Spending For the Future: Exploring Special Education Spending and Student Outcomes

Thomas Leonhardt

The College of New Jersey

Dr. Naples

Abstract:

This study explores the relationship between special education students' post-secondary school success and school district education spending. While no statistical significance was observed based upon per pupil spending, several other conclusions can be drawn from the results. New Jersey schools have lower student-to-teacher ratio and spend more per pupil than both Washington and Michigan. Additionally, a link between proper allocation of school funds and special education outcomes is present. While no linkages between spending and positive special education outcomes, the variations observed in state educational systems are apparent.

I. Introduction

This study aims to show the relationship between special education student post-secondary outcomes and school district expenditure per pupil. Special education in the American school system has been largely viewed as a major reason behind rising public education costs in the past 30 years. A faction of the American population believes that the additional support special education students are receiving is not only burdening the budget of public schools, but is also hindering the students receiving aid from fully developing within the curriculum. However, many special education students do benefit from the additional support they receive during their years in high school, and the skills they acquire from special education programs prepare them for their post-secondary school lives.

Due to its vast size and diversification of local economies, the income level and schooling expenditure budget in various parts of the United States varies, and differences in special education programs exist as well. Beginning in the 2014-2015 school year, the Individuals with Disabilities Education Act (IDEA; 2004) will require states to conduct a survey of its special education students 6 months after graduation to ask whether they have either found employment or are enrolled in a full-time collegiate level education program. This indicator, known as "Indicator 14," can be used to estimate the success of special education students after completion of high school.

This study will test the hypothesis that higher levels of expenditure per pupil in public schools will result in more students reporting positive outcomes 6 months past graduation. The school year 2012-2013 results for student outcomes will be used in this study. While the IDEA does not require schools to publish outcome results until the 2014-2015 school year, a select number of schools have recorded and published results for the school year used in this study.

Additionally, this work includes a literature review on the topic of special education expenditure in public schools as well as variations amongst the classification of special education students in different racial groups and geographic areas.

II. Literature Review

Research in the area of special education has been plentiful in the past two decades. Most studies have focused on the rising cost of education, with special education receiving additional scrutiny. Hanushek (1996) shows that simply evaluating investment in school programs cannot produce significant measures of quality for that school system. The amount of money or other assets afforded to schools is not a predictor of student success. These resources can be misallocated in such a way that students do not receive added benefit from having those funds available to them. The amount of per pupil spending in the US is rising 3.5% per year, but no significant performance increases are concurrent with this statistic.

In a follow-up piece, Hanushek and Rivkin (1997), attempt to provide a reason for the increases in educational spending throughout the years without significant increases in student performance. The authors demonstrate that while the overall student population has fallen in recent years, the number of students placed into special education has increased. Therefore, due to the higher cost of special education, it is not surprising that overall per-pupil education cost, and the average instructor and staff salaries, have increased. The authors also mention that the topic of special education has been primarily discussed in terms of cost, with many policy makers only focusing on special education as the source of rising schooling cost rather than an aide to students with disabilities. According to the authors, the actual positive outcomes and effectiveness of special education is rarely mentioned in discussions promoting the advancement of special education.

Through this work, I hope to show a positive correlation between spending per-pupil and special education outcomes in public schools in the United States. As Hanushek and Rivkin stated in their 1997 work, "although the cost picture is reasonably clear, virtually no discussion of outcomes from special education programs or of the relative balance between special and regular education programs has taken place." Furthermore, my work will attempt to show that while special education may be one of the main causes of increasing public education costs, these costs cannot be eliminated based on a "budget-constriction" mindset. Special education, when properly designed and executed, can lead to extremely positive results for students with disabilities.

An example of this utility can be found in the work of Hanushek, Kain, and Rivkin (2002). The authors researched the effect of enrolling special education students in programs designed to assist with their specific disabilities in the Texas schooling system. Many Texan students with disabilities at this time were not enrolled in the educational program that corresponded with their disability as Texas school law pressured public schools to "mainstream" their special needs students into regular classes, emphasizing the notion that students should be educated in the least restrictive environment as possible. The authors' findings demonstrate that this practice not only hinders the success of students with disabilities, but stifles conventional students as well. The authors found that the success of the overall student population is positively correlated with the number of students with disabilities being correctly assigned to the level of assistance they need. Also, after being enrolled in special education for one year, students with disabilities showed a 3-4% increase in standardized math scores above previous years.

The Hanushek, Kain, and Rivkin (2002) paper demonstrates that properly executed special education can positively affect the test scores and success rate of all students, not

necessarily just students involved in special education. Therefore, while special education can be costly, it should not be viewed as a burden on the education budget, but as a necessary cost to allow for the highest levels of success for students. However, it is important that special education be executed properly, and that students receive the correct amount of assistance based on their needs.

In accordance with the Individuals with Disabilities Education Act (IDEA), any student who meets the federal or state requirements for receiving special education has an Individualized Education Program (IEP) developed specifically for their needs (US Department of Education, 2006). It is important that each IEP fits the student's needs perfectly to allow that specific student the greatest chance of success post-graduation, and to prevent the school district from overspending on additional assistance the child does not require. The decrease in the amount of funding provided to a school district can affect the way schools categorize students into special education, and can consequently cause misallocation of IEP assistance (Battisti, Friesen, and Hickey, 2012).

Research from British Columbia, Canada revealed that the elimination of supplemental grants for special education programs result in fewer students with "moderate behavior disorders" or "mild mental illness" being placed into special education programs. To be clear, the identification of their disorders was not affected. Students with these "moderate" disorders were still medically identified to have disabilities. After the elimination of additional grants, however, the number of these students placed into special education programs to assist their needs was reduced. More severe disorder categorizations did not see any change in designation after the elimination of funding **(**Battisti, Friesen, and Hickey, 2012**).** These findings demonstrate that the

amount of funding available to a school district can limit the effectiveness of special education programs for moderately or mildly disabled students.

Other research has shown that changes in funding can cause variations in categorization of student disabilities. Research by Wells, Sandefur & Hogan (2003) uses the National Educational Longitudinal Study of 1988 and the National Longitudinal Transition Study of Special Education Students, 1987-1991, to study outcomes for special education students. Not surprisingly, the authors discovered that the type of disability that each student suffers from affects the rate of success each person has after schooling. The authors used the data found in both of these reports to categorize post-graduates into 5 categories: single no education, single some education, single working, has own family not working, and has own family working. Students with higher-level disabilities were more likely to be single with no job, and completely dependent on their families for survival. Wells, Sandefur and Hogan's research shows that a student's level of disability and his or her classification can have significant effect on his or her success in post-graduate life, and that correct classification can be crucial in creating the best opportunity for students with special needs.

The relationship between ethnic background, and socioeconomic standing will also play a substantial role in the outcome of this study. It will be important to control for outside factors that could affect student success other than the education they receive. Studies published within the past few years show that ethnic background has an effect on special education placement. A study conducted by Conger, Schwartz and Stiefel (2007) investigating the characteristics of immigrant students in New York City schools shows a significantly smaller number of immigrant students enroll in both part-time and full-time special education. Even after controls for language barriers and other environmental factors, the percentage of immigrant students

enrolled in special education was less than that of the national average. The authors hypothesize this is the result of immigrant parents not willing to allow their children to be enrolled in special education, but there is no empirical evidence supporting this. Many cultural and environmental factors can affect the enrollment numbers for different areas of the country, and these must be controlled for in my model.

Wagner and Blackorby (1996) investigate the reason why African American students are over-represented in the special education classroom compared to the national average. The African American population in schools represents around 17% of the total, but also make up 32% of students with a mild mental disability, 24% of students with serious emotional disturbance, and 18% of all learning disabilities. These statistics are alarming and suggest that there could be a factor outside of the schooling system for why black students are overrepresented in the special education classroom. Both Conger, Schwartz and Stiefel (2007) and Wagner and Blackorby (1996) demonstrate that a student's upbringing can affect their enrollment in special education curriculum. Therefore, any new study conducted on the topic of special education enrollment must include variables to control for any cultural bias toward a certain group of people or toward special education as a whole.

Previous literature on the topic of special education has revealed three main themes that I must incorporate into my research going forward. First, special education cannot be viewed as an unnecessary cost. Research has proven that if students in special education are correctly placed, it benefits all students in the school, not only those in special education. While many policymakers view special education as one of the main causes of rising public education prices, the additional benefit it provides schools cannot be forgotten. Additionally, changes in funding can have a significant effect on the categorization of students in special education. The amount

of assistance a student receives in their IEP must being correct to ensure special education programs are cost-efficient and the student receives the highest probability for success in their postgraduate career. Lastly, cultural and socioeconomic factors can affect a student's enrollment in special education. It will be important to control for these outside factors in any future research done on the topic of special education funding. This study takes these three key factors into consideration when constructing a model and completing testing.

III. Theoretical Model Development and Specification

A. Model

The predictive regression model used in this study depends on a variety of demographic variables, district spending and staffing practices, and economic conditions. Spending per pupil is the central explanatory variable.

(*Variable definitions, mean, and standard deviations found in Table 1)*

[Insert Table 1]

B. Outcome Success Rate

The outcome variable is the percent of students who have either been granted full-time collegiate status or are employed 6 months after high school graduation. This data was collected by school districts surveying the population of recently graduated students with an IEP in high school. The students used in this study graduated in the spring of 2013 and were surveyed in the fall of 2013. The survey asks the students to record if they have enrolled in a full-time collegiate program or are employed in the workforce. The natural log of the percentage will be used to predict of percentage change in the outcome variable.

C. Spending per Pupil

The main explanatory variable in this model is spending per student enrolled in the district. This variable as distinguished as the main predictor, drawing from one of the conclusions reached in the literature review. Special education should not be viewed from a cost perspective alone; the benefits provided to student enrolled in special education should be a key factor when considering restricting special education spending. Additional spending should provide districts with more means to improve the special education program. Therefore, spending per pupil and outcome should be positively correlated.

D. Racial/Ethnic Variables

Based upon the literature review, the racial and ethnic breakdown of a school district can have effects on the categorization of special education students. Therefore, several variables will be included in the model to control for differences in the racial breakdown between districts. The base group will be white non-Hispanic students. Variables representing the percentage of black, Asian, mixed race, and other race students will be included in the model. Additionally, a variable will be included to represent the percentage of students who identify as Hispanic, in addition to their racial background.

E. Student-to-Teacher Ratio

Included in this model are also several characteristics to help control for allocation of school spending. Student-to-teacher ratio is calculated by dividing the total number of students by the number of teachers in the school district. This variable is important because it can help predict how much individual attention a typical student in the district receives. A lower student-to-teacher ratio represents smaller class sizes, which then result in more one-on-one time spent with any given child. A negative correlation should be expected as a lower student to teacher ratio will result in higher percentage of successful outcomes. However, a positive correlation in

this category could be the result of a large proportion of children with severe disabilities and associated mandated paraprofessional aides. The classroom size for a high-functioning child with autism will not be the same as a child with severe physical disabilities.

F. Spending per Pupil on Student Support Services

Spending per pupil on student support services such as guidance counselors and additional classrooms support will also be considered in the model. Additional emotional and educational support services will provide students with a better opportunity to master educational topics learned in class. Guidance counselor support can help students become more comfortable in a school setting. Also, supplementary classroom support will give students access to more individual attention from instructors or aides placed within the classroom. A positive correlation is expected.

G. Median Income of District

Median income of the school district will be included in model to help predict the emphasis on education in a child's household. The assumption made in using median income as a predictor of student success is that parent with high levels of education will place more of an emphasis on their child's education. The greater amount of education a person receives is positively correlated to the wages they will earn during their lifetime. Therefore, a district with a high median income level is likely to have a large population of highly educated parents, and these people will value education at greater level than other who did not receive the same level of education. Based on this logic, a positive correlation between median income and outcome is expected.

H. Percent of Spending Funded by Local Population

The percentage of school spending funded by local taxes is included in the model adopting a similar assumption used for including median income. The model assumes that a district that implements a taxation plan to fund a major portion of the schooling budget is likely to place a higher value on education than a district that is funded by state or federal dollars. If a district allows the schools to be in large part funded by its own money, then education must be considered important to the people of that community. Due to this assumption, a positive correlation should be expected between this variable and outcomes.

I. Unemployment Rate of District at Time of Graduation

Unemployment levels of the various districts at the time of the measured student's graduation will be included in the model. The unemployment rates used were each district's county unemployment rate for July 2013. The July rate was used because 2013 high school graduates who entered the labor market would have been facing those employment conditions when searching for available work. Higher levels of unemployment for a district's county would most likely result in less graduates finding employment at the time the outcome survey was taken. Therefore, a negative correlation is expected.

J. Dummy Variable Representing States.

Two dummy variables are included in the model to differentiate between districts from New Jersey, Michigan, and Washington state. An observation "1" in the Michigan variable denotes a district located in the state of Michigan. An observation "1" in the Washington variable denotes a district located in the state of Washington. New Jersey will be used as the base state , therefore a "0' in both the Michigan and Washington variable will represent a New Jerseyan school district.

The econometric model with hypothesized signs is shown here:

Ln(Outcome) = B0 + B1(SpendPupil) + B2(AfricanAmerican) + B3(Asian) + B4(Other) + B5(MixedRace) + B6(Hispanic) - B7(StudentTeacher) + B8(SupportSpend) + B9(MedianIncome) + B10 (LocalSpending) + B11(Unemployment) + B12(Michiagn) +B13(Washington) + Є,

where the errors, Є, are assumed to be random normal.

IV. Econometric Results:

Initial Regression

An initial regression of the 59 observations for the 13 explanatory variables on the outcome measure produced results that evidenced heteroskedasticity. After performing a Breusch–Pagan test and again running a regression with robust estimates, the new model yielded an R-squared variable of .4137. The F-statistic for the model was 5.82, which is significant at the .01% level (*see Table 2*).These results demonstrating the overall explanatory power of the model are relatively strong; however, individual variable significance and signs do not follow the logic behind the model.

[Insert Table 2]

The MixedRace, Hispanic, StudentTeach, Michigan, and Washington variables are all significant at the 5% level (*See Table 2*). However, Student-to-teacher ratio is positively correlated with the successful outcomes, suggesting that a larger class size will result in better outcomes for special education students. This is surprising as the model assumes that smaller class sizes would result in more individual attention from instructors and consequently higher success rates. Several insights can be drawn from the significance of the MixedRace, Hispanic, Michigan, and Washington variables. The positive correlation between MixedRace and

LogOutcome as well Hispanic and LogOutcome is interesting because it suggests that higher levels of Hispanic and Mixed race students results in a higher success rate for students of that district. Additionally, the negative significance of both dummy variables shows that New Jersey schools have greater levels of success in its special education population. When comparing between different states, especially in different geographic areas, a variation in outcomes can be expected. While this is not surprising, it is worth noting that New Jersey students have higher levels of success.

The main predictor variable, spending per pupil, as well as variables controlling for parental emphasis on education and allocation of school funds, were not significant (*See Table 2*). Additionally the coefficient values for both SupportSpend and LocalSpend are negative, suggesting that more money spent on student support services and school expenses funded by the local community hinder special education student success after secondary education. These results contradict the original hypothesis and suggest that greater amounts of spending are actually not correlated with post-secondary success. This particular results mirror that of Hanushek (1996). However, even with allocation and racial breakdown variables to control for factors outside direct spending (as Hanushek (1996) suggested should be included), spending per pupil is still not a significant predictor of special education student success.

The original hypothesis predicted that as spending per pupil increased, the percentage of successful outcomes would increase as well. However, this model did not show significant evidence for this to be true. Additionally, several variables in the model were correlated to outcome in the opposite direction than what had been expected.

Regression with Factor Analysis Variables

Following the initial regression a correlation matrix was produced to investigate correlation amongst the independent variables in the model (see Table 3). As expected, the two variables representing proper allocation of school spending, Student/Teacher ratio and expenditure on student support services showed a strong negative correlation of -.81. Similarly, the two variables representing emphasis on education in the home, median income of the school district and percentage of school expenditure finance by local community dollars, showed a strong positive correlation of .72.

[Insert Table 3]

In an attempt to diminish the redundancy of these strongly correlated variable groups, I performed an exploratory factor analysis on the two groups of variables (see Table 4). After both factor analyses were performed, latent variables, or factors, were created as a simplification of the two sets of original variables. The new variable, which combined MedianIncome and LocalSpend, and represents the emphasis on education in the home was named HomeValueFactor. Alternatively, the new variable which combined SupportSpend and StudentTeacher, and represents the proper allocation of school funds was named AllocationFactor.

[Insert Table 4]

After these new variables had been produced, another regression was run using the new factors in place of the variables MedianIncome, Local Spend, SupportSpend, and StudentTeacher. After using robust variables to correct for heteroskedasticity, the model produced an R-squared value of .3915, which is a decrease from the original model. The F-statistic is 7.07, which again is significant at the .01% level (see Table 5). These results are similar to the original model, but are not an improvement.

Further investigation into the independent variables significance in the regression using factors model reveals similar results to that of the original model. The main explanatory variable, spending per pupil, does not have a significant t-statistic (see table 5). This result mirrors the results of the original regression model.

[Insert Table 5]

The dummy variable representing Washington is again significant at the .1% level, however the Michigan dummy variable no longer shows significance (see Table 5). The elimination of some of the redundancies created by including correlated variables explaining the same logic has shown that some of the variation in Michigan and New Jersey special education outcomes can be explained by the variations in either the emphasis on education or allocation of school funds.

The factor variable including StudentTeach is significant at the 1% level, but once again the coefficient is negative when it would be expected to be positive (see Table 5). The sign of this factor variable does demonstrate that outcomes of special education are related to the allocation of funds as the conclusions from the literature review stated. This factor variable's positive relationship with Outcome could be based on the differing disabilities found in each classroom. School districts with large numbers of children with severe disabilities would need much smaller class sizes to meet the needs of these children, while school districts with large numbers of slightly impaired children could actually be successful without a small class size . This fact could explain the positive relationship between AllocationFactor and Outcome: it is picking up the intensity of child disability rather than schools' discretionary choices to prioritize the needs of children in special education.

The regression with factor analysis variables largely produced similar results to that of the original regression, but several new conclusions can be drawn from the added results. While both regression models had confusing coefficient signs for allocation variables, a significant relationship can be observed and conclusions can be drawn from these results. Additionally, the racial control variables lost their significance in the factor analysis model. This could suggest that some of the redundancies created by including highly correlated allocation and education emphasis variables could skew results to show racial significance.

V. Conclusion and Suggestions for Further Study

While no significant outcomes were shown for the main predictor variable, spending per pupil, other conclusions can be drawn from the two regression models. Although the coefficient for StudentTeach in the original regression and AllocationFactor in the factor analysis regression, both models showed significance at the 1% level. These results should be further investigated by future work because while the model tested in this work expected a different coefficient sign, clearly a relationship between class size, allocation of school funds, and special education success rates does exist. Future work should explore different aspects of school expenditure allocation to grasp an understanding of the confusing significance shown in this work.

Additionally, the differences between state outcomes showed significance in both models tested in this work. The dummy variable representing Michigan was significant at the 10% level in the first regression model tested, but after eliminating some of the redundancies between variables through factor analysis the variable no longer showed this relationship with the outcome variable. The dummy variable representing Washington showed .1% significance in both models tested. The conflicting results for the Michigan variable and continued significance

of the Washington variable demonstrate that differences in special education outcomes exist, and this topic deserves future study.

Finally, as previously mentioned, this study used data collected from the 2012-2013 school year. Not all districts were required to report special education outcome results as yet, therefore only a limited amount of data was available to conduct this study. In future years, as the survey of special education students' outcomes becomes a requirement for all districts in the country, a larger sample size can be obtained and a broader range of country-wide data can be used. The reasoning behind the inclusion of variables and the construction of the regression model for this work were solid, but the limitations of the available data could have skewed the results.

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Table 1

Variable Names, Definitions, Sources, and Descriptive Statistics

Variable	Definition	Source	Mean	Standard Deviation
Outcome	Percentage of the school district's special education students who are employed or enrolled in a college/technical degree program.	Washington State Special Education Performance Data New Jersey Department of Special Education Michigan Department of Education	0.7710	0.1753
SpendPupil	Spending per Pupil. This will be used as my main explanatory variable. I feel the greater this number is, the more successful students in special education will be in a post-high school setting.	MI School Data New Jersey Department of Education Washington K-12 Data and Reports	14034.03	4013.66
AfricanAmerican	This variable will represent the percentile of the represented district that identifies as African American.	National Center for Education Statistics	0.0738	0.1076
Asian	This variable will represent the percentile of the represented district that identifies as Asian.	National Center for Education Statistics	0.0385	0.0453
Other	This variable will represent the percentile of the represented district that identifies with a background other than black, Asian, Hispanic, and also identifies as only one race.	National Center for Education Statistics	0.0571	0.1032
Mixed Race	This variable will represent the percentile of the represented district that identifies with more than one race.	National Center for Education Statistics	0.0430	0.0522
Hispanic	This variable will represent the percentile of the represented district that identifies as Hispanic (non-white).	National Center for Education Statistics	0.1066	0.1417
MedIncome	Median income of the observed school distrtcit	National Center for Education Statistics	60873.25	24063.15

LocalSpend	This variable will represent the percentage of school expenditure financed by local tax dollars	National Center for Education Statistics	0.4710	0.2519
StudTeach	This will measure student to teacher ratio of observed district.	Washington K-12 Data and Reports MI School Data New Jersey Department of Education	15.94	3.77
SupportSpend	This variable will measure the amount of spending directly spent on student support services per pupil.	National Center for Education Statistics	1417.31	731.62
Washington	Dummy variable representing a district from Washington state.			
Michigan	Dummy variable representing a district from Michigan state.			

Table 2

Regression Results, Initial Model

LogOutcome	Coef.	Std. Err.	t	
SpendPupil	9.32E-06	0.0000118	0.79	Number of obs = 58
AfricanAmerican	-0.0492502	0.2460928	-0.2	F(12, 45) = 5.82
Asian	0.1023704	0.54975	0.19	Prob > F = 0.0000
MixedRace	1.087761	0.4119194	2.64***	R-squared = 0.4137
Hispanic	0.3849086	0.1879914	2.05**	Adj R-squared = 0.2574
StudentTeach	0.054233	0.0240589	2.25***	
SupportSpend	-0.0000766	0.0000747	-1.03	
MedIncome	1.78E-06	3.13E-06	0.57	
LocalSpending	-0.208497	0.4540954	-0.46	
Unemployment	-4.745242	3.275557	-1.45	
Michigan	-0.55051	0.2596703	-2.12***	
Washington	-0.8701668	0.27691	-3.14***	
_cons	-0.4663269	0.4167958	-1.12	

Table 3

Simple Correlation Coefficients

	Outcome	Spen~il	White	Afr~n	Asian	Hisp~c	Other	Mix~e	Medl~e	Stu~ch	Sup~d	Loc~g	Was~n	Mic~n	Unem~t
Outcome	1														
Spend~il	0.22	1													
White	0	-0.21	1												
Africa~n	0.03	0.36	-0.7	1											
Asian	0.21	0.2	-0.31	0.12	1										
Hispanic	0.04	-0.03	-0.66	0.1	0.06	1									
Other	-0.08	-0.17	-0.61	0.03	-0.04	0.95	1								
MixedRace	-0.01	-0.11	-0.3	0.1	0.02	0.52	0.37	1							
MedInc~e	0.39	0.3	0.06	-0.09	0.42	-0.08	-0.17	-0.15	1						
Studen~ch	-0.36	-0.75	0.25	-0.36	-0.32	-0.09	0.09	0.1	-0.48	1					
Suppo~nd	0.24	0.83	-0.24	0.35	0.38	0.05	-0.11	-0.06	0.5	-0.81	1				
LocalS~g	0.43	0.57	0.09	0.01	0.44	-0.22	-0.35	-0.19	0.72	-0.62	0.62	1			
Washi~on	-0.45	-0.39	-0.18	-0.18	-0.09	0.34	0.43	0.43	-0.27	0.6	-0.34	-0.46	1		
Michigan	-0.05	-0.43	0.39	-0.13	-0.38	-0.34	-0.23	-0.24	-0.43	0.43	-0.57	-0.4	-0.38	1	
Unemp~nt	-0.1449	0.1192	-0.02	0.179	-0.1	0.071	0.06	-0.06	-0.268	-0.1	-0.02	-0.114	-0.148	0.054	1

Table 4

Results of Factor Analyses

Factor	Eigenvalue	Difference	Proportion	Cumulative	Variable	Factor1	Uniqueness
Factor 1	1.23917	1.44063	1.1941	1.1941	MedIncome	0.7871	0.3804
Factor 2	-0.20146		-0.1941	1	LocalSoendin	0.7871	0.3804
Factor	Eigenvalue	Difference	Proportion	Cumulative	Variable	Factor1	Uniqueness
Factor 1	1.47194	1.62446	1.1156	1.1156	StudentTeach	0.8579	0.264
Factor 2	-0.15251		-0.1156	1	SupportSpend	-0.8579	0.264

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Table 5

Regression Results with Factors

LogOutcome	Coef.	Std. Err.	t	Number of obs = 58
				F(11, 46) = 7.07
SpendPupil	6.42E-06	0.0000129	0.5	Prob > F = 0.0000
AfricanAmerican	0.0156384	0.2632221	0.06	R-squared = 0.3915
Asian	0.0638426	0.4637746	0.14	Adj R-squared = 0.2460
Other	-0.870788	1.067525	-0.82	
MixedRace	0.4733485	0.7281024	0.65	
Hispanic	1.041074	0.8927281	1.17	
HomeValueFactor	0.0330875	0.0635195	0.52	
AllocationFactor	-0.2058205	0.0915272	-2.25**	
Unemployment	-4.853326	3.649946	-1.33	
Washington	-0.598276	0.2196834	-2.72***	
Michigan	-0.3665804	0.2275932	-1.61	
_cons	0.2267861	0.4470193	0.51	