each high school was determined.

It was found that most of the prediction equations had multiple squared correlations in the range of .40 to .60. Socioeconomic status of the high school had little independent influence on the college GPA. The residual GPAs showed a modest pattern of urban and suburban high schools tending toward lower college performance than expected and for some rural and small town high school to produce students who performed higher than their SAT scores or socioeconomic would predict.

It was felt that this method has promise in extending assessment perspectives and possibilities beyond internal college or university ones. While caution must be exercised the uniting of levels of instruction does seem to be a forward step in assessment efforts.

Implications.

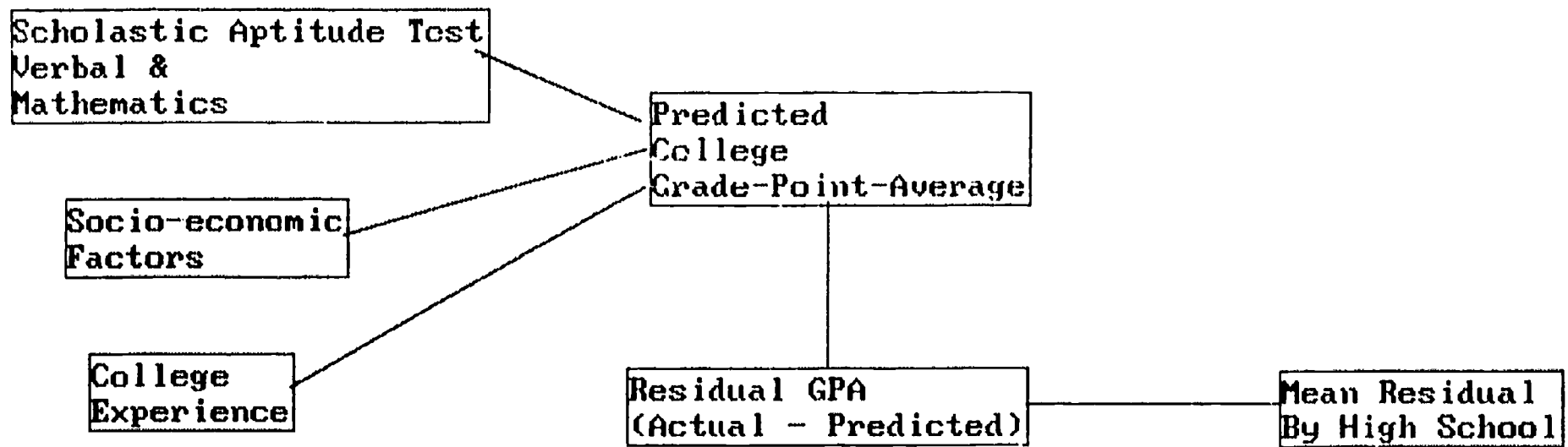
Substantive and methodological implications are supported by this paper. Finding a linkage between college level measures of effectiveness and high school level measures of effectiveness can be an important substantive contribution to the assessment field.

It is felt that this is of value to those concerned with methods of identifying effective schools, as well as to those interested in the relationship between high school attended and college GPA.

References

- Anderson, C.S. (1982). The search for school climate: A review of the research. Review of Educational Research, 52, 368-420.
- Austin, G.R. (1979). Exemplary schools and the search for effectiveness. Educational Leadership, 37, 10-12; 14.
- Averch, H.S., et al. (1972) How effective is schooling? A critical review and synthesis of research findings. Santa Monica, CA: The Rand Corporation.
- Clauset, K.H., Jr., & Gaynor, A.K. (1981). The dynamics of effective and ineffective schooling: A preliminary report of a system dynamics policy study. Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, April 1981.
- Coleman, J.S., et al. (1966). Equality of educational opportunity. Washington, DC: U.S. GPO.
- Edmonds, R.R. (1979). Effective Schools for the Urban Poor. Educational Leadership, 37, 15-18; 20-24.
- Jencks, C.S. et al. (1972). Inequality. New York: Basic Books.
- Klitgaard, R.E. (1978). Identifying exceptional performers. Policy Analysis, 4, 529-547.
- Klitgaard, R.E. & Hall, G.R. (1977). A statistical search for unusually effective schools. In W.W. Fairley & F. Mosteller (Eds.), Statistics and Public Policy, (pp.51-86). Reading: MA: Addison-Wesley.
- Levine, D.M. (1973). Educational policy after inequality. Teachers College Record, 75, 149-179.
- Walberg, H.J., & Fowler, W.J., Jr. (1987). Expenditure and size efficiencies of public school districts. Educational Researcher, 16, 5-13.

Figure 1. Assessment Model Using College GPA



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INSTITUTION	R	S	FREE LUNCH	SE	RED LUNCH	SE	SATV	SE	SATM	SE	HOURS CARR	HOURS EARN	HOURS CARR SQ	HOURS EARN SQ	CONST	R-SQ	N
GA INSTITUTE OF TECH	A	M	-0.59	1.37	2.60	5.55	0.0007	0.0008	0.0033	0.0011	0.2890	0.2492	0.001771	0.001349	1.19	0.60	30
GA INSTITUTE OF TECH	B	M	-0.43	0.98	-4.4	4.49	0.0038	0.0014	0.0034	0.0011	0.0764	-0.0011	-0.001752	0.001012	-2.78	0.85	32
GA INSTITUTE OF TECH	W	M	0.12	0.89	-0.03	4.14	0.0015	0.0005	0.0015	0.0005	0.1071	0.0213	-0.001758	0.000768	-2.88	0.50	174
GA INSTITUTE OF TECH	W	M	0.32	0.32	-2.1	1.41	0.0012	0.0003	0.0022	0.0003	-0.0494	0.0823	-0.000335	0.000321	0.14	0.81	537
SOUTHERN COL OF TECH	A	M	-1.79	0.59	9.47	2.94	0.0002	0.0008	0.0009	0.0007	-0.0352	0.0238	0.000069	-0.000031	2.42	0.88	23
SOUTHERN COL OF TECH	B	M	1.08	0.38	-5	2.05	0.0001	0.0006	0.0010	0.0005	-0.0681	0.0814	0.000168	-0.000228	1.38	0.78	81
SOUTHERN COL OF TECH	B	M	0.01	0.22	-3.5	0.81	0.0013	0.0004	0.0009	0.0004	-0.0482	0.0601	0.000072	-0.000113	0.88	0.82	197
SOUTHERN COL OF TECH	B	M	-0.54	0.58	3.68	2.07	0.0012	0.0003	0.0015	0.0003	-0.0851	0.0952	0.000151	-0.000185	0.95	0.60	449
SOUTHERN COL OF TECH	W	M	0.07	0.07	-3.42	0.45	0.0011	0.0001	0.0010	0.0001	-0.0659	0.0762	0.000108	-0.000140	1.06	0.57	3063
GA ST U	A	M	0.60	0.98	-3.4	4.45	0.0002	0.0006	0.0020	0.0006	-0.0758	0.0792	0.000115	-0.000127	1.60	0.51	81
GA ST U	B	M	0.04	1.92	-5.5	4.81	-0.0007	0.0006	0.0001	0.0008	-0.0691	0.0798	0.000015	-0.000046	2.75	0.67	48
GA ST U	B	M	-0.03	0.08	0.45	0.35	0.0011	0.0002	0.0008	0.0002	-0.0538	0.0631	0.000094	-0.000127	1.07	0.64	1120
GA ST U	B	M	0.08	0.09	-0.06	0.49	0.0007	0.0002	0.0008	0.0002	-0.0438	0.0652	0.000057	-0.000080	1.27	0.69	485
GA ST U	H	M	-1.3	0.44	6.15	1.71	-0.0000	0.0006	0.0010	0.0006	-0.0802	0.0878	0.000134	-0.000160	1.70	0.81	74
GA ST U	H	M	-1.8	0.83	1.11	2.83	0.0028	0.0008	0.0018	0.0008	-0.0600	0.0713	0.000144	-0.000191	0.38	0.79	49
GA ST U	W	M	0.19	0.13	-0.81	0.50	0.0015	0.0001	0.0012	0.0001	-0.0702	0.0775	0.000131	-0.000155	1.08	0.58	2800
GA ST U	W	M	0.04	0.12	0.03	0.47	0.0018	0.0001	0.0008	0.0001	-0.0688	0.0765	0.000113	-0.000147	0.90	0.60	2898
MEICAL COL OF GA	A	M	-1.3	1.14	5.14	3.41	0.0010	0.0016	0.0032	0.0013	-2.828	0.2978	0.001250	-0.001327	0.38	0.38	48
U OF GA	A	M	-0.29	0.73	-4.7	2.84	0.0011	0.0008	0.0015	0.0008	-0.0492	0.0621	0.000174	-0.000238	1.04	0.41	107
U OF GA	B	M	0.87	0.65	-1.7	2.50	0.0015	0.0008	0.0023	0.0007	-0.0396	0.0434	0.000122	-0.000143	0.78	0.31	83
U OF GA	B	M	-0.02	0.13	-5.7	0.55	0.0013	0.0002	0.0013	0.0002	-0.1148	0.0198	0.000064	-0.000073	1.15	0.16	1285
U OF GA	B	M	-0.08	0.16	0.74	0.76	0.0006	0.0002	0.0011	0.0002	-0.1138	0.0176	0.000048	-0.000062	1.35	0.14	711
U OF GA	H	M	-1.19	1.53	-4.4	10.1	0.0009	0.0007	0.0018	0.0010	-0.0672	0.0549	0.000253	-0.000195	1.97	0.50	62
U OF GA	H	M	-1.8	1.48	3.17	8.32	0.0008	0.0013	0.0014	0.0015	-0.0315	0.0559	0.000063	-0.000146	0.28	0.40	47
U OF GA	W	M	0.12	0.08	1.10	0.43	0.0015	0.0001	0.0014	0.0001	-0.0201	0.0295	0.000079	-0.000112	0.88	0.19	2088
U OF GA	W	M	-0.06	0.08	0.74	0.42	0.0013	0.0001	0.0012	0.0001	-0.1114	0.0213	0.000036	-0.000070	0.84	0.18	1641
ALBANY ST COL	A	M	-0.29	0.10	0.72	0.65	0.0023	0.0002	0.0013	0.0002	-0.0604	0.0681	0.000111	-0.000138	1.00	0.58	1024
ALBANY ST COL	B	M	-0.09	0.13	0.54	0.68	0.0018	0.0002	0.0014	0.0002	-0.0678	0.0764	0.000138	-0.000165	1.02	0.64	480
ALBANY ST COL	B	M	5.00	0.79	-5.8	3.84	0.0017	0.0006	0.0016	0.0012	-5.723	0.5733	0.003483	-0.003494	0.82	0.84	21
ARMSTRONG ST COL	B	M	0.30	0.57	-1.2	2.85	0.0016	0.0006	0.0013	0.0005	-0.0685	0.0138	0.000020	-0.000039	0.88	0.42	114
ARMSTRONG ST COL	B	M	-0.85	0.95	5.29	4.80	0.0005	0.0007	0.0004	0.0007	-0.281	0.0472	0.000060	-0.000128	0.73	0.79	41
ARMSTRONG ST COL	W	M	-0.31	0.35	2.74	1.99	0.0020	0.0003	0.0010	0.0003	-0.0450	0.0554	0.000122	-0.000155	0.68	0.45	430
ARMSTRONG ST COL	W	M	-0.53	0.60	3.79	3.09	0.0018	0.0004	-0.0002	0.0003	-0.0388	0.0481	0.000073	-0.000103	1.32	0.45	302
AUGUSTA COL	A	M	11.4	8.91	-29	16.3	0.0012	0.0007	0.0015	0.0009	-0.0788	0.0992	0.000127	-0.000228	1.18	0.76	32
AUGUSTA COL	A	M	8.03	7.11	-11	14.9	0.0008	0.0011	0.0032	0.0010	-0.267	0.0405	0.000054	-0.000120	-0.18	0.59	35
AUGUSTA COL	A	M	-0.10	0.10	-0.84	0.67	0.0014	0.0003	0.0004	0.0003	-0.0627	0.0614	0.000090	-0.000119	1.49	0.64	293
AUGUSTA COL	B	M	0.10	0.16	-0.82	1.03	0.0007	0.0004	0.0006	0.0005	-0.0359	0.0441	0.000117	-0.000154	1.46	0.46	114
AUGUSTA COL	B	M	-0.25	0.15	0.78	0.48	0.0017	0.0002	0.0011	0.0002	-0.0601	0.0654	0.000130	-0.000148	1.19	0.48	1343
AUGUSTA COL	W	M	-0.26	0.02	0.14	0.15	0.0009	0.0002	0.0008	0.0002	-0.0560	0.0648	0.000082	-0.000109	1.40	0.55	1010
COLUMBUS COL	A	M	0.40	0.54	4.28	2.74	0.0008	0.0009	0.0010	0.0011	-0.0607	0.0725	0.000102	-0.000152	1.36	0.72	36
COLUMBUS COL	A	M	0.80	0.40	-3.1	2.63	-0.0020	0.0010	0.0035	0.0011	-0.0778	0.0805	0.000236	-0.000256	1.96	0.73	31
COLUMBUS COL	B	M	0.17	0.09	-5.5	0.39	0.0018	0.0003	0.0013	0.0002	-0.0358	0.0441	0.000049	-0.000075	0.85	0.60	825
COLUMBUS COL	B	M	0.09	0.20	-1.2	0.82	0.0007	0.0005	0.0023	0.0004	-0.242	0.0325	0.000048	-0.000076	0.67	0.42	232
COLUMBUS COL	H	M	1.83	0.57	3.29	2.83	0.0015	0.0009	0.0015	0.0009	-0.0498	0.0780	0.000041	-0.000144	-0.08	0.72	32
COLUMBUS COL	H	M	0.18	1.35	-11	5.58	0.0016	0.0023	-0.0017	0.0024	-10.27	0.1388	0.000332	-0.000587	2.38	0.58	21
COLUMBUS COL	W	M	0.07	0.07	-1.2	0.35	0.0024	0.0001	0.0014	0.0001	-0.0404	0.0483	0.000082	-0.000111	0.69	0.53	2145
COLUMBUS COL	W	M	0.18	0.09	1.22	0.38	0.0011	0.0002	0.0020	0.0001	-0.0320	0.0389	0.000077	-0.000101	0.63	0.47	1743
FORT VALLEY ST COL	B	M	0.16	0.08	-1.5	0.72	0.0015	0.0003	0.0023	0.0003	0.0043	0.0017	-0.000013	-0.000004	0.90	0.25	974
FORT VALLEY ST COL	B	M	0.22	0.10	-1.1	0.81	0.0005	0.0003	0.0024	0.0003	0.0099	-0.0032	-0.000044	0.000027	0.91	0.21	688
FORT VALLEY ST COL	B	M	7.46	5.29	-53	30.1	0.0028	0.0027	-0.0029	0.0040	0.0249	-0.0118	-0.000250	0.000193	3.01	0.37	22
GA COL	B	M	0.15	0.20	-1.4	1.07	0.0017	0.0003	0.0010	0.0003	-0.0523	0.0617	0.000103	-0.000137	0.99	0.50	601
GA COL	B	M	0.88	0.37	-3.8	1.60	0.0006	0.0004	0.0009	0.0006	-0.0520	0.0637	0.000103	-0.000150	1.20	0.69	125
GA COL	W	M	0.19	0.14	0.43	0.80	0.0022	0.0002	0.0014	0.0002	-0.0838	0.0898	0.000153	-0.000174	0.93	0.55	1748

MULTIPLE REGRESSIONS BY INSTITUTION

INSTITUTION	R	S	FREE LUNCH	SE	RED LUNCH	SE	SATV	SE	SATM	SE	HOURS CARR	HOURS EARN	HOURS CARR SQ	HOURS EARN SQ	CONST	R-SQ	N
GA COL	W	M	-0.52	0.19	-1.04	0.57	0.0017	0.0002	0.0009	0.0002	-0.0707	0.0787	0.000133	-0.000150	1.05	0.49	1075
GA SOUTHERN COL	B	M	0.21	0.10	-1.1	0.56	0.0014	0.0002	0.0017	0.0002	-0.0703	0.0782	0.000143	-0.000172	0.83	0.56	612
GA SOUTHERN COL	B	M	-0.13	0.13	-3.9	0.80	0.0014	0.0003	0.0006	0.0003	-0.0704	0.0758	0.000129	-0.000148	1.42	0.48	392
GA SOUTHERN COL	H	M	-6.1	3.15	13.3	6.70	0.0019	0.0006	0.0030	0.0008	-0.0058	0.0032	0.000007	-0.000038	-0.01	0.95	21
GA SOUTHERN COL	W	M	0.09	0.08	0.27	0.42	0.0018	0.0001	0.0016	0.0001	-0.0847	0.0917	0.000188	-0.000192	0.90	0.58	3403
GA SOUTHERN COL	W	M	-0.08	0.08	1.28	0.45	0.0018	0.0001	0.0011	0.0001	-0.0721	0.0799	0.000138	-0.000188	0.88	0.53	2944
GA SOUTHWESTERN COL	B	M	0.16	0.13	-0.01	0.69	0.0010	0.0003	0.0012	0.0004	-0.0491	0.0593	0.000089	-0.000125	1.11	0.58	391
GA SOUTHWESTERN COL	B	M	0.10	0.32	0.60	1.81	0.0014	0.0005	-0.0006	0.0005	-0.0472	0.0650	0.000095	-0.000129	1.69	0.46	147
GA SOUTHWESTERN COL	W	M	-0.03	0.15	1.93	0.87	0.0016	0.0002	0.0012	0.0002	-0.0741	0.0847	0.000141	-0.000174	0.91	0.63	740
GA SOUTHWESTERN COL	W	M	0.07	0.15	2.84	0.88	0.0019	0.0002	0.0008	0.0002	-0.0622	0.0754	0.000122	-0.000172	0.68	0.65	618
NORTH GA COL	B	M	2.07	1.33	-13	8.46	0.0018	0.0017	0.0037	0.0018	-0.0728	0.0949	0.000075	-0.000163	-0.35	0.74	33
NORTH GA COL	B	M	0.09	0.85	-2.4	2.82	0.0027	0.0011	0.0013	0.0009	-0.0734	0.0839	0.000124	-0.000187	0.78	0.88	47
NORTH GA COL	B	M	-0.32	0.18	1.53	0.86	0.0013	0.0002	0.0017	0.0002	-0.0783	0.0880	0.000138	-0.000173	0.95	0.54	1709
NORTH GA COL	W	M	-0.23	0.20	1.35	0.89	0.0018	0.0002	0.0008	0.0002	-0.0732						

INSTITUTION	R	S	FREE LUNCH	SE	RED LUNCH	SE	SATV	SE	SATM	SE	HOURS CARR	HOURS EARN	HOURS CARR SQ	HOURS EARN SQ	CONST	R-SQ	N
KENNESAW ST COL	B	M	2.93	2.03	-9.1	6.26	0.0010	0.0009	0.0011	0.0009	-0.0046	0.0425	-0.000431	0.000235	0.11	0.80	27
KENNESAW ST COL	W	F	1.53	0.39	-2.6	1.52	0.0021	0.0001	0.0013	0.0001	-0.0906	0.0983	0.000158	-0.000181	0.90	0.62	2666
KENNESAW ST COL	W	M	0.02	0.06	-0.07	0.24	0.0010	0.0001	0.0013	0.0001	-0.0715	0.0834	0.000130	-0.000169	0.93	0.63	1681
MACON COL	B	F	-0.28	0.20	1.38	0.86	0.0010	0.0004	0.0011	0.0004	-0.0813	0.0761	0.000140	-0.000207	0.88	0.67	287
MACON COL	B	M	-0.42	0.35	2.19	1.83	0.0016	0.0008	0.0017	0.0010	-0.304	0.0674	0.000047	-0.000276	-0.33	0.82	28
MACON COL	W	F	0.01	0.00	-0.04	0.03	0.0019	0.0002	0.0017	0.0002	-0.866	0.0937	0.000211	-0.000243	0.88	0.51	1251
MACON COL	W	M	0.45	0.28	-1.6	0.98	0.0024	0.0003	0.0006	0.0003	-0.983	0.1074	0.000279	-0.000335	0.97	0.58	455
MIDDLE GA COL	B	F	-0.06	0.16	1.04	0.92	0.0030	0.0006	0.0009	0.0006	-0.253	0.0399	0.000113	-0.000195	0.52	0.38	156
MIDDLE GA COL	B	M	0.05	0.63	-0.74	3.18	0.0034	0.0012	0.0011	0.0009	-0.0558	0.0659	0.000256	-0.000257	0.77	0.54	73
MIDDLE GA COL	W	F	-0.16	0.13	1.22	0.77	0.0030	0.0002	0.0014	0.0002	-0.431	0.0628	0.000104	-0.000159	0.55	0.45	928
MIDDLE GA COL	W	M	-0.14	0.18	0.82	1.06	0.0019	0.0003	0.0016	0.0002	-0.660	0.0670	0.000128	-0.000182	0.64	0.50	755
SOUTH GA COL	B	F	-0.17	0.20	1.14	1.46	0.0003	0.0008	0.0008	0.0007	-0.976	0.1027	0.000329	-0.000364	1.69	0.39	146
SOUTH GA COL	B	M	0.13	0.18	-2.1	1.72	0.0012	0.0008	0.0006	0.0009	-0.857	0.0900	0.000144	-0.000162	1.64	0.70	43
SOUTH GA COL	W	F	0.08	0.09	-0.21	0.24	0.0026	0.0003	0.0014	0.0003	-0.936	0.0975	0.000290	-0.000298	0.86	0.54	485
SOUTH GA COL	W	M	-0.12	0.57	0.27	2.64	0.0016	0.0004	0.0014	0.0004	-0.791	0.0875	0.000205	-0.000246	1.04	0.54	308
GORDON COL	B	F	-1	0.63	9.59	2.58	0.0015	0.0008	0.0006	0.0007	-0.755	0.0998	0.000251	-0.000414	0.70	0.65	98
GORDON COL	B	M	-0.40	0.80	2.54	4.34	0.0024	0.0013	0.0000	0.0010	-1.313	0.1337	0.000671	-0.000614	1.65	0.71	45
GORDON COL	W	F	-0.51	0.43	2.46	1.61	0.0017	0.0003	0.0014	0.0003	-1.102	0.1148	0.000314	-0.000348	1.43	0.56	507
GORDON COL	W	M	0.92	0.37	-1.8	1.04	0.0010	0.0004	0.0015	0.0003	-0.895	0.1045	0.000273	-0.000365	1.00	0.61	328
EAST GA COL	B	F	0.82	1.34	-2.9	4.64	0.0024	0.0020	0.0001	0.0011	-1.599	0.1565	0.000890	-0.000952	1.17	0.57	29
EAST GA COL	W	F	-1.4	0.54	7.83	3.03	0.0034	0.0008	-0.0028	0.0009	-1.348	0.1323	0.000453	-0.000437	2.65	0.48	104
EAST GA COL	W	M	-0.24	0.10	1.12	0.48	0.0028	0.0009	0.0011	0.0008	-1.895	0.1937	0.000697	-0.000761	1.16	0.65	77
BAINBRIDGE COL	B	F	-5.2	2.89	-13	5.97	0.0016	0.0007	0.0010	0.0010	-0.650	0.0703	-0.000101	0.000047	3.60	0.87	65
BAINBRIDGE COL	B	M	0.01	3.58	-67	27	0.0022	0.0016	-0.0020	0.0013	-0.612	0.0855	0.000075	-0.000204	6.29	0.91	24
BAINBRIDGE COL	W	F	-0.24	0.66	3.04	2.34	0.0014	0.0004	0.0015	0.0004	-1.087	0.1133	0.000233	-0.000236	1.37	0.50	280
BAINBRIDGE COL	W	M	0.70	0.53	-3.8	2.28	0.0006	0.0005	0.0005	0.0005	-0.918	0.0945	0.000240	-0.000228	2.07	0.49	231
ATLANTA METRO COL	B	F	0.00	0.00	0.01	0.00	0.0025	0.0003	0.0023	0.0003	-1.310	0.1414	0.000439	-0.000335	1.21	0.60	1127
ATLANTA METRO COL	B	M	0.51	0.14	-1	0.63	0.0014	0.0003	0.0014	0.0003	-0.742	0.0886	0.000153	-0.000225	1.15	0.60	520
WAYCROSS COL	B	F	-1.4	1.08	7.00	5.06	0.0013	0.0009	0.0000	0.0009	-0.226	0.0342	-0.000019	-0.000040	1.42	0.73	34
WAYCROSS COL	W	F	-0.28	0.44	3.24	2.82	0.0012	0.0003	0.0018	0.0003	-0.573	0.0775	0.000081	-0.000193	0.50	0.62	308
WAYCROSS COL	W	M	0.63	0.82	-5.7	5.97	0.0015	0.0005	0.0012	0.0004	-0.665	0.0780	0.000162	-0.000198	1.13	0.64	168



RESIDUAL GRADE POINT AVERAGE BY HIGH SCHOOL

CODE	HIGH SCHOOL	CITY	MEAN FALL 83	MEAN FALL 84	MEAN FALL 85	MEAN FALL 86	N FALL 83	N FALL 84	N FALL 85	N FALL 86	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL
110010	ADAIRSVILLE HIGH	ADAIRSVILLE	0.22	0.08	0.42	0.48	101	71	316	60	0.87	0.84	0.41	0.67
110020	COOK HIGH	ADEL	-0.13	0.06	0.20	0.13	11	12	12	20	0.58	0.45	0.50	0.45
110027	WHEELER CO HIGH	ALAMO	-0.03	-0.04	-0.02	0.03	98	115	115	106	0.48	0.49	0.41	0.40
110040	ALBANY HIGH	ALBANY	-0.09	-0.03	-0.06	0.19	25	22	19	20	0.40	0.33	0.43	0.45
110042	DOUGHERTY COMPREHENSIVE HS	ALBANY	-0.09	-0.02	-0.05	-0.02	207	196	186	166	0.60	0.55	0.55	0.54
110045	MONROE HIGH	ALBANY	-0.08	-0.01	-0.09	-0.02	169	153	136	143	0.49	0.52	0.47	0.47
110048	WESTOVER HIGH	ALBANY	-0.06	-0.04	-0.06	-0.07	134	111	138	130	0.42	0.33	0.40	0.39
110055	BACON CO HIGH	ALMA	-0.03	-0.06	-0.02	-0.02	208	202	202	241	0.51	0.49	0.48	0.48
110060	WILTON HIGH	ALPHA	-0.06	0.27	0.18	0.20	42	47	41	44	0.53	0.46	0.37	0.46
110065	AMERICUS HIGH	ALPHARETTA	0.01	0.01	0.03	-0.06	152	148	151	173	0.60	0.54	0.46	0.43
110073	SUMTER CO HIGH	AMERICUS	0.04	-0.02	-0.00	0.02	135	134	150	140	0.43	0.47	0.40	0.34
110110	TURNER CO HIGH	ASHBURN	0.20	-0.03	0.13	0.05	7	9	13	13	0.54	0.34	0.29	0.25
110116	GEDAR SHOALS HIGH	ATHENS	0.10	0.07	0.02	0.03	57	78	73	78	0.51	0.50	0.46	0.46
110115	CLARKE CENTRAL HIGH	ATHENS	-0.00	-0.07	-0.01	-0.01	349	358	356	362	0.66	0.63	0.54	0.56
110227	ARCHER, SAMUEL H. HIGH	ATLANTA	-0.04	-0.06	-0.01	0.01	430	434	353	352	0.67	0.67	0.61	0.59
110140	BROWN JOE E HIGH	ATLANTA	-0.09	0.01	-0.10	-0.13	15	17	14	14	0.32	0.32	0.35	0.31
110145	CRESTWOOD HIGH	ATLANTA	-0.19	-0.02	-0.07	-0.07	32	36	33	31	0.37	0.40	0.48	0.41
110148	CROSS KEYS HIGH	ATLANTA	-0.13	-0.19	-0.04	-0.06	165	151	164	171	0.55	0.61	0.47	0.49
110164	DOUGLASS FREDERICK HIGH	ATLANTA	-0.01	-0.01	-0.03	-0.04	81	62	59	68	0.59	0.49	0.35	0.36
110162	DRUID HILLS HIGH	ATLANTA	-0.02	-0.09	-0.09	-0.06	154	144	130	140	0.36	0.42	0.39	0.44
110165	FULTON HIGH	ATLANTA	-0.05	-0.06	-0.02	-0.08	97	87	74	87	0.66	0.54	0.45	0.47
110248	GEORGE WALTER F HIGH	ATLANTA	-0.02	0.11	-0.01	-0.01	40	35	33	31	0.36	0.36	0.46	0.42
110170	GRADY HENRY HIGH	ATLANTA	-0.02	-0.12	-0.17	-0.17	58	72	74	69	0.39	0.52	0.33	0.39
110168	HARPER HIGH	ATLANTA	0.07	0.04	0.04	0.06	64	51	43	53	0.55	0.46	0.45	0.47
110184	LAKESIDE HIGH	ATLANTA	-0.09	-0.01	-0.06	-0.08	76	76	82	83	0.45	0.38	0.41	0.35
110235	MAYS BENJAMIN E	ATLANTA	-0.03	-0.06	-0.03	-0.07	317	271	259	236	0.61	0.56	0.49	0.47
110200	MURPHY HIGH	ATLANTA	-0.03	-0.05	-0.06	-0.04	130	125	148	139	0.41	0.42	0.40	0.37
110205	NORTH FULTON HIGH	ATLANTA	0.04	0.05	-0.02	0.07	13	10	14	13	0.51	0.25	0.25	0.74
111154	NORTH SPRINGS HIGH	ATLANTA	0.01	0.00	0.02	-0.02	101	98	106	104	0.46	0.46	0.43	0.42
110210	NORTHSIDE ATL	ATLANTA	-0.04	-0.03	-0.06	-0.02	172	176	200	237	0.60	0.49	0.44	0.44
110216	RIVERWOOD HIGH	ATLANTA	-0.10	-0.09	-0.07	0.02	188	185	175	181	0.52	0.49	0.50	0.48
110220	ROOSEVELT HIGH	ATLANTA	-0.08	-0.07	-0.01	-0.02	193	195	177	182	0.53	0.54	0.50	0.53
110242	THERRELL, D M HIGH	ATLANTA	-0.05	-0.02	0.20	-0.10	24	12	11	18	0.38	0.35	0.33	0.31
110175	TURNER HENRY M HIGH	ATLANTA	-0.00	-0.06	-0.03	-0.04	118	109	106	105	0.41	0.38	0.35	0.35
110130	WASHINGTON BOOKER T	ATLANTA	-0.04	-0.02	-0.00	-0.09	46	35	35	37	0.49	0.44	0.43	0.39
110250	WEST FULTON HIGH	ATLANTA	-0.09	-0.04	-0.01	-0.04	69	73	56	57	0.51	0.39	0.39	0.31
110258	WESTWOOD HIGH	ATLANTA	-0.03	0.01	-0.08	-0.07	43	45	39	37	0.34	0.32	0.39	0.40
110285	GLENN HILLS HIGH	AUGUSTA	-0.2	-0.17	-0.10	-0.13	68	64	66	53	0.55	0.54	0.45	0.41
110300	JOSEY COMPREHENSIVE HIGH	AUGUSTA	-0.01	-0.02	-0.00	0.01	118	130	104	123	0.42	0.43	0.39	0.35
110295	LANEY LUCY CRAFT HS	AUGUSTA	0.02	0.13	0.11	0.03	35	43	38	43	0.47	0.43	0.48	0.41
110303	WESTSIDE HIGH	AUGUSTA	-0.01	-0.08	-0.04	0.05	32	31	35	35	0.30	0.27	0.30	0.24
110305	SOUTH CUBB HIGH	AUSTELL	-0.01	0.00	0.05	0.07	309	337	318	297	0.48	0.50	0.45	0.43
110318	AVONDALE HIGH	AVONDALE ESTS	0.04	0.06	0.08	-0.02	135	133	128	139	0.47	0.41	0.34	0.40
110335	BAINBRIDGE SR HIGH	BAINBRIDGE	0.04	-0.00	-0.05	-0.06	76	63	54	55	0.59	0.59	0.46	0.46
110343	LAMAR COUNTY COMPREHENSIVE	BARNESVILLE	-0.06	-0.02	0.03	-0.01	142	150	162	166	0.46	0.46	0.45	0.48
110355	APPLING CO HIGH	BAXLEY	-0.05	-0.01	-0.00	0.06	23	39	36	34	0.41	0.41	0.35	0.34
110370	PIERCE COUNTY HS	BLACKSHEAR	0.07	0.02	0.08	0.07	54	55	47	54	0.45	0.57	0.38	0.46
110380	UNION CO HIGH	BLAIRSVILLE	-0.17	-0.10	-0.04	0.03	52	47	62	68	0.52	0.57	0.44	0.50
110385	EARLY CO HIGH	BLAKELY	0.26	0.07	-0.24	-0.11	10	10	11	17	0.46	0.43	0.35	0.57
110395	FANNIN CO HIGH	BLUE RIDGE	0.12	0.04	0.00	0.05	72	67	68	63	0.41	0.43	0.57	0.48
110415	BOWDON HIGH	BOWDON	0.13	0.08	0.18	0.18	72	66	73	61	0.67	0.55	0.54	0.53
110470	BROXTON HIGH	BROXTON	0.09	0.09	0.06	0.06	77	77	63	62	0.41	0.50	0.45	0.48
			0.02	0.01	0.12	-0.02	14	16	13	20	0.53	0.56	0.33	0.45

RESIDUAL GRADE POINT AVERAGE BY HIGH SCHOOL

CODE	HIGH SCHOOL	CITY	MEAN FALL 83	MEAN FALL 84	MEAN FALL 85	MEAN FALL 86	N FALL 83	N FALL 84	N FALL 85	N FALL 86	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL
110473	BRUNSWICK HIGH	BRUNSWICK	-0.04	0.03	0.04	0.09	88	145	142	157	0.52	0.50	0.47	0.46
110475	GLYNN ACADEMY	BRUNSWICK	0.00	0.04	-0.00	0.02	180	235	270	276	0.53	0.57	0.53	0.52
110495	TRI-CO HIGH	BUENA VISTA	0.10	0.01	0.09	0.07	56	61	60	72	0.40	0.49	0.45	0.43
110505	BUFORD HIGH	BUFORD	0.19	0.18	0.01	-0.05	32	32	41	42	0.47	0.40	0.42	0.38
110510	TAYLOR CO HIGH	BUTLER	-0.02	-0.09	0.01	0.01	39	41	39	45	0.45	0.51	0.41	0.45
110540	CAIRO HIGH	CAIRO	0.06	0.00	0.10	0.09	58	73	74	88	0.43	0.37	0.40	0.49
110550	CALHOUN HIGH	CALHOUN	0.08	-0.04	-0.06	-0.07	108	115	103	124	0.51	0.48	0.50	0.46
110560	RED BUD HIGH	CALHOUN	0.15	-0.06	0.09	-0.01	18	18	16	16	0.51	0.48	0.42	0.53
110585	MITCHELL-BAKER (MITCHELL CO)	CAMILLA	-0.03	0.02	0.07	0.06	58	59	68	80	0.43	0.43	0.46	0.42
110589	CHEROKEE HIGH	CANTON	0.05	0.03	0.08	0.10	92	89	96	106	0.55	0.46	0.46	0.48
110595	FRANKLIN CO HIGH	CARNESVILLE	0.22	0.04	0.16	0.14	44	60	51	60	0.55	0.56	0.57	0.57
110603	CARROLLTON HIGH	CARROLLTON	0.05	-0.01	-0.01	0.03	207	208	218	209	0.52	0.53	0.50	0.51
110604	CENTRAL HIGH	CARROLLTON	0.04	0.01	-0.03	0.01	92	103	113	107	0.47	0.46	0.41	0.43
110625	CASS COMPREHENSIVE	CARTERSVILLE	-0.05	0.01	0.10	0.01	44	41	40	51	0.51	0.65	0.41	0.46
110615	CARTERSVILLE HIGH	CARTERSVILLE	0.05	-0.01	0.08	0.08	74	70	81	77	0.46	0.44	0.53	0.49
110648	CEDARTOWN HIGH	CEDARTOWN	-0.03	-0.06	-0.10	-0.02	85	88	82	80	0.54	0.43	0.47	0.46
110650	CHAMBLEE HIGH	CHAMBLEE	-0.10	-0.13	-0.11	-0.09	218	193	173	189	0.54	0.52	0.45	0.44
110657	HENDERSON HIGH	CHAMBLEE	-0.11	-0.12	-0.06	-0.11	309	272	255	272	0.57	0.49	0.43	0.45
110680	MURRAY CO HIGH	CHATSWORTH	-0.08	0.02	0.09	0.15	86	90	79	76	0.43	0.50	0.50	0.56
110675	GORDON LEE HIGH	CHICKAMAUGA	-0.18	-0.00	0.12	0.09	32	40	47	42	0.34	0.48	0.50	0.46
110698	CLAXTON HIGH	CLAXTON	0.11	0.18	0.16	0.15	46	49	39	37	0.50	0.46	0.38	0.40
110720	WHITE CO HIGH	CLEVELAND	-0.04	0.07	0.07	0.15	36	32	38	44	0.54	0.73	0.55	0.42
110755	BLECKLEY COUNTY	COCHRAN	0.06	0.10	0.24	0.24	95	91	101	83	0.44	0.45	0.48	0.44
110794	FELWOOD HIGH	COLLEGE PARK	0.15	0.01	0.12	0.13	32	42	45	42	0.50	0.53	0.50	0.55
110800	NORTH CLAYTON SR HS	COLLEGE PARK	0.04	-0.06	0.06	-0.02	145	131	122	163	0.43	0.43	0.45	0.43
110820	BAKER HIGH	COLUMBUS	0.04	0.01	-0.05	-0.09	142	128	117	93	0.46	0.46	0.41	0.52
110823	GARVER HIGH	COLUMBUS	-0.09	-0.06	-0.01	-0.00	96	95	75	67	0.47	0.46	0.43	0.45
110825	COLUMBUS HIGH	COLUMBUS	-0.02	-0.01	-0.03	-0.06	258	272	234	223	0.49	0.49	0.46	0.46
110828	HARDAWAY HIGH	COLUMBUS	0.01	-0.01	-0.04	-0.05	331	335	346	353	0.51	0.49	0.47	0.47
110930	JORDAN VOCA HIGH	COLUMBUS	-0.07	-0.04	0.06	0.02	140	134	121	117	0.50	0.50	0.46	0.45
110931	KENDRICK HIGH	COLUMBUS	-0.01	-0.06	-0.06	-0.01	198	200	170	166	0.48	0.50	0.47	0.46
110934	SHAW HIGH	COLUMBUS	0.10	-0.02	0.01	-0.04	118	163	162	162	0.54	0.50	0.47	0.49
110935	SPENCER WILLIAM HIGH	COLUMBUS	0.11	0.00	-0.06	-0.02	79	76	92	100	0.44	0.51	0.45	0.40
110948	COMMERCE HIGH	COMMERCE	0.06	0.05	0.03	0.10	68	67	66	45	0.53	0.52	0.46	0.47
110957	HERITAGE HIGH	CONYERS	-0.03	-0.02	0.03	0.06	117	134						

RESIDUAL GRADE POINT AVERAGE BY HIGH SCHOOL

CODE	HIGH SCHOOL	CITY	MEAN FALL 83	MEAN FALL 84	MEAN FALL 85	MEAN FALL 86	N FALL 83	N FALL 84	N FALL 85	N FALL 86	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL
111228	CEDAR GROVE HIGH	DECATUR ELENWD	-0.05	-0.15	-0.07	0.00	39	37	42	51	0.49	0.32	0.31	0.38
111090	SEMINOLE CO HIGH	DONALSONVLE	-0.11	0.07	0.10	-0.01	51	67	67	67	0.61	0.52	0.40	0.42
111098	SEGOYAH HIGH	DORAVILLE	-0.04	-0.06	-0.06	-0.02	95	83	67	79	0.74	0.53	0.42	0.43
111100	COFFEE CO HIGH	DOUGLAS	-0.12	-0.00	-0.03	-0.01	141	140	151	128	0.38	0.48	0.42	0.39
111124	DUBLIN HIGH	DUBLIN	-0.03	-0.03	-0.05	-0.01	227	188	197	177	0.51	0.50	0.51	0.48
111125	EAST LAURENS HIGH	DUBLIN	0.09	0.03	0.06	0.21	41	38	47	47	0.52	0.33	0.49	0.53
110535	WEST LAURENS HIGH	DUBLIN	0.01	-0.02	-0.03	-0.03	85	84	73	60	0.47	0.44	0.41	0.43
111180	DULUTH HIGH	DULUTH	-0.18	-0.19	-0.11	-0.11	42	42	41	47	0.49	0.66	0.43	0.47
111182	DUNWOODY HIGH	DUNWOODY	-0.15	-0.06	-0.02	-0.07	345	340	308	323	0.73	0.64	0.44	0.42
111175	RUSSELL HIGH	EAST POINT	0.23	0.12	0.13	0.01	43	36	38	32	0.52	0.50	0.41	0.48
111180	DODGE CO HIGH	EASTMAN	0.02	0.03	-0.02	-0.01	111	118	125	120	0.49	0.43	0.47	0.48
111190	PUTNAM COUNTY	EATONTON	0.12	-0.09	0.06	0.04	35	42	48	47	0.53	0.54	0.52	0.52
111210	ELBERT COUNTY SR HIGH	ELBERTON	0.08	-0.01	0.09	0.04	87	84	71	82	0.54	0.72	0.55	0.53
111230	GILMER HIGH	ILLIJAY	-0.03	0.04	0.06	-0.06	38	42	33	29	0.43	0.43	0.37	0.72
111255	EVANS HIGH	EVANS	-0.00	-0.02	-0.03	-0.02	251	280	299	345	0.40	0.43	0.43	0.43
111265	CAMPBELL HIGH	FAIRBURN	0.08	0.02	-0.04	0.10	56	43	55	66	0.51	0.51	0.51	0.51
111275	FAYETTE CO HIGH	FAYETTEVILLE	0.01	0.02	0.03	-0.00	273	288	302	277	0.43	0.50	0.41	0.48
111280	FITZGERALD HIGH	FITZGERALD	0.05	0.00	-0.04	-0.05	98	106	114	116	0.53	0.55	0.49	0.42
113350	CHATTANOOGA VALLEY HIGH	FLINTSTONE	0.11	0.21	-0.05	-0.08	8	5	14	17	0.57	0.45	0.51	0.45
111300	CHARLTON CO HIGH	FOLKSTON	-0.10	-0.01	0.05	-0.04	39	50	32	31	0.57	0.45	0.38	0.45
111305	FOREST PARK SR HIGH	FOREST PARK	0.00	-0.02	0.01	-0.02	220	202	196	203	0.45	0.48	0.46	0.47
111333	PEACH COUNTY HS	FORT VALLEY	0.03	0.03	0.01	-0.03	129	157	142	149	0.62	0.57	0.47	0.50
111350	HEARD HIGH	FRANKLIN	0.14	0.00	0.02	-0.07	24	25	30	32	0.44	0.37	0.39	0.45
112612	LAKEVIEW-FT OGELTHORPE	FT OGELTHORPE	-0.02	0.11	0.08	-0.01	54	43	47	51	0.53	0.54	0.53	0.53
111378	EAST HALL HIGH	GAINESVILLE	0.00	0.03	-0.02	-0.04	40	38	46	54	0.52	0.39	0.43	0.50
111385	GAINESVILLE HIGH	GAINESVILLE	0.00	-0.01	-0.01	-0.01	181	171	144	136	0.52	0.54	0.53	0.51
111385	NORTH HALL HIGH	GAINESVILLE	0.01	-0.01	-0.01	-0.03	107	110	122	128	0.46	0.41	0.49	0.47
112880	GROVES ROBERT W HIGH	GARDEN CITY	-0.10	-0.05	-0.07	-0.03	44	42	76	69	0.49	0.35	0.41	0.36
111435	GLASCOCK CO HIGH	GIBSON	-0.26	-0.06	0.02	-0.03	11	17	10	14	0.57	0.37	0.29	0.44
111440	GLENNVILLE HIGH	GLENNVILLE	-0.06	0.13	-0.10	0.04	33	29	24	32	0.45	0.52	0.52	0.41
111475	JONES CO HIGH	GRAY	-0.03	-0.02	-0.02	-0.03	99	105	109	93	0.40	0.42	0.47	0.49
111495	GREENE/TALIAFERRO COMP	GREENSBORO	0.14	0.09	0.01	0.09	46	50	41	36	0.59	0.61	0.40	0.47
111505	GREENVILLE HIGH	GREENVILLE	0.03	0.07	0.04	0.03	10	10	18	24	0.40	0.32	0.44	0.37
111515	GRIFFIN HIGH	GRIFFIN	-0.08	-0.09	-0.03	-0.04	207	244	221	277	0.41	0.42	0.44	0.48
111545	HARRIS CO HIGH	HAMILTON	-0.05	0.05	-0.01	-0.03	70	70	62	64	0.48	0.40	0.49	0.42
111585	HARLEM HIGH	HARLEM	-0.04	0.00	-0.01	-0.04	81	83	97	90	0.39	0.48	0.4	0.45
111580	HART CO HIGH	HARTWELL	-0.21	-0.03	-0.07	0.15	55	50	50	59	0.63	0.89	0.4	0.47
111585	HAWKINSVILLE HIGH SC	HAWKINSVILLE	-0.12	-0.08	-0.02	-0.01	56	54	52	59	0.45	0.49	0.45	0.43
111600	HEPHZIBAH HIGH	HEPHZIBAH	-0.06	0.00	0.01	-0.02	108	98	92	94	0.35	0.36	0.38	0.45
111615	BRADWELL INSTITUTE	HINESVILLE	-0.02	-0.00	0.01	0.05	127	128	133	128	0.48	0.46	0.39	0.38
111630	HOGANSVILLE HIGH	HOGANSVILLE	0.18	0.01	0.15	0.05	18	14	17	18	0.68	0.29	0.53	0.40
111640	BANKS CO HIGH	HOMER	-0.12	-0.30	0.04	0.01	8	11	14	17	0.53	0.64	0.54	0.53
111645	CLINCH CO HIGH	HOMERVILLE	0.05	0.13	0.10	0.14	38	33	45	41	0.42	0.56	0.48	0.48
111680	WILKINSON CO HIGH	IRWINTON	0.12	0.01	0.03	0.05	47	60	74	64	0.45	0.43	0.41	0.44
111675	JACKSON HIGH	JACKSON	0.02	0.06	0.01	0.03	36	48	40	45	0.65	0.41	0.56	0.45
111695	PICKENS CO HIGH	JASPER	-0.15	-0.11	0.14	0.03	28	28	30	34	0.39	0.67	0.53	0.40
111700	JEFFERSON HIGH	JEFFERSON	-0.06	-0.06	-0.08	0.07	77	64	59	61	0.59	0.50	0.44	0.54
111710	TWIGGS CO HIGH	JEFFERSONVILLE	0.12	0.18	0.04	-0.08	31	25	19	24	0.49	0.48	0.53	0.48
111720	WAYNE CO HIGH	JESUP	-0.01	0.03	-0.04	0.04	119	137	135	156	0.47	0.48	0.43	0.43
111730	JONESBORO SR HIGH	JONESBORO	0.05	0.03	-0.02	-0.01	182	194	177	213	0.43	0.47	0.45	0.42
110005	NORTH COBB HIGH	KENNESAW	-0.00	-0.03	-0.02	-0.01	183	201	212	266	0.46	0.46	0.42	0.43
111755	LA FAYETTE HIGH	LA FAYETTE	-0.15	-0.02	0.01	0.01	74	86	78	76	0.69	0.46	0.40	0.46
111765	LA GRANGE HIGH	LA GRANGE	0.03	-0.11	-0.05	-0.02	78	85	74	77	0.58	0.52	0.46	0.42

RESIDUAL GRADE POINT AVERAGE BY HIGH SCHOOL

CODE	HIGH SCHOOL	CITY	MEAN FALL 83	MEAN FALL 84	MEAN FALL 85	MEAN FALL 86	N FALL 83	N FALL 84	N FALL 85	N FALL 86	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL	STD. DEV. FALL
111777	TROUP HIGH	LA GRANGE	-0.05	-0.22	-0.09	-0.09	29	27	30	33	0.43	0.47	0.54	0.48
111785	LANIER CO HIGH	LAKELAND	-0.06	0.02	0.03	0.22	39	41	47	39	0.44	0.42	0.40	0.48
110695	CLARKSTON HIGH	LARKSTON	-0.03	-0.05	0.06	-0.01	109	98	91	132	0.69	0.64	0.46	0.50
111805	CENTRAL GWINNETT HIGH	LAWRENCEVILLE	0.01	0.01	-0.03	-0.04	101	122	123	150	0.47	0.58	0.47	0.47
111810	LEE CO HIGH	LEESBURG	0.04	0.01	0.12	-0.05	73	57	65	68	0.58	0.56	0.54	0.53
111823	OGELTHORPE CO HIGH	LEXINGTON	0.20	0.01	0.13	0.12	44	41	41	55	0.65	0.79	0.56	0.53
111825	BERKWAR HIGH	LILBURN	-0.03	0.04	0.06	0.02	156	154	153	207	0.48	0.47	0.44	0.43
111826	PARKVIEW HIGH	LILBURN	-0.03	-0.11	-0.07	-0.11	244	235	261	277	0.48	0.48	0.45	0.48
111830	LINCOLN CO HIGH	LINCOLNTON	0.07	-0.01	-0.01	-0.08	46	42	29	25	0.50	0.48	0.54	0.46
111835	PEPPERELL HIGH	LINDALE	0.06	-0.01	0.02	0.06	57	64	52	67	0.42	0.41	0.47	0.46
111836	LITHIA SPRINGS COMP HS	LITHIA SPRINGS	-0.01	-0.01	-0.06	-0.02	114	128	132	156	0.47	0.47	0.40	0.46
111845	LITHONIA HIGH	LITHONIA	0.01	-0.12	-0.08	-0.10	53	65	67	82	0.48	0.62	0.41	0.43
111850	LOGANVILLE HIGH	LOGANVILLE	0.00	-0.02	0.15	-0.02	24	29	28	35	0.48	0.46	0.40	0.48
111860	LOUISVILLE HIGH	LOUISVILLE	-0.09	0.00	0.01	-0.03	46	46	41	38	0.52	0.40	0.37	0.39
111865	LONG CO HIGH	LUDOWICI	0.04	-0.40	-0.30	-0.26	9	7	6	12	0.57	0.28	0.42	0.32
111925	PEBBLEBROOK SR HS	MABLETON	0.08	0.11	0.04	0.02	115	103	127	112	0.42	0.43	0.43	0.44
111945	NORTHEAST COMPREHENSIVE	MACON	0.09	0.04	0.06	0.04	100	91	98	105	0.51	0.56	0.39	0.42
111952	SOUTHWEST HIGH	MACON	0.06	0.03	0.02	-0.00	207	244	225	213	0.42	0.43	0.41	0.42
111965	MORGAN CO HIGH	MADISON	0.08	-0.08	-0.01	-0.05	48	37	55	64	0.50	0.50	0.44	0.49
111975	MANCHESTER HIGH	MANCHESTER	-0.04	-0.10	-0.13	-0.15	63	61	53	69	0.58	0.44	0.47	0.47
111990	MARIETTA HIGH	MARIETTA	-0.03	-0.00	-0.03	-0.05	140	157	162	162	0.49	0.48	0.46	0.42
112005	SPRAYBERRY HIGH	MARIETTA	-0.02	-0.03	-0.06	-0.04	322	343	371	441	0.47	0.46	0.44	0.44
111987	WALTON, GEORGE HS	MARIETTA	-0.05	-0.03	-0.03	-0.06	492	551	564	659	0.48	0.48	0.44	0.44
112010	WHEELER HIGH	MARIETTA	-0.02	-0.03	-0.03	-0.04	362	364	414	449	0.51	0.47	0.43	0.44
112000	OSBORNE ROBERT L HIGH	MARIETTA SMYRNA	0.06	0.00	0.02	0.08	141	161	162	169	0.43	0.53	0.42	0.45
112050	TELFAIR CO HIGH	MCRAE	-0.06	0.05	-0.01	-0.01	50	46	51	45	0.70	0.45	0.40	0.47
112094	BALDWIN HIGH	MILLEDGEVLE	-0.01	0.03	-0.00	0.04	155	154	166	161	0.52	0.47	0.44	0.45
112115	JENKINS CO HIGH	MILLEN	-0.01	0.07	-0.02	0.03	40	46	56	55	0.45	0.45	0.43	0.50
112140	MONROE HIGH	MONROE	-0.02	-0.07	-0.01	0.06	69	67	71	78	0.57	0.61	0.50	0.56
112160	JASPER CO HIGH	MONTICELLO	-0.02	0.04	-0.03	-0.00	21	17	27	38	0.53	0.66	0.52	0.47
112177	MORROW SR HIGH	MORROW	-0.02	0.01	0.01	-0.01	187	206	222	234	0.38	0.38	0.43	0.41
112190	COLQUITT CO HIGH	MOULTRIE	-0.03	-0.01	-0.08	0.01	180	170	169	160	0.45	0.44	0.54	0.49
112200	MONTGOMERY CO HIGH	MOUNT VERNON	-0.12	-0.12	-0.10	-0.08	18	18	18	23	0.41	0.30	0.32	0.37
112215	MOUNT ZION HIGH	MOUNT ZION	0.09	-0.02	0.01	-0.19	26	30	21	23	0.43	0.38	0.37	0.67
112225	BRANTLEY CO HIGH	NAHUNTA	0.13	0.12	0.06	-0.04	29	40	54	51	0.49	0.41	0.45	0.43

RESIDUAL GRADE POINT AVERAGE BY HIGH SCHOOL

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CODE	HIGH SCHOOL	CITY	MEAN FALL 83	MEAN FALL 84	MEAN FALL 85	MEAN FALL 86	N FALL 83	N FALL 84	N FALL 85	N FALL 86	STO. DEV. FALL	STO. DEV. FALL	STO. DEV. FALL	STO. DEV. FALL
112725	MODEL HIGH	ROME	-0.05	0.01	-0.05	-0.07	58	50	44	58	0.55	0.44	0.38	0.39
112808	WEST ROME HIGH	ROME	-0.01	-0.01	-0.07	-0.02	73	73	70	81	0.45	0.41	0.44	0.47
112825	ROSWELL HIGH	ROSWELL	0.01	-0.02	-0.07	-0.05	181	216	231	279	0.44	0.54	0.47	0.51
112853	WASHINGTON COUNTY HS	SANDERSVILLE	-0.01	0.06	0.02	-0.01	78	7	84	69	0.44	0.44	0.42	0.37
112670	BRACH ALFRED E HS	SAVANNAH	0.01	-0.06	-0.08	0.01	97	72	154	145	0.33	0.40	0.43	0.46
112714	JOHNSON SOL C HIGH	SAVANNAH	0.01	-0.01	-0.00	0.08	79	80	121	95	0.48	0.47	0.47	0.51
112710	SAVANNAH HIGH	SAVANNAH	-0.01	-0.04	-0.01	0.11	157	147	244	188	0.53	0.45	0.43	0.43
112715	TOMPKINS, SOPHRONIA M HS	SAVANNAH	0.04	-0.04	-0.06	0.05	31	37	78	87	0.35	0.46	0.44	0.44
112718	WINDSOR FOREST H	SAVANNAH	-0.05	-0.05	-0.06	0.04	124	118	224	225	0.44	0.41	0.41	0.40
112745	CAMPBELL HIGH	SMYRNA	-0.09	-0.09	-0.06	-0.02	203	198	224	267	0.45	0.41	0.47	0.43
112748	WILLS HIGH	SMYRNA	0.04	-0.01	0.04	0.00	95	111	106	106	0.50	0.44	0.36	0.48
112765	SOUTH GWINNETT HIGH	SNELLVILLE	-0.02	-0.07	-0.07	-0.03	149	172	188	199	0.50	0.52	0.44	0.46
112765	SOCIAL CIRCLE HIGH	SOCIAL GIRL	0.11	0.04	0.18	0.15	11	9	13	9	0.39	0.29	0.47	0.30
112770	TREUTLEN HIGH	SOPERTON	0.12	0.04	-0.04	-0.09	23	26	33	20	0.44	0.42	0.47	0.33
112781	EFFINGHAM CO HIGH	SPRINGFIELD	0.18	0.02	-0.06	0.07	57	70	102	102	0.53	0.44	0.43	0.45
112885	CAMDEN CO HIGH	ST MARYS	0.01	0.01	-0.00	-0.06	62	67	88	106	0.44	0.39	0.47	0.46
112800	SCHOLS CO HIGH	STATENVILLE	0.13	-0.03	0.03	0.18	13	20	32	20	0.54	0.44	0.42	0.50
112806	STATESBORO HIGH	STATESBORO	0.02	0.01	0.01	-0.01	272	274	275	274	0.49	0.53	0.46	0.50
112830	STOCKBRIDGE HIGH	STOCKBRIDGE	-0.06	-0.10	0.02	0.07	65	72	64	83	0.40	0.45	0.43	0.42
112838	REDAN HIGH	STONE MOUNTAIN	-0.12	-0.14	-0.04	-0.05	158	160	178	228	0.49	0.61	0.43	0.44
112835	STONE MOUNTAIN HIGH	STONE MOUNTAIN	-0.08	-0.07	0.02	-0.01	180	178	190	201	0.56	0.60	0.41	0.47
112860	CHATTOOGA HIGH	SUMMERVILLE	-0.04	-0.00	-0.03	0.01	49	44	46	51	0.38	0.40	0.39	0.44
110508	NORTH GWINNETT HIGH	SUWANEE	0.11	-0.04	-0.01	-0.07	47	54	58	65	0.58	0.42	0.44	0.48
112803	SCREVEN CO HIGH	SYLVANIA	0.06	0.03	0.07	0.02	82	73	88	89	0.46	0.45	0.44	0.46
112910	WORTH CO HIGH	SYLVESTER	0.06	0.05	0.04	0.04	86	79	86	91	0.50	0.58	0.51	0.51
112920	CENTRAL HIGH	TALBOTTON	0.09	0.11	0.18	0.23	24	25	23	19	0.51	0.43	0.41	0.49
112925	HARALSON CO HIGH	TALLAPOOSA	0.07	0.04	-0.01	-0.00	67	68	75	88	0.45	0.43	0.44	0.45
112967	UPSON CO HIGH	THOMASTON	0.15	0.01	0.08	-0.00	26	37	45	57	0.41	0.46	0.50	0.55
112973	CENTRAL HIGH	THOMASVILLE	0.11	0.19	0.25	0.34	48	43	46	38	0.51	0.49	0.47	0.37
112980	THOMASVILLE HIGH	THOMASVILLE	0.01	-0.04	-0.05	0.02	105	101	107	103	0.53	0.51	0.50	0.41
112995	THOMSON HIGH	THOMSON	-0.06	-0.11	-0.00	0.05	97	96	77	89	0.46	0.47	0.50	0.53
113005	TIFT CO HIGH	TIFTON	-0.00	-0.00	0.01	0.01	286	276	258	245	0.43	0.41	0.42	0.45
110710	RABUN CO HIGH	TIGER	0.15	-0.01	-0.09	-0.17	29	29	27	32	0.47	0.47	0.44	0.52
111155	STEPHENS CO HIGH	TOCCOA	-0.03	0.13	0.11	0.12	84	70	69	66	0.61	0.64	0.46	0.50
113045	TRION HIGH	TRION	-0.05	-0.01	0.02	0.19	21	19	23	25	0.58	0.49	0.40	0.54
113050	TUCKER HIGH	TUCKER	0.01	-0.05	-0.03	0.00	243	235	222	249	0.53	0.54	0.49	0.48
113060	EMANUEL CO INSTITUTE	TWIN CITY	-0.17	-0.11	0.01	0.10	25	18	24	28	0.33	0.45	0.38	0.40
113080	LOWDOES SR HIGH	VALDOSTA	0.01	-0.01	0.02	0.09	311	296	344	337	0.42	0.41	0.41	0.46
113095	VALDOSTA HIGH	VALDOSTA	-0.06	-0.04	-0.03	0.03	454	434	441	454	0.44	0.41	0.42	0.39
113105	VIDALIA HIGH	VIDALIA	0.20	0.17	0.07	0.05	45	53	70	79	0.59	0.45	0.49	0.43
113130	VILLA RICA HIGH	VILLA RICA	0.08	0.08	0.15	0.06	82	77	89	72	0.45	0.49	0.46	0.55
113159	NORTHSIDE HIGH	WARNER RBNS	-0.03	0.01	0.04	0.01	271	304	286	272	0.48	0.49	0.46	0.45
113160	WARNER ROBINS SR HIGH	WARNER RBNS	0.01	0.02	0.03	0.01	401	395	377	341	0.47	0.51	0.45	0.47
113170	WARREN CO HIGH	WARRENTON	0.21	0.23	0.04	0.20	19	21	25	22	0.49	0.46	0.61	0.35
113190	OCONEE CO HIGH	WATKINSVILLE	0.06	0.09	0.03	-0.04	139	150	151	166	0.59	0.56	0.45	0.57
113215	WARE COUNTY SR HIGH	WAYCROSS	-0.01	-0.01	0.04	0.01	102	106	94	100	0.42	0.39	0.40	0.42
113220	WAYCROSS HIGH	WAYCROSS	-0.03	-0.04	-0.05	0.09	87	88	95	98	0.39	0.37	0.38	0.40
113275	WINDER BARRON HIGH	WINDER	0.04	0.08	0.08	0.05	83	88	100	104	0.65	0.53	0.50	0.50
113300	WOODBURY HIGH	WOODBURY	-0.09	-0.04	-0.12	-0.01	22	16	17	17	0.44	0.33	0.38	0.37
113306	ETOWAH HIGH	WOODSTOCK	0.05	0.07	-0.00	0.04	62	87	116	133	0.48	0.46	0.40	0.42
113310	WRENS HIGH	WRENS	-0.03	0.08	-0.02	0.05	34	28	29	30	0.40	0.59	0.48	0.45
113320	JOHNSON CO HIGH	WRIGHTSVILLE	0.11	0.16	0.08	0.03	39	47	53	43	0.35	0.55	0.48	0.39
113335	PIKE CO HIGH	ZEBULON	-0.07	-0.02	-0.07	-0.01	24	33	41	38	0.38	0.47	0.48	0.46

- WRN RBNS