**The Mississippi Statewide Accountability**

**System Through Research Lens**

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**Mississippi Urban Research Center (MURC)**

**Jackson State University**

**College of Public Service**

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**Introduction**

The Elementary and Secondary Education Act of 1965 (ESEA), and its amendment by the No Child Left Behind Act of 2001 (NCLB), established requirements for State Education Agencies (SEAs). However, SEAs can request flexibility from implementing specific requirements of the NCLB by submitting comprehensive State-developed plans designed to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction. Mississippi’s first comprehensive State-developed plan, known as the Mississippi Performance-Based Accreditation System, was developed and tested in 1987. This plan was designed to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction. The plan morphed into the Mississippi Statewide Accountability System,1 and it assigns an accountability label or rating to a school or district based on: 1) The overall level of academic performance as measured by the Quality of Distribution Index (QDI),2 which use data from standardized tests; 2) High School Completion Index; and 3) the degree to which a school or district meets its expected performance as measured by Growth Composite Value, which reflects test gains across time. On the surface, the QDI appears to be an unbiased measure for assessing school districts’ performance. However, there is a limitation: The same assessment tool was not used across time. In 2013-2014, students took the MCT2; in 2014-2015, they took the PARCC; and in 2015-2016, they took the MAP.3

Multiple correlates of students’ academic performance have been established; namely, physical fitness, school structural characteristics, student effort, peer associations, parental involvement, teacher quality, and poverty.4,5,6,7 Students from low-income families consistently, regardless of ethnicity or race, score well below average. Children who lived persistently in poor families scored 6 to 9 points lower on assessment tests than children who were never poor.8 Since poverty is a variable, which school districts cannot change, an accountability measure that is not insulated from the effects of poverty could be viewed as not being a fair measure of how well a district or local school is doing.

With 637,128 persons living in poverty (<https://talkpoverty.org/state-year-report/mississippi-2016-report/>), Mississippi ranked 51st for the percentage of people who had income below the poverty line ($24,250 for a family of four) in 2015. The distribution of the percentage living below poverty was 24.4% for urban and 18.8% for rural; however, 8.7% of urban residents who were married with children lived below poverty versus 9.4% for rural residents. Thus, a higher percentage of people living in urban communities live below poverty, but a slightly higher percentage of persons in rural communities who are married with children live below poverty. When female-headed households are factored in, 51.2% of urban residents live below poverty, and 49.7% of rural female-headed household live below poverty.9 Clearly, poverty engulfs many of Mississippi public school districts.

Is the accountability score emerging from Mississippi Statewide Accountability System unbiased? The current brief responds to this question.

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**Methods**

**Research Design**. A correlation research design was used. This design explores the relationship between variables. While the design does not support the establishment of causation, the predictive relationship between two or more variables can be determined.

**Description of Sample.** Data from 142 school districts (which excludes 6 districts) in Mississippi were collected from the Mississippi Department of Education’s website. Approximately 492,586 students were enrolled for the 2013-2014 school. Of those students, 49% (243,845) were Black, 46% (224,505) were White, 3% (14,844) were Hispanic, 1% (4,938) were Asian, 1% (3,173) were Multiracial, and <1% (1,281) were Native American. The 142 school districts included in this study represented rural and urban areas.

Every school in the United States is located in either a rural or urban area. Using Metropolitan Statistical Area (MSA) data available through the U.S. Census Bureau, in Mississippi 13 school districts were classified as urban, and 129 were classified as rural. An MSA is a county or group of contiguous counties that contains at least one city with a population of 50,000 with a metropolitan population of at least 100,000.9 Using the Mississippi School District Map, districts were also classified by location and/or region (for example, Northeast, Northwest, Southeast, and Southwest). Table 1 displays background characteristics (total enrollment, per pupil expenditure, highly qualified teacher percentage) by region. Total enrollment for districts by region ranges from approximately 98,000 to 153,000, with the lowest enrollment in the Northeast region and highest enrollment in the Southeast region. Per pupil expenditure ranges from $9,059 to $9,918, with the lowest average amount in the Northeast region, and the highest average amount in the Northwest region. As for highly qualified teachers, the highest average is in the Northeast, and the lowest average in the Northwest region. In regards to racial demographics, African Americans have a higher concentration in the Northwest and Southwest regions, and Whites have a higher concentration in the Northeast and Southeast regions (See Table 2).

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**Table 1**

***District Background Characteristics by Region***

|  |  |  |  |
| --- | --- | --- | --- |
| Region | Average Total Enrollment | Average Per Pupil Expenditure | Average Highly Qualified Teacher Percentage |
| Northeast | 98,921 |  $9,059 | 97.90 |
| Northwest | 114,738 | $9,918 | 95.23 |
| Southeast | 153,523 |  $9,125 | 97.79 |
| Southwest | 118,722 |  $9175 | 97.03 |

**Table 2**

***Percentage of Racial Distribution by Region***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Region | Asian | Black | Hispanic | Native American | White |
| Northeast | 0.53 | 42.01 | 3.19 | 0.13 | 54.12 |
| Northwest | 0.37 | 73.99 | 1.28 | 0.08 | 21.10 |
| Southeast | 1.00 | 38.42 | 3.39 | 0.62 | 56.55 |
| Southwest | 0.53 | 66.22 | 1.45 | 0.08 | 31.69 |

**Procedure.** Secondary data were accessed from the Mississippi Department of Education, the National Center for Education Statistics, and the Children’s First Annual Report 2012-2013. Student achievement was measured using the Mississippi Curriculum Test, 2nd Edition Mathematics and Language scores for grades 3-8 (2013-14 school year).

**Results**

Table 3 shows descriptive statistics for selected variables. Between groups analysis (urban versus rural school districts) revealed significant differences for accountability scores (*p* = .007), percentage of budgeted funds expended for other instructional (*p* = .021), general administration (*p* = .0001), operations (*p* = .004), and composite language (*p* = .028). Composite math approached significance (*p* = .06). Thus, urban schools received significantly higher accountability scores (*Murban* = 3.07 versus *rural =*2.27); spent a higher percentage of their budgeted funds on other instructional items (*Murban* = 17.3% versus *rural =*15.5%); and reported higher language and math scores. Rural school districts spent a higher percentage of their

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budgeted funds on general administration (*Mrural* = 5.69% versus *urban =*3.89%) and operations (*Mrural* = 6.97% versus *urban =*6.04%). Thus, for urban school districts, higher accountability and language and math scores tended to be associated with a higher percentage of their operating budget being spent on other instructional services. Rural school districts tended to spend a higher percentage of their operating budget on general administration and operations. Urban and rural school districts did not differ significantly regarding the percentage of their budgets spent on total expenditures per student, instructional, school administration services; and their percentage of highly qualified teachers.

Table 4 shows the correlation matrix. Accountability scores correlated significantly with the percentage of funds spent on instruction (*r* = .30), general administration (*r* = -.46), and operations (*r* = -.42). Accountability scores also correlated significantly with percentage of highly qualified teacher (*r* = .43), composite language scores (*r* = .84), composite math scores (*r* = .80), percentage receiving free and or reduced lunch (*r* = -.78), school attendance rates (*r* = .32), and percentage of black students (*r* = -.71). Thus, as accountability scores improved, school districts tended to spend more on instruction, less on general administration and operations, have a higher percentage of qualified teachers, have higher language and math scores, have a lower percentage of students receiving free or reduced lunch, have better attendance, and have a lower percentage of black students.

These variables, composite language and math excluded, were placed in a stepwise regression analysis with accountability scores as the dependent variable. Three prediction models emerged from the analysis. The first model contained free or reduced lunch and it explained 60% of the change in accountability scores, *r2 =* .60, *F*(1, 106) = 158.92, *p* =.0001. The second model included free or reduced lunch and percentage of black students, and it explained 63% of the change in accountability scores, *r2 =* .63, *F*(2, 105) = 88.21, *p* =.0001. Finally, the third model contained free or reduced lunch, percentage of black students, and attendance, and it explained 66% of the change in accountability scores, *r2 =* .63, *F*(3, 104) = 66.78, *p* =.0001. Thus, accountability scores appear to be an index of poverty since a high percentage of its variance can be explained by free or reduced lunch.

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**Table 3**

**Descriptive Statistics**

 **Std.**

**Variable N Mean Deviation Sig.**

Accountability Score

 Urban 13 3.07 .95

 Rural 124a 2.27 .99 .007c

Expenditures/Student ($)

 Urban 13 9,154 1,389.21

 Rural 129 9,307 1,381.62 .638 c

Instructionalb

 Urban 13 66.9 3.07

 Rural 129 66.4 3.66 .534c

Other Instructionalb

 Urban 13 17.3 2.58

 Rural 129 15.4 2.97 .021d

General Administrationb

 Urban 13 3.89 1.47

 Rural 129 5.56 1.88 .0001d

School\_Administrationb

 Urban 13 6.00 .58

 Rural 129 5.73 .99 .242d

Operationsb

 Urban 13 6.04 .81

 Rural 129 6.97 1.19 .004d

Highly Qualified Teachersb

 Urban 13 97.87 1.30

 Rural 129 96.86 2.87 .386d

Composite Language

 Urban 13 151.17 2.10

 Rural 129 149.49 2.86 .028c

Composite Math

 Urban 13 153.15 2.28

 Rural 129 151.59 3.11 .061c

Graduation Rateb

 Urban 13 77.88 6.65

 Rural 129 73.70 9.43 .123d

Black\_Studentsb

 Urban 13 44.16 28.64

 Rural 129 54.60 30.93 .242d

aAccountability score was not available for five school disctricts;

bPercentage of Operational Budget; ct-test; dMann-Whitney U Test.

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**Table 4**

**Correlation Matrix**

**Variables 1 2 3 4 5 6 7 8 9 10 11 12 13**

1. Accountability Score ---

2. Instructionala .30b ---

3. Other Instructionala .05 -.74b ---

4. General Administrationa -.46b -.45b -.09 ---

5. School Administrationa .11 -.18 .10 -.31b ---

6. Operationsa -.42b -.30b -.19b .25b -.02 ---

7. Qualified Teachersa .43b .23b -.01 -.41b .25b -.37b ----

8. Composite Language .84b .28b .13 -.51b .13 -.45b .46b ----

9. Composite Math .80b .26b .10 -.45b .10 -.40b .45b .93b ----

10. Free or Reduced Luncha -.78b -.37b .01 .48b .07 .43 -.55 -.80b -.76 ----

11. Daily Attendancea .32b -.03 .03 .12 -.16 -.04 -.03 .24b .27b -.36b ----

12. Black Studentsa -.71b -.43b .10 .54b -.18c .34b -.51b -.68b -.66b .63b -.01 ----

13. Graduation Ratea .68b .17 .06 -.30b .04 -.21b .33b .59b .57b -.58b .23b -.54b ----

aPercent of Operating Budget

b*p* = .01

c*p* = .05

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**Discussion**

The Mississippi Statewide Accountability System’s primary goal is to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction. Yet, implementation of its objectives has heightened disparities to the point where a strong correlation exists between the accountability score assigned to school districts, and the variables of free or reduced lunches, academic achievement, and percentage of African American students enrolled in the district. The accountability score, which was designed to highlight weaknesses and evaluate a districts’ performance, is a strong predictor of free or reduced lunches and percentage of African American students enrolled in the district. Thus, the accountability score can be used as an index of poverty. The research literature is very clear about the relationship between poverty and academic performance.

Given the role that poverty is playing in Mississippi school districts, and given the fact that poverty reduction is beyond the school districts’ purview, using only the accountability score to make classification determinations of accreditation is not advisable because the current analysis suggests that the accountability score is an index of poverty. Assigning a low accountability score to a school (e.g., D or F) will not improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction because the accountability score is an index poverty (60% of the change in the accountability score can be explained by free or reduced lunch), and school districts have no control over poverty.

On the other hand, a relationship was documented between how a school district spends its budgeted funds and academic performance. Districts that spent a higher percentage of funds for general administration displayed lower language and math scores. The same was true for other instructional expenses. Thus, examining how a district budgets and expends its funds appears to be a more equitable basis upon which to judge a district’s performance.

**Policy Implications**

In keeping with the goal of providing empirically-based recommendations, several key findings are particularly relevant from a policymaking perspective. The first key finding is the relationship between how funds are spent and academic performance. Academicians, researchers, and policymakers have long recognized the linkage between instructions and student outcomes. The findings from this study also confirm a linkage between how funds are spent and higher test scores. Spending less on general administration, and more on the “Instructional” budget categories (e.g., instruction and other instructional services) appears to be supported by this study’s findings.

Another key finding from this analysis concerns the relationship between the accountability score and measures of poverty (e.g., free or reduced lunch). Existing state policies mandate the assignment of an accountability score. Negative consequences occur if a district fails to provide information critical to their accountability score being determined. Yet, if the district provides the information, and poverty characterizes its enrollment, the assigned accountability score will affirm the presence of poverty by registering an “F” or a “D”. This assignment will negatively impact the

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district’s overall academic standing. However, what is really being reflected is the effect of poverty on the district’s overall performance.

As stated in the introduction section, the intent of this research brief is to inform multiple stakeholders, school officials, and other policymakers regarding the relationship between the accountability score and selected variables. One of the purposes of this brief is to help identify potential policy areas that could infuse more fairness into Mississippi Statewide Accountability System. Assigning low accountability scores to under-performing school districts will not improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction, especially when free or reduced lunches can explain 60% of the change in accountability score. The following provides a summary of the key policy recommendation derived from this brief’s analysis:

* Policymakers should consider replacing the current accountability score with a measure that does not reflect poverty since poverty is beyond school districts’ purview.

The above policy recommendation is based upon an examination of the statistical linkages between accountability score and select variables. The recommendation provides empirical evidence that policymakers can use to inform their decision making as related to improving student academic performance in urban and rural school districts, and evaluating a school districts’ overall performance. As mentioned in the methods section of this brief, while correlation does not necessarily support causation, it can help establish predictive relationships between two or more variables.

**Conclusion**

There are many factors that can impact academic performance, and this research brief helps identify some of these factors. Also, there are different approaches to evaluating school districts’ performance relative to educating children. This research brief documents the accountability score as an approach, which does not control for the effects of poverty. As such, school districts with higher poverty levels are disadvantaged when they step into the evaluation chamber.

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The QDI measures the distribution of student performance on state assessments around the cut points for Basic, Proficient, and Advanced performance. The formula for the QDI is QDI = % Basic + (2 X % Proficient) + (3 X % Advanced)

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