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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.

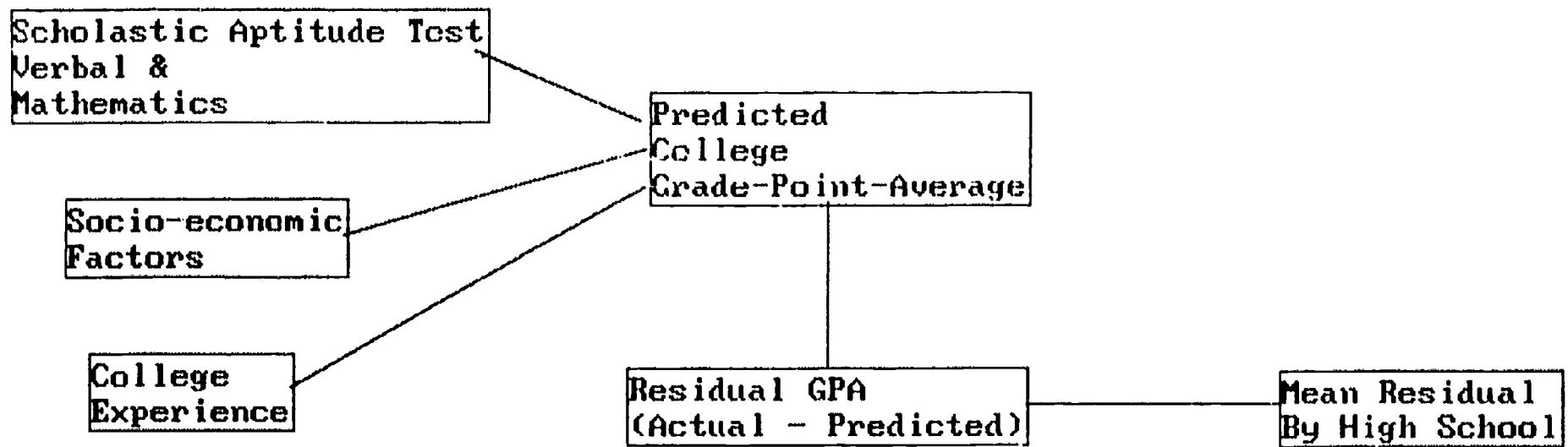
Substantive and methodological implications are supported by this paper. Finding a linkage between college level measures of effectiveness and high school level measures of effectiveness can be an important substantive contribution to the assessment field.

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.

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Figure 1. Assessment Model Using College GPA



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MULTIPLE REGRESSIONS BY INSTITUTION

Table with 17 columns: 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. Rows include GA INSTITUTE OF TECH, SOUTHERN COL OF TECH, GA ST U, MEDICAL COL OF GA, ALBANY ST COL, ARMSTRONG ST COL, AUGUSTA COL, COLUMBUS COL, FORT VALLEY ST COL, GA COL.

MULTIPLE REGRESSIONS BY INSTITUTION

Table with 17 columns: 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. Rows include GA COL, GA SOUTHERN COL, GA SOUTHWESTERN COL, NORTH GA COL, SAVANNAH ST COL, VALOOSTA ST COL, WEST GA COL, ABRAHAM BALDWIN COL, BRUNSWICK COL, CLAYTON ST COL, DALTON COL, FLOYD COL, GAINSVILLE COL, KENNESAW ST COL.



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	0.000156	-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

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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	0.46	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	0.48	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