June 2017

Economic Determinant Analysis of Student Academic Performance in Mississippi Public Schools

Debra Monroe-Lax
Jackson State University

Jae-Young Ko
Jackson State University

Economic Determinant Analysis of Student Academic Performance in Mississippi Public Schools

Debra Monroe-Lax
Jae-Young Ko
Jackson State University

The purpose of this study was to assess the relationship between economic determinants and student academic performance indicators of public school students in the State of Mississippi. It was hypothesized that public school districts with higher economic security leads to higher academic achievement. Data for the study were obtained through the Mississippi Department of Education Children's First Annual Report for school year 2012 -2013, and the Annie E. Casey Foundation Kids Count Datacenter for 2013. Using bivariate analyses and multiple regression models, the results revealed that students' academic performance indicators were statistically significantly with weak to moderate effects for each of the economic factors with the exception of unemployment rate in the bivariate analysis, and unemployment rate and median household income in the multiple regression model which were found to be nonsignificant. Further, the multiple regression analyses indicated that poverty in the school district was the best predictor in explaining the differences in student performance as an educational outcome. This study suggests that while student performance is linked to the school learning environment, residing in low-income families within high poverty school districts with a dwindling property tax-base is just as important when explaining the differences in student performance.

$\mathbf{T}$he debate on what constitutes student achievement among K-12 public schools in the nation has led to numerous educational reform efforts, but far fewer solutions. Academic literature which seeks to explain why some public school systems in the United States excel, while others, seemingly despite best efforts, continue to fail, has been the foremost focus for policy reform. More often than not, economic research examining school expenditures has rigorously sought solutions to explain this phenomenon (Hanushek 1986; Hedges, Laine, and Greenwald 1994). Spending more dollars to boost student academic achievement has been viewed as the panacea to improving school performance—but, how such resources should be adequately allocated have not been vetted nearly to that extent (Hanushek 1989).

Like most other states, Mississippi state lawmakers are challenged with fully funding K-12 education which requires improving low student achievement and inequity among school districts (Putnam & Cabrera 2015). However, reform initiatives that have been created in favor of or against adequate education funding have had a profound impact on student

academic performance, as represented by standardized tests, graduation rates, and dropout rates. For instance, the national average composite American College Testing (ACT) score for the 2012-2013 school year was 20.7 compared to 18.9 in Mississippi, which ranked 49th among states. The national high school graduation rate was 81% as compared to 76% in Mississippi, which ranked 43rd among states. The national high school dropout rate was 6.8% whereas in Mississippi it was 13.9 % (U.S. Census Bureau 2015; National Center for Education Statistics 2015; and National and State ACT Profile Report 2015).

Several causes have been vetted to explain the differences in student academic achievement. Two of the most common causes have been per pupil expenditures (Greenwald et al.1996) and family socioeconomic background (Coleman et al. 1966; Hanushek 1989). The question as to which is the better predictor or has the greater impact on student achievement fuels debates until the present day. For instance, when we consider per-pupil expenditures, the national average for the 2012-2013 school year was $10,700, whereas in Mississippi, it was $8,130 which ranked the fifth lowest among states. During that same school year, Utah had the lowest per-pupil expenditures ($6,555; ACT score 20.8; graduation rate 83%), while New York had the highest ($19,818; ACT score 23.1; graduation rate 85%). The controversy on what constitutes adequate per pupil expenditure to enhance student performance is in no way apparent in this occurrence, considering student achievement in Utah was higher than in the U.S. and in Mississippi despite lower per-pupil expenditures levels (U.S. Census Bureau 2015; National Center for Education Statistics 2015; National and State ACT Profile Report 2015).

The focus on family socioeconomic background as an important input in explaining the differences in student performance allow lawmakers to circumvent educational reform efforts to a certain degree (Coleman et al. 1966; Hanushek 1989). Nonetheless, when students' from low-income families residing in poverty school districts have low academic achievement scores, lawmakers must address reform efforts to ensure disadvantaged students' have an equal educational opportunity (Sirin 2005). For instance, when we consider family socioeconomic factors in 2013, the median household income in Mississippi was $40,194, which ranked the lowest in the nation and was nearly $12,000 lesser than the national average of $51,847. The average unemployment rate was 8.7%, which ranked the fourth highest in the U.S., while the national figure was 7.4% for individuals who were jobless or looking for a job.

Overall, Mississippi had the highest poverty rate (24%), and children living in poverty accounted for 34% of the population, whereas nationally it was 22%. Last, children by household head's educational attainment ranked the lowest and accounted for 19% of individuals with a bachelor's degree, while nationally it was 13% (U.S. Census Bureau 2015; Kids Count Datacenter 2015).

With ongoing changes in public education reform, the challenge of creating educational policies that are inclusive and adequately funded has been a critical problem, not only for lawmakers at the local, state, and federal level, but also for public school teachers and officials. However, there remains a lack of empirical evidence to determine which criteria are the best predictors of student achievement (Hanushek 1986).

This study builds on the literature by using an economic model to analyze educational production functions of school resources on students' educational outcomes. To that end, this study examines four primary questions:

Research Question 1:
> Is there a relationship between student achievement and school funding?
> H_1.Higher per pupil expenditures lead to higher student achievement (achievement indicators: ACT score, graduation rate, and dropout rate).

Research Question 2:
> Do families' median household incomes explain the differences in student achievement?
> H_2:Students from families with higher median household income achieve better in school (achievement indicators: ACT score, graduation rate, and dropout rate).

Research Question 3:
> Does the location of a school district within a community impact student achievement?
> H_3.Higher-poverty school districts lead to lower student achievement (achievement indicators: ACT score, graduation rate, and dropout rate).

Research Question 4:
> Does the unemployment rate within a school district impact student achievement?
> H_4.Higher unemployment rates lead to lower student achievement (achievement indicators: ACT score, graduation rate, and dropout rate).

Review of Literature

The commonality shared among conservative and liberal lawmakers has been the ability to agree that funding for public schools should, at a minimum, provide the basic materials essential to learning in a nurturing environment that fosters academic excellence and growth. On the other hand, the question of whether the level of funding for schools enhances student achievement is not quite as agreeable. The discord centers on the issue of inequity in public school funding and its legitimacy, compared to the role of students' families' socioeconomic status and how it contributes to student performance. This review examines research that assesses the impact that each economic factor has on improving student academic achievement.

Per Pupil Expenditure on Student Academic Achievement

Previous research on the effectiveness of school expenditures on students' educational outcomes has been controversial among scholars in the field. This has been demonstrated in a study conducted by economist Hanushek (1986), whose findings simply revealed that across studies school expenditures and student performance neither exhibited a strong or systematic relationship among the variables. However, Greenwald et al. (1996) analyzed similar data to that of Hanushek (1986) and discovered that a systematic positive relationship between school expenditures and student performance did in fact exist, and that the effect size was of sufficient importance.

Assessing the impact of per pupil expenditures on student performance with standardized tests as indicators has long been considered the foremost measure of the effect of educational inputs on student performance. To a lesser extent, outcomes have been graduation rates, dropout rates, and college continuation (Hanushek 1986). In a study utilizing Scholastic Assessment Test (SAT) scores to measure school achievement findings, Ram (2004) concluded that per pupil expenditure was positive and statistically significant. On the other hand, a more recent study (Bibb & McNeal 2012) assessing the relationship between per pupil expenditures and student achievement, as measured by ACT and TCAP scores in public

school systems in Tennessee, resulted in findings that were statistically non-significant, which implied that increased per pupil expenditures do not equate to improved student performance.

The highly held belief of inequity in per pupil expenditures in poverty school districts in Mississippi resulted in the state legislature creating the Mississippi Adequate Education Program (MAEP) in 1997. The Act required lawmakers to fully fund public school districts by providing specific allocation to meet the needs of students from low-performing schools, as they were presented with more challenges than wealthier school districts (Putnam et al. 2015). Since the passing of this Act, public school districts have only been fully funded twice and underfunded since 2009. However, in 2015, the Mississippi Legislature approved a $2.5 billion school spending package for fiscal year 2016, which was considered an increase of $109.9 million over the previous fiscal year, but still fell short of being fully funded, according to the MAEP requirements, by roughly $211 million ("Executive Budget Recommendation" 2014).

Moreover, during the November 2015 General Election, two initiatives were included on the ballot addressing the adequate and efficient support of public schools in Mississippi. In so doing, an amendment to the state constitution (Section 201: Educational opportunity for public school children) was proposed in favor of or against the initiatives. The election results revealed that Measure #42 was defeated. Initiative Measure #42 was in favor of amending section 201 of the state constitution. The Initiative Measure #42 and the Alternative Measure #42A ballot summary read as follows:

> Initiative Measure #42 would protect each child's fundamental right to educational opportunity through the 12th grade by amending Section 201 of the Mississippi Constitution to require that the State must provide and the legislature must fund an adequate and efficient system of free public schools. This initiative would also authorize the chancery courts of this State to enforce this section with appropriate injunctive relief.

> Alternative Measure #42A: This constitutional amendment is proposed as a legislative alternative measure to Initative Measure No. 42 and would require the Legislature to provide, by general law, for the establishment, maintenance, and support of an effective system of free public schools (Mississippi Secretary of State 2014). This constitutional amendment is proposed as a legislative alternative measure to Initiative Measure No. 42 and would require the Legislature to provide, by general law, for the establishment, maintenance and support of an effective system of free public schools.

Socioeconomic Status on Student Academic Achievement

By and large, the primary educational input for improving student achievement has been linked to per pupil expenditure, which has since led scholars in the field to examine other economic factors in an effort to explain differences in students' academic achievement. Previous research studies, which assert that socioeconomic status is far more important for students' performance than per pupil expenditure, were first reflected in the landmark report known as the Coleman Report (1966). The study was initiated in response to the Civil Rights Act of 1964 to address an overwhelming concern of equal education opportunity for minority students in public schools in the nation.

One question that the Coleman Report specifically addresses concerned the extent to which students learn and its impact on standardized achievement tests. The report findings indicated that school quality and level of school funding had far less impact on school

achievement than family economic background, students' peers, and community influences.

Other research studies on the role of students' family economic background have mixed results. For instance, in a study conducted by Okpala et al. (2001), the findings indicated that some parental involvement and per pupil expenditure were not statistical significant in explaining standardized achievement test scores, but, instead, insisted that "the effectiveness of parental involvement depended on the type of involvement, ethnicity, family income, and home environment" (115). Similarly, Caldas and Bankston (1999) explained that school spending had little to do with measured performance, and that students from single parent-households were more likely to perform lower academically than peers from two-parent homes. They also noted that unlike two-parent families, single-parenting was a much stronger predictor than race or poverty level on levels of student achievement. Moreover, Parcel and Dufur (2001) emphasized that students from families with post-secondary degrees and with higher income levels were more likely to perform better and achieve higher academically in school than students whose parents lacked those skills and abilities.

Wealth in a School District and Student Academic Achievement

Oates (1969) argued that since the majority of the local public budgets, which rely on property tax, were designated for K-12 education, an increase in per-pupil expenditure should naturally correlate with higher property values in communities. On the other hand, the author explained that in instances where low-income families were more likely to live in high-poverty school districts, there would be more monthly renters than homeowners; hence, reducing the amount of property tax wealth. This circumstance generally results in a direct negative effect on local per-pupil expenditure needed to improve performance for educationally disadvantaged students.

While inequity in funding local public school districts remains an issue, the U.S. Supreme Court (1973) ruled in the landmark case *San Antonio Independent School District v Rodriguez* that reliance on property taxes for school expenditures was not unconstitutional and did not violate the Fourteenth Amendment equal protection clause, regardless of expenditure disparities across school districts (Putnam et al. 2015). Although the U.S. Supreme Court ruling was unsuccessful in meeting the demands of poverty school districts, an earlier groundbreaking enactment (Elementary and Secondary Education Act of 1965) had been created to provide financial support to children from low-income families to afford them an equal opportunity to education by raising standards in an effort to close the achievement gap and enhance student performance. This Act was not without challenges, which led experts and advocates on education reform to demand increased standards and greater accountability in schools. This was laid out in a report entitled "Nation at Risk" (1983), which asserted that American school systems were failing students and, if not effectively corrected, would threaten the global economic competiveness of the U.S. workforce (Denning 1983).

Additionally, the reauthorization of the ESEA Act of 1965, re-titled "No Child Left Behind" in 2001, was the last major federal reform effort initiated to close the achievement gap and enhance student performance among the most educationally disadvantaged students in the nation. The amendment to this Act required public schools to demonstrate yearly academic progress as measured by statewide standardized tests administered to students on an annual basis. This dictated that schools be held accountable for students' progress and performance; however, if school districts repeatedly failed to show improvement, it could result in school closings and re-openings as charter schools ("No Child Left Behind Act" 2001).

Research Design and Data

This study is an investigation of the relationship between economic determinants and student achievement indicators of K-12 students in the State of Mississippi. The study employed a quasi-experimental design with cross-sectional data. The sample population in this study consisted of 146 out of 152 (due to missing data) school districts in Mississippi. Within those districts, there were 1,058 schools serving 492,847 students; of which approximately 133,300 were attending high school.

Data for this study were collected from two secondary sources. The first source was drawn from the Mississippi Department of Education (2017) on-line searchable database for the Children's First Annual Report for school year 2012 -2013. The data extracted from this report, per school district, contained one predictor variable (per pupil expenditures) and each of the explained (dependent) variables (composite Academic College Testing [ACT] score, graduation rate, and dropout rate). The second source was drawn from the Annie E. Casey Foundation (2017) Kids Count Datacenter on-line searchable database for 2013. The data from this search contained the remaining predictor variables (independent) (median household income, poverty school district, and unemployment rates).

In analyzing the data collected, descriptive statistics were utilized to describe and summarize the characteristics and values of the independent and dependent variables. Next, bivariate correlation analyses were performed to measure the direction and strength of association between the variables. Finally, multiple regression models were utilized to determine the proportion of variance in the dependent variables that were predictable from two or more independent variables.

Results

Pearson's Product-Moment Correlation Coefficient was performed to examine the relationship between student-performance indicators (ACT score, graduation rate, and dropout rate) and economic-determinant predictors (per-pupil expenditure, median household income, poverty school district, and unemployment rate) using SPSS. As shown in Table 1, each of the economic determinants, with the exception of unemployment rate, were statistically significant and correlated with each of the student performance indicators.

More specifically, the data show that ACT scores: decrease as per pupil expenditures increase; increase as median household income increases; and decrease as poverty in the school district increases. Given the higher levels of poverty in the Mississippi Delta regions, which are heavily financed by federal grants, we examined this data separately (summary tables not provided in the paper) and found higher dropout rates and lower graduation rates compared with other school districts in other regions in the state. In sum, the correlation between ACT scores and the predictor variables resulted in low to mid-moderate associations, ranging between -.51 and -.72.

The graduation rate criterion in Table 1 show a particularly weak correlation, though statistically significant, with the independent variables. It indicates that: as per pupil expenditures increased, graduation rates decreased. Poverty rate in the school district yielded similar results. However, the data did demonstrate one positive linear relationship with the median household income variable.

Similarly, the dropout rate criterion in Table 1 shows a much weaker correlation, though statistically significant, with each of the independent variables. It shows that: as per pupil expenditure increases, dropout rate also increased. On the other hand, it reveals that high poverty in a school district led to an increase in dropout rate. Also, the data indicate that

higher median household income led to a lower dropout rate among public school students.

Table 1. Bivariate Correlations Between Economic Determinants and Student Achievement Indicators

Variable	Composite ACT Score	Graduation Rate	Dropout Rate
Per pupil Expenditure	-.512**	-.241**	.224**
Median Household Income	.532**	.331**	-.284**
Poverty School District	-.718**	-.383**	.361**
Unemployment Rate	-.062	-.104	.096

**p≤.05

In Table 2, the Ordinary Least Squares Regression method was performed to assess the ability of the four economic determinants (per pupil expenditure, median household income, school poverty district, and unemployment rate) to predict student performance indicators. The criterion for Model 1 shows that poverty in the school districts and per pupil expenditures had significant regression weights on public school students' composite ACT scores. It also indicates that students who live in high poverty school districts with increased per pupil expenditures were expected to perform lower on the composite ACT test. Unemployment rates and median household income predictors were found to be non-significant, as they did not relate to the criterion after controlling for all the other predictors in the model.

In Model 2, all four predictors produced a R^2 statistic of .170, which does not explain much variance in the variables on students' graduation rates. As can be seen in Model 2, the only significant predictor of the four variables was poverty in the school district, which had a significant negative regression weight. This indicates that living in a high-poverty school district decreased the rate at which students were expected to complete high school. Per pupil expenditure, unemployment rate, and median household income as predictors of graduation rates were found to be non-significant, and therefore did not contribute to the multiple regression model.

Similarly, Model 3 shows that all four predictors produced a R^2 of .144, which indicates a small amount of variance that explains dropout rate. As can be seen in Model 3, the only significant predictor of the four variables was poverty in the school district, which had a significant positive regression weight. This indicates that students living in a high-poverty school district had an increased chance of dropping out of high school within a given year. Per pupil expenditure, unemployment rate, and median household income, as predictors of dropout rates, were found to be non-significant, and therefore did not contribute to the regression model.

Table 2. OLS Regression Between Economic Determinants and Student Academic Performance Indicators

Variable	Model 1 Composite ACT Score	Model 2 Graduation Rate	Model 3 Dropout Rate
Per pupil Expenditure	.000 (-.259)***	-.001 (-.095)	.000 (.008)
Poverty School District	-.086 (-.560)***	-.215 (-.251)**	.193 (.290)**
Median Household Income	1.683E-5 (.073)	.000 (.130)	-4.723E.5 (-.048)
Unemployment Rate	.000 (.-008)	-.009 (-.075)	.007 (.071)
Constant	23.087***	81.421***	4.297
R^2	.573	.170	.144
No. Observations	139	142	139

***p<.001; **p$\leq$.05; Note: Standardized coefficient in parentheses

Discussion and Conclusion

The purpose of this study was to examine the relationship between economic determinants and student academic performance indicators for educational outcomes. Previous works examining economic determinants have produced mixed evidence as to the role public schools play in students' abilities to succeed in academic settings. This study serves to build upon and expand existing works in the field by introducing four predictor variables in relation to three student academic performance indicators, without controlling for race, which allows for a broader discussion on the issue from one particular study. The following four research questions were examined to guide this study.

The first research question was "Is there a relationship between student achievement (composite ACT scores, graduation rates and dropout rates) and school-funding level? It was hypothesized that higher expenditures per pupil lead to higher student achievement. The bivariate analysis showed a statistically significant correlation between the predictor and each of the student performance indicators, with the exception of unemployment rate, though a weak to low-moderate association. On the other hand, when the variables were placed in the regression model, only poverty in the school district and per pupil expenditures were found to be significant.

Unlike poverty in the school district, per pupil expenditures was only significant with one of the three student performance indicators (i.e., composite ACT scores) in the models, and even so, there was no point increase or decrease in the composite ACT score. The findings for per pupil expenditures appear to imply that while it was a significant predictor of composite ACT scores it remains ambiguous in terms of whether an increase in expenditures would lead to an improvement in scores. Moreover, given the student performance indicators for graduation rates and dropout rates were found to be non-significant in relation to increased per pupil expenditures seem to further weaken the argument of equating increased expenditures with improved student performance.

The second question was "Do families' economic affluence explain the differences in student achievement?" It was hypothesized that students from families with higher median household income would achieve better in school. The median household income was significant in explaining student achievement indicators (composite ACT score, graduation rates and dropout rates) as educational outcomes using the bivariate analysis. However, the findings did not hold up in the regression models. Median household income was found to be statistically non-significant in each of the models. Overall, these findings were not

completely consistent with liberal and conservative supporters' views on this issue, which allege that students' family economic background explain differences in student academic performance.

The third question was "Does the location of a school district within a community impact student achievement?" It was hypothesized that higher-poverty school districts lead to lower student achievement. Poverty school districts were found to be statistically significant and the best predictor across all three indicators in relation to student academic performance. The findings indicate that higher-poverty school districts lead to lower composite ACT scores, a decrease in high school graduation rates, and an increase in dropout rates. Seemingly, these findings are not surprising, since numerous research studies have shown that poverty causes an assortment of societal ills, and living in a school district that has a majority of low-income families and a low property tax-base only strengthens the argument in the literature in this regard.

The fourth and final question was "Does the unemployment rate within a school district impact student achievement?" It was hypothesized that higher unemployment rates lead to lower student achievement. In the bivariate analysis, unemployment rate was found not to be statistically significant in explaining each of the student performance indicators. Likewise, the findings in the regression model revealed that high unemployment rate was statistically non-significant across all student academic performance indicators. In light of these findings, unemployment rate has not been rigorously studied by scholars as affecting educational outcomes; however, research does show that it has been linked to high-poverty school districts in communities. In hindsight, the inclusion of unemployment rate of students' family economic background may not have been an effective measure in explaining the differences in student academic performance.

It is clear from this analysis that more research is needed in this area as the problems continue to worsen. These data clearly show that educational achievement is tied to several other factors that lawmakers have some degree of control over. More than anything, poverty appears to be a very salient factor in explaining these outcomes. Hence, how one goes about lifting these school districts out of poverty is important. To begin this conversation, policymakers and community leaders would need to make a firm commitment through an exchange of ideas and alternative solutions on ways to increase the local property tax wealth of low-income residents living in high poverty school districts as a means to an end for the purpose of improving student academic performance.

Debra Monroe-Lax- is currently a doctoral student in the Public Policy and Administration Program at Jackson State University. She attained a Master's degree in Public Administration from Indiana State University. Her current research and evaluation interests are in the areas of public education (K-12) reform, juvenile justice reform, at-risk youth violence prevention programs, and youth development projects. Email: *debra.a.monroe-lax@students.jsums.edu.*

Jae-Young Ko, PhD., is an associate professor at the Dept. of Public Policy and Administration, Jackson State University, Jackson, Mississippi. He teaches graduate classes on urban management, community development, environmental policy, natural resource management, and inter-governmental relations at Jackson State. He has published numerous papers on coastal management, ecosystem service valuation, and stakeholder analysis, in addition to the areas related to teaching subjects. He is the current President of the Mississippi Political Science Association (2017-2018), and serves as journal editorial board

member for academic journal. Email: *Jae-Young.ko@jsums.edu*.

References

ACT National and State Scores. (2015). Retrieved November 12, 2015, from http://www.act.org/newsroom/act-national-and-state-scores/

Annie E. Casey Foundation. (2017). Kids Count Datacenter. Retrieved from http://datacenter.kidscount.org/.

Bibb, William E., and Larry McNeal. (2012). The Relationship between Per Pupil Expenditures and Student Achievement in Tennessee, *2*(3), 191–198.

Caldas, Stephen J., and Carl L. Bankston. (1999). Multilevel Examination of Student, School, and District-Level Effects of Academic Achievement. *Journal of Education Research*, *93*(2), 91–100.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederic D. Weinfeld, and Robert L.York. (1966). Equality of Educational Opportunity, 1066–5684. Retrieved from http://www.eric.ed.gov/ PDFS/ ED012275.pdf.

Denning, Peter J. (1983). A Nation At Risk: The Imperative for Educational Reform. *Communications of the ACM*, *26*(7), 467–478. Retrieved from http://doi.org/10. 1145/358150.358154.

Governor Phil Bryan Executive Budget Recommendation Fiscal Year 2015. (2014), 1–25. Retrieved from http://www.governorbryant.com/wp-content/uploads/2013/11/2015 -EBR-Final.pdf.

Greenwald, Rob, Larry V. Hedges, and Richard D. Laine. (1996). The Effect of School Resources on Student Achievement. *Review of Educational Research*, *66*(3), 361–396. Retrieved from http://doi.org/10.3102/00346543066003361.

Hanushek, Eric A. (1986). The Economics of Schooling: Production and Efficiency in Public Schools. *Journal of Economic Literature*, *24*(3), 1141–1177.

Hanushek, Eric A. (1989). The Impact of Differential Expenditures on School Performance. *Educational Researcher*, *18*(4), 45–62. http://doi.org/10.3102/001 3189X01 800 4045.

Mississippi Department of Education (2017). Children's First Annual Report, 2012-2013. Retrieved from http://reports.mde.k12.ms.us/data/.

Mississippi Secretary of State: Initative Measure #42. (2014). Retrieved November 12, 2015, from http://www.sos.ms.gov/Elections-Voting/Pages/Initiative-Measure-42.aspx

National Center for Education Statistics. (2015). Retrieved November 12, 2015, from https://nces.ed.gov/ccd/tables/ACGR_2010-11_to_2012-13.asp

Oates, Wallace E. (1969). The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis. *Journal of Political Economy*, *77*(6), 957. http://doi.org/10.1086/ 259584.

Okpala, Comfort O., Amon O. Okpala, and Frederick E. Smith. (2001). Parental Involvement, Instructional Expenditures, Family Socioeconomic Attributes, and Student Achievement. *The Journal of Educational Research*, *95*, 110–115. http://doi.org/10.1080/00220670109596579.

Parcel, Toby L., and Mikaela J. Dufur. (2001). Capital at Home and at School: Effects on Student Achievement. *Social Forces*, *79*(3716), 881–911. http://doi.org/10. 1353/sof.2001.0021.

Public Law 107-110: The No Child Left Behind Act of 2001. (2001). *107th Congress.*

Retrieved June, 1–670. Retrieved from http://www2.ed.gov/policy/ elsec/leg /esea02/index.html.

Putnam, Michael, and Jill Cabrera. (2015). Mississippi: One State's Search for Equity in School Finance. *SAGE Open*, *5*(2). http://doi.org/10.1177/2158244015581187.

Ram, Rati. (2004). School Expenditures and Student Achievement: Evidence for the United States. *Education Economics*, *12*(2), 169–176. http://doi.org/10.1080/ 09645 29042000239177

Sirin, Selcuk R. (2005). Socioeconomic Status and Academic Achievement: A Meta - Analytic Review of Research. *Review of Educational Research*, *75*(3), 417–453.

U.S. Census Bureau, 2015 Annual Survey of School System Finances. (2015). Retrieved November 12, 2015, from http://www.census.gov/