

# Electronic Journal of Sociology (2005)

ISSN: 1198 3655

## Measuring the Funding Discrepancies of Black Belt School Districts In Tennessee

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### ABSTRACT

The state of Tennessee is part of the United States that includes a special set of school districts known as the Southern Black Belt. Named for the black, fertile crescent-shaped land, utilized for the agricultural industry for hundreds of years in the south, these school districts have disproportionately been under funded, and as a result have created a vicious cycle of poverty among the residents that appears inescapable. The purpose of this study is to demonstrate these funding inadequacies by answering the following research question: are Black Belt school districts spending less for education than non- Black Belt school districts? The data for this study was gathered from the Tennessee Report Card for Education over a period of ten years. Pooled time series cross-sectional regression analysis was the data-testing device employed in the study. Findings suggest that Black Belt school districts are spending significantly less on per pupil expenses, as well as capital expenses for education. Policymakers need to caution the generalizability of this study because it only represents those Black Belt school districts in Tennessee. Future studies should incorporate all the Black Belt school districts in the south to see if other states are witnessing the same funding discrepancies as Tennessee.

## Introduction

The funding of education in America is and will continue to be a controversial policy issue for many years to come. Proponents of education funding claim that gross inadequacies exist between wealthy school districts and poor school districts as a result of the outdated funding mechanisms employed by states and localities for decades (Picas, 1995). Others contend that we currently spend more than we ever have as a nation on education yet the achievement scores are stagnant and in some cases have even declined (Hanushek, 1994).

Consequently, the educational funding discrepancies between the have and the have not counties result in an endless cycle of poverty and despair for those unfortunate enough to reside and attend Black Belt school districts. Such school districts exist in the southern region of the United States known as the Southern Black Belt. Named for the black, fertile, crescent-shaped land utilized for the agricultural industry for hundreds of years in the south, these school districts have disproportionately been under funded, and as a result have created a vicious cycle of poverty among the residents that is seemingly inescapable. The literature is saturated with studies demonstrating funding discrepancies among school districts in America. However, most of these studies show the differences between school districts that are primarily white versus those that are predominantly African-American, Latino or other minority. Other studies demonstrate funding differences between urban, suburban and rural schools. Absent from the literature are studies pertaining to such special districts located in the Southern Black Belt. These school districts are urban, suburban and rural, but have been under funded for decades (Wimberley & Morris, 1996).

The purpose of this study is to demonstrate these funding inadequacies by answering the following research question: *are Black Belt school districts spending less for education than non- Black Belt school districts in Tennessee?* This study is important because it will open the door for a new category for classifying under funded school districts by showing that a division exists within the urban, suburban and rural classification categories used for years as dividing lines for education funding studies. Secondly, it will provide empirical support to the normative arguments that under funding education results in externalities such as higher dropout rates and lower standards for school district accreditation achievement, which results in a failure of some school districts providing

quality education for their students.

## **Literature Review**

The U.S. educational system is one of the most inequitable in the industrialized world with students routinely receiving dramatically different learning opportunities based on their social status. There are persistent disparities among ethnic, geographic, and socioeconomic groups in access to quality K-12 science and mathematics instruction. Black, Hispanic, and Native American youth continue to lag far behind Whites and Asians in the amount of coursework taken in these subjects and in levels of achievement; this gap negatively affects their access to certain careers and workforce skills (Darling-Hammond, 1998; Lee, 2000).

For education closure of the achievement gaps between the various minority groups that are served by America's education system better assessment, curriculum, and instruction could help educators diagnose the needs of at-risk students and tailor improvements to meet those needs. These improvements will begin when states and localities began funding school districts adequately and equitably (Darling-Hammond, 1998).

Education, according to the National Center for Education Statistics, accounts for the single largest cost in most state and local government operating budgets (U.S. Department of Education, 1998). Generally, the money comes from a combination of local and state taxes, federal grants-in-aid programs, and sales taxes, but the balance between these sources has shifted considerably over the years. Local tax revenues consist almost entirely of property taxes and sales taxes; and, despite their regressiveness, these taxes have maintained continued popularity as revenue generating devices (U.S. Department of Education, 2004). As a result of educational incongruity, however, local taxation for generating educational revenue began receiving immense criticism in the 1970's and 1980's. During this time period state governments began assuming a greater role in funding educational programs. The state share of total educational funding increased from 41 percent in 1968 to about 50 percent in 1986, while local funding decreased from about 50 percent to 43 percent during this same time period (Wong, 1989).

The characterization of school financing as a conflict between local control ideals and equal opportunity correctly summarizes the traditional discourse revolving around this issue (Robertson & Judd, 1889). A wide range of disparity between school districts exists within many states because of taxable wealth (gross state product) and tax rates. Some states possess capacious gross state products, while other states exhibit feeble levels of wealth. Further exacerbation of wealth disparity between school districts exists because of imbalances in the distribution of commercial, industrial, utility, public, tax-free, and residential property, as well as, an uneven distribution of school-aged children. Consequently, the formulas used by states to fund each school district result in those children living in poor neighborhoods receiving a lower standard of education than children from wealthier communities (Peters, 1996). As a result, children from less affluent communities entering the job market or post-secondary educational institutions often find themselves deficient in the necessary skills to adequately compete. Thus, more affluent individuals receive better jobs and educations as compared to individuals who originate from less affluent households (Grissmer, Flanagan, and Williamson, 1997).

Statistical evidence provided by the Department of Education (2004), certifies numerous accounts of educational disparity across the American states. In most states, the average spending disparity between affluent and less affluent school districts ranges from two and five times more. Numerous court challenges to the constitutionality of property based education finance have occurred in almost every state over the last ten years, and the supreme courts in seventeen states have declared the current systems of education finance in these states unconstitutional (Dee, 2004). Despite limited efforts toward eradicating these financial disparities, the fact remains that within virtually every state, funding levels for some children's education are several times greater than those of other children (Renchler, 1992). This funding disparity is starkly evident in what is known as the Southern Black Belt of the United States. The Southern Black Belt is a region so-named for the dark color of its fertile soil especially for cotton growing, but more recently defined by the density of Blacks (Bertak, 2001).

The Belt traverses the 11 states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Virginia, South Carolina, Tennessee, Texas, and is characterized by high densities of unemployed or low-waged, mostly African American (Black) but increasingly Hispanic

(Latino) and migrant, but also includes Whites under intergenerational poverty and low educational levels. The average per capita income of a typical county in the Belt is about one-third of the average of the wealthiest county in the same state (Wimberley & Morris, 1996).

As a result of inadequate school financing of the Southern Black Belt region, educational gaps among ethnic groups in these areas have widened. But even so, present literature provides no evidence of substantive research targeted expressly to narrowing of the gaps of educational attainment and achievement in the Belt region. No prior research can be found that considers this region as a distinct researchable population with pronounced differences in educational results and outcomes and the forces that influence them (Lee, 2003).

The lagged state of education in the Belt's multi-state regions has been defined and nurtured by the intractable bond between its social and economic histories (i.e., slavery and agriculture), which have produced negative effects that are intergenerational. As of 2003, the Belt can be characterized by K-12 environments with high densities of poor citizens in "ethnic clusters" where low wages, poor schools, low achievement, and high unemployment are intergenerational. The Belt region could be described as having an "unfair disadvantage" in regard to K-12 educational progress due partly to its history, but partly to the absence of educational research that focuses on the critical needs of this region (Bound & Freeman, 1992).

The crescent-shaped Southern Black Belt consists of a "multicultural rainbow" of poor citizens who are highly clustered. About 20% of the nation's White poor lives there, whereas and 80% of this nation's Black poor reside there. As a percentage of total immigrants, the Hispanic population in the Belt states is increasing five times faster than the Black population, but the densest populations of Hispanics remains in the southwestern states (TX, NM). There are clusters of Native Americans in the Belt, but their densest populations are located in the mid western states (NM, CO, MT, SD, ND) (Wimberley & Morris, 1996).

The Southern Black Belt consists of 623 mostly rural counties in eleven southern states. These counties house nearly half of the nation's poor African American population and twenty-five percent of the agricultural land use. Roughly twenty-five percent of the population lives below the poverty level and the unemployment rate hovers around thirty-percent

annually (Davis, 2000).

Persons in the Belt account for 21% of adults in this country without high school diplomas, while the South as a whole accounts for 40%. Persistent intergenerational poverty and education appear to be inversely linked within the Belt as measured by any standard. With limited education, the options to change to a different employment are often non-existent, theoretically increasing their dependence on public assistance. Notably, the main occupation in the Belt, farming, has diminished among Blacks, as has land ownership. But preliminary analysis of data for several of the Belt states indicates that many of the continual poverty counties contain small percentages of African-Americans. For example, in Arkansas, only 20% of the African-Americans population is located in that states' fifteen Black Belt school districts. Thus, a relatively small percentage of African-Americans benefit from the federal and state programs targeted expressly to those regions. In fact, poverty among African-Americans expanded significantly in these districts from 1979 to 1989 (Calhoun, Reeder & Bagi, 2000).

A region where the "typical" relationships among ethnographic variables, educational achievement, and attainment are warped at best and discontinuous at worst characterizes the Southern Black Belt. For example, the main occupation, farming, barely provides a living and handcuffs these citizens to this region. Actual income for many in the Belt is below the typical measures used elsewhere. Those that are the most educated in the Black Belt leave, thereby decreasing the measure of educational attainment for the region as a whole (Davis, 2000).

The Belt's residents have a substandard quality of life that is constrained by the nexus of ethnicity, poverty, unemployment, poor education, poor environments, substandard housing, high incarceration, and a host of other factors. So much so that this region could be defined as being disadvantaged in regard to K-12 education relative to other regions of this country. Although federal funding has flowed into these regions in support of infrastructure, housing, business, and general assistance; no known initiatives have specifically targeted education in a similar manner (Calhoun, Reeder & Bagi, 2000).

The consequence of all of these forces is that most of the citizens in the Black Belt lack the power to execute options to alter their existence for the better, a fact that self-perpetuates itself over successive generations.

To interrupt this vicious cycle, this region needs special attention in the educational achievement arena if goals such as promulgated by No Child Left Behind are to be attained for all citizens of our nation (Peevely and Ray, 1999).

This research project was constructed to provide empirical support demonstrating the copious inadequacies of Black Belt school districts in Tennessee, compared to similar non-Black Belt school districts in Tennessee. Tennessee's education funding formula was established in 1993 as a result of a state Supreme Court case, Tennessee Small School Systems v. McWherter (851 S.W. 2<sup>nd</sup> 139 Tennessee, 1993). The court's ruling resulted in the establishment of the Basic Education Program formula which is the type that allocates funding for staff and other costs based on total student enrollment (Griffith, 2005). The data sample is the twenty-three school districts found in the seventeen Black Belt counties as defined by Wimberley & Morris (1996).<sup>1</sup> The following sections provide the hypotheses, data, research methods and findings of this study.

## **Hypothesis**

H<sub>1</sub>: Black Belt school districts tend to spend the same per pupil compared to non-Black Belt school districts.

H<sub>2</sub>: Black Belt school districts with fewer accredited elementary schools tend to spend similar resources per pupil compared to non-Black Belt school districts with more accredited elementary schools.

H<sub>3</sub>: Black Belt school districts with fewer accredited high schools tend to spend similar resources per pupil compared to non-Black Belt school districts with more accredited high schools.

H<sub>4</sub>: Black Belt school districts with higher dropout rates tend to spend the same per pupil compared to non-Black Belt school districts with lower dropout rates.

H<sub>5</sub>: Black Belt school districts tend to spend the same on capital

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<sup>1</sup> See Appendix I& II for a listing of the Black Belt School Districts and Black Belt counties used in this study.

expenses compared to non-Black Belt school districts.

H<sub>6</sub>: Black Belt school districts tend to spend the same operational expenses compared to non-Black Belt school districts.

H<sub>7</sub>: Black Belt school districts tend to spend the same on instruction expenses compared to non-Black Belt school districts.

H<sub>8</sub>: Black Belt school districts tend to spend the same on teachers salaries compared to non-Black Belt school districts.

H<sub>9</sub>: Black Belt school districts receiving larger portions of federal dollars for education tend to spend the same per pupil compared to non-Black Belt school districts receiving smaller portions of federal dollars for education.

## Data and Methodology

### Data

The unit of analysis in the study is school district level data in Tennessee measured over a ten year time period from 1993 to the year 2003. All the data collected in this research project was gathered from the Tennessee Report Card for Education. All revenue data was adjusted for inflationary factors to ensure data dependability. Where applicable, the data was standardized to control for heteroscedasticity and autocorrelation.

### Conceptual and Operational Definitions

**PER PUPIL SPENDING** (dependent variable) – The total amount of per pupil spending by each Tennessee school district. The variable was standardized by dividing the total amount of spending for education by the total number of students attending each school district.

**FEDSPEDU** – The total amount of federal spending for education received by each school district.

**BLACK BELT DISTRICTS** - The actual school districts that are classified within the Black Belt region of Tennessee. The variable is coded as a dummy variable with 0 = Black Belt school districts and 1 = non- Black Belt school districts.



**DROPOUT RATE** – The percentage of high school dropouts within each Tennessee school district.

**ACCREDITATION ELEMENTARY** – The number of elementary schools accredited by the state in each Tennessee school district.

**ACCREDITATION SECONDARY** - The number of high schools accredited by the state in each Tennessee school district.

**OPERATIONAL EXPENSE** – The total amount of revenue each Tennessee school district spends on daily operational expenses.

**CAPITAL EXPENSE** - The total amount of revenue each Tennessee school district spends on construction, renovation and other capital expenses.

**INSTRUCTION EXPENSE** - The total amount of revenue each Tennessee school district spends on educational supplies and other instruction expenses.

**TEACHER SALARIES** - The total amount of revenue each Tennessee school district spends on teacher’s salaries, benefits, and other personnel related expenses.

**FEDERAL SPENDING** – The total amount of revenue each Tennessee school district receives from the federal government for general education expenses.

**The estimated regression equation is written as follows:**

$$Y \text{ (PERPUPILSPENDING)}_{t-1} = a + (B_1) \text{ FEDSPEDU}_1 + (B_2) \text{ BLACK BELT}_2 + (B_3) \text{ DROPOUT RATE}_3 + (B_4) \text{ ACCREDITATION ELEMENTARY}_4 + (B_5) \text{ ACCREDITATION SECONDARY}_5 + (B_6) \text{ OPERATIONAL EXPENSE}_6 + (B_7) \text{ CAPITAL EXPENSE}_7 + (B_8) \text{ INSTRUCTION EXPENSE}_8 + (B_9) \text{ TEACHER SALARIES}_9 + (B_{10}) \text{ FEDERAL SPENDING}_{10} + E$$

## Methodology

This research project uses “pooled time series cross-sectional data analysis” as the measuring device for the previously stated hypotheses (Beck and Katz, 1996). One of the most promising advantages of using pooled time series cross sectional analysis is its usefulness in offering explanations of the past, while simultaneously predicting the future behavior of exogenous variables in relation to endogenous variables. Pooled time series cross sectional analysis allows the researcher to focus on more than one case in predicting social phenomenon, whereas simple time series analysis deals strictly with specific cases at different time points, causing data management complications, and compromises the generalizability of the project. Furthermore, ARIMA time-series methods of data analysis place a relatively greater emphasis on controlling for autocorrelation and heteroskedasticity to ensure data dependability than on discovering and explaining social phenomenon. Autocorrelation and heteroskedasticity do pose threats to data analysis, however, according to Beck and Katz (1996) they are more of a “nuisance” than a real threat.

Despite the numerous advantages of pooled time series analysis using  $N$  (number of cases) at  $T$  (time points) for predicting the future of a particular social intervention program, a number of methodological disadvantages limit the usage of this data measuring device. The basic assumptions underlying traditional Ordinary Least Squares (OLS) regressions are violated in a pooled model, and such departures may exhibit severe consequences for the reliability of the estimators (Stimson, 1985). For instance, the following assumptions are usually made in regards to the error term in pooled time series regression:

- 1) The error term has a mean of zero;
- 2) The error term has a constant variance over all observations;
- 3) The error terms corresponding to different points in time are not correlated (Ostrom, 1978).

The accuracy of the regression model is inevitably measured by the error term. Hence, if the standard error is small, then all of the sample estimates based on the sample size tend to be similar and considered representative of the population parameters. The exact opposite is true if the error term is large, then the statistics fail to represent the population parameters. Of the previously mentioned assumptions, the error term

corresponding to different points in time failing to correlate is the most important assumption violation. When the observations from different points in time are correlated, one of the assumptions is violated, usually the latter one. When this violation occurs autocorrelation is present, creating estimators that negate true representation of social phenomenon. Autocorrelation violates an assumption of the regression model that the residuals are independent of one another. Its presence affects the accuracy of the error term, which biases the model's t-ratios, and the confidence limit. Autocorrelation may be eliminated from a research project by identifying and including an independent variable that explains part of the unexplained variance. Beck and Katz (1996) contend that lagging the endogenous variable(s) will assist in controlling for serial correlation. A lagged regression model relates a current endogenous variable (*PERPUPILSPENDING*) to past values of the exogenous and endogenous variables, reducing the risk of autocorrelation.

A second major methodological problem with pooled time series cross-sectional data analysis is heteroscedasticity. In pooled data, some units for a variety of reasons are inherently more variable than others at all times. Such differential variability is usually of modest concern in unpooled data because it affects only a single case at a time. In pooled data, however, it is likely to inflict a larger amount of harm to data sets. For instance, basic size differences between units are one such endemic source of heteroscedasticity. On the reasonable assumption that variation is roughly a fixed proportion of size, analysis of units of substantially different sizes induces heteroskedasticity in any regression. But the problem can take on considerable proportion and become a cause for concern when each cross section consists of T cases in time. Therefore, the size problem can be reduced by standardizing the data (Beck and Katz, 1995).<sup>2</sup>

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<sup>2</sup> Multicollinearity was checked and four variables displayed VIF statistics 5.6 or higher. These variables were number of students, total spending for education, local tax revenue allotted for education, and state revenue allotted for education. These variables then excluded from the models and multicollinearity was checked again by using the VIF and tolerance levels displayed by the SPSS program. Multicollinearity was not a problem in the three models presented in the manuscript. All variables displayed VIF statistics of less than 5.6. In addition, autocorrelation and

## FINDINGS & DISCUSSION

### Exhibit One

#### Per Pupil Spending For Education Among Tennessee Black Belt School Districts

	<b>B</b>	<b>t-test</b>	<b>p&lt;</b>
Black Belt Districts	-350.837	-1.961	.050**
Dropout Rate	-46.966	-2.386	.017**
Accreditation E	-7.814	-4.771	.001***
Accreditation S	1.548	.902	.367
Operational Exp	.296	.158	.875
Capital Exp	.0040	.383	.702
Instruction Exp	-8.640	-3.612	.001***
Teacher Salaries	-2.946	-3.455	.001***
Federal Spending	21.482	1.236	.217
Constant	5772.479	14.688	.001
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R	.400		
R2	.160		
AdjR2	.154		
Df	9		
F	26.065		
F(sig)	.001		
N =	1360		
Note: *** significance at .001; **significance at .05			

Exhibit I displays an adjusted R<sup>2</sup> value of .154, which shows that almost 15 percent of the variance is being explained in model one. Despite the low variability found in the model, several indicators displayed various levels of statistical significance.

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heteroscedasticity (using White's test) were not problems in the data set.

The first variable, Black Belt Districts, was statistically significant displaying signs of an inverse relationship in the model. The data suggests that for every unit increase in Black Belt Districts a decrease of -350.837 will occur in per pupil spending for education. The significance of the t-test in the regression model (-1.961;  $p < .050$ ) allows for the rejection of the null hypothesis between the variables Black Belt Districts and per pupil spending for education.

Dropout rate was another variable contributing to the variance being explained in the model. The data suggests that for every unit increase in dropout rate a decrease of -46.966 will occur in per pupil spending for education. The significance of the t-test in the regression model (-2.386;  $p < .05$ ) allows for the rejection of the null hypothesis between the variables dropout rate and per pupil spending for education.

Among the two accreditation variables, only the elementary indicator reports a statistically significant finding. The data suggests that for every unit increase in accredited elementary schools a decrease of -7.817 will occur in per pupil spending for education. The significance of the t-test in the regression model (-4.771;  $p < .001$ ) allows for the rejection of the null hypothesis between the variables of accredited elementary schools and per pupil spending for education. Two of the measures of school district wealth: instruction expense and teacher's salaries reported statistically significant values in the model. In reference to instruction expense, the data suggests that for every unit increase in instruction expense a decrease of -8.640 will occur in per pupil spending for education. The significance of the t-test in the regression model (-3.612;  $p < .001$ ) allows for the rejection of the null hypothesis between the variables instruction expense and per pupil spending for education. The second variable, teacher's salaries also reports a statistically finding at the  $p < .001$  level significance, with a t-test score of -3.455, that allows for the rejection of the null hypothesis between teacher salaries and per pupil spending for education. The data suggests that for every unit increase in teacher's salaries a decrease of -8.640 will occur in per pupil spending for education.

In addition to the primary model measuring per pupil spending differences between Black Belt school districts and non-Black Belt school districts, the authors of this manuscript incorporated two supplementary models. One model measures the differences among Black Belt school districts and non-Black Belt school districts in regards to capital

spending for education and the third model measures differences over time of dropout rates between the two groups.

## Exhibit Two

### Capital Spending For Education Among Tennessee Black Belt School Districts

	<b>B</b>	<b>t-test</b>	<b>p&lt;</b>
Black Belt Districts	-940362.428	-2.041	.042**
Dropout Rate	-67041.534	-1.321	.187
Accreditation E	1112.444	.262	.794
Accreditation S	3239.163	.733	.464
Operational Exp	51970.178	11.261	.001***
Per Pupil Exp	26.648	.383	.702
Instruction Exp	-26756.735	-4.354	.001***
Teacher Salaries	-15.787	-.716	.474
Federal Spending	327022.231	7.449	.001***
Constant	1674484.248	-1.539	.124
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R	.392		
R2	.156		
AdjR2	.151		
Df	9		
F	158.175		
F(sig)	.001		
N =	1360		
Note: *** significance at .001; **significance at .05			

Exhibit II displays an adjusted R<sup>2</sup> value of .151, which shows that almost 15 percent of the variance is being explained in model one. Despite the low amount of variance being explained in the model, several indicators displayed levels of statistical significance.

Again, in reference to Black Belt Districts, the variable was statistically significant displaying signs of an inverse relationship in the model. The data suggests that for every unit increase in Black Belt Districts a decrease of -940362.428 will occur in capital spending for education. The significance of the t-test in the regression model (-2.041; p<.042) allows for

the rejection of the null hypothesis between the variables Black Belt Districts and capital spending for education.

Operational Expense was another variable contributing to the variance being explained in the model. The data suggests that for every unit increase in operational expenses an increase of 51970.178 will occur in capital spending for education. The significance of the t-test in the regression model (11.261;  $p < .001$ ) allows for the rejection of the null hypothesis between the variables operational expenses and capital spending for education.

Instruction expense is another variable displaying statistical significance in the model. The data suggests that for every unit increase in instructional expenses a decrease of -26756.735 will occur in capital spending for education. The significance of the t-test in the regression model (-4.354;  $p < .001$ ) allows for the rejection of the null hypothesis between the variables, instructional expenses and capital spending for education. Finally, the variable federal spending on education displays a statistical significance when regressed against capital spending for education. The data suggests that for every unit increase in federal spending for education an increase of 327022.231 will occur in capital spending for education. The t-test value of 7.449, with a  $p < .001$  allows for the rejection for the null hypothesis between federal spending on education and capital spending for education.

Exhibit III displays an adjusted  $R^2$  value of .161, which shows that almost 16 percent of the variance is being explained in model one. Once again, despite the low amount of variance being explained in the model, several indicators displayed levels of statistical significance.

For the third time the Black Belt school districts variable was found statistically significant in the model. The data suggests that for every unit increase in Black Belt school districts an increase of .492 will occur in the dropout rate. The significance of the t-test in the regression model (1.928;  $p < .054$ ) allows for the rejection of the null hypothesis between the variables Black Belt Districts and dropout rate.

## Exhibit III

### Dropout Rates Among Tennessee Black Belt School Districts

	<b>B</b>	<b>t-test</b>	<b>p&lt;</b>
Black Belt Districts	.492	1.928	.054**
Per Pupil Spending	3.313	.908	.364
Accreditation E	-.0066	-2.821	.005**
Accreditation S	-8.632	-3.558	.001***
Operational Exp	1.896	.231	.817
Capital Exp	-,0001	-.940	.348
Instruction Exp	.0021	.131	.896
Teacher Salaries	-.0166	-1.421	.156
Federal Spending	7.316	.209	.835
Constant	1.822	3.282	.001
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R	.410		
R2	.168		
AdjR2	.161		
Df	9		
F	24.999		
F(sig)	.001		
N =	1360		
Note: *** significance at .001; **significance at .05			

Among the two accreditation variables, both the elementary and secondary indicators reported statistically significant values. The data suggests that for every unit increase in accredited elementary schools a decrease of -.0066 will occur in per pupil spending for education. The significance of the t-test in the regression model (-2.821;  $p < .05$ ) allows for the rejection of the null hypothesis between the variables accredited elementary schools and per pupil spending for education. In addition the secondary accreditation variable reported findings that suggest that for every unit increase in the number of high schools accredited a decrease of -8.632 will occur in dropout rates. The t-test value of -3.558, with a  $p < .001$  allows for the rejection of the null hypothesis between the secondary accreditation variable and dropout rate.



## **Policy Implications and Limitations**

The findings of this study suggest several policy implications for educational stakeholders in Tennessee. All three models in the study demonstrate that a statistical significance exists between Black Belt school districts and non-Black Belt school districts in the amount of revenue that is spent per pupil in Tennessee. The statistical difference is suggesting that Black Belt school districts spend far less per pupil, as well as for instructional expenses and teacher's salaries. In reference to Model II, capital spending for education, Black Belt school districts again, spend far less than non-Black Belt school districts in Tennessee. With the elementary and secondary school accreditation variables displaying statistically significant values in Model's I and III, the implication is that school districts with larger portions of their educational institutions failing to meet standard requirements results in less spending for education, which in turn results in increased dropout rates. The statistical findings of this study suggest that Black Belt school districts are spending less across the board for education, and as a result dropout rates are higher than in non-Black Belt school districts. Secondly, the spending levels among Black Belt school districts are inadequate and as a result such districts are unable to maintain the necessary standards to meet accreditation requirements set by the state of Tennessee. As a result of the low number of accredited elementary and high schools in these districts, these schools find it harder to attract qualified applicants to teach their children. Furthermore, the funding inadequacies of Black Belt school districts and non-Black Belt school districts make it almost impossible for these school districts to purchase the necessary elements of technology to meet accreditation specifications. This is a generational cycle that has existed for quite some time and will continue to exist until funding discrepancies are eradicated by either increased local revenues for education, or more resources dedicated by the state of Tennessee or the federal government.

This study is limited in making such accusations, which lends support for future studies that can measure funding inadequacies from county to county. For instance, variables that incorporate the tax base between Black Belt school districts and non- Black Belt school districts is needed to show that the pool of resources available for Black Belt school districts is far less than for non- Black Belt school districts. Other variables such

as unemployment rates and graduation rates over time may suggest that the educational base of the general population is too low for offering marketable skills that may lead to increased economic development in these poverty stricken areas. Moreover, this study needs to be expanded to include the 643 Black Belt school districts found in the 11 states across the south. This study is a snap shot of what is taking place in Tennessee, but generalizing the Volunteer state's findings to other southern states is a bit premature at this time. A similar model incorporating all the Black Belt school districts in the south has the possibility of painting a not so glamorous picture for educational stakeholders in the South.

Despite the limitations of this study, the authors feel that the findings of this study are important for filling a gap in the literature on funding disparities between Black Belt school districts and non- Black Belt school districts. The literature is absent of such empirical models as the one offered by this study, and the results are what many normative scholars have been arguing for years. This study lends statistical support to the theoretical arguments about funding disparities among the have and have not school districts in the South. Now we can only hope that educational policymakers will use such studies for making definitive policy recommendations for eradicating these funding disparities.

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## **APPENDIX I**

### Black Belt Counties In Tennessee

1. Crockett
2. Davidson
3. Dyer
4. Fayette
5. Gibson
6. Giles
7. Hamilton
8. Hardeman
9. Haywood
10. Lake
11. Lauderdale
12. Madison
13. Maury
14. Montgomery
15. Shelby
16. Tipton
17. Trousdale

Total Counties in Tennessee – 95

## APPENDIX II

### Black Belt School Districts In Tennessee

1. Alamo
2. Bells
3. Bradford
4. Covington
5. Crockett
6. Dyer
7. Dyersburg
8. Fayette
9. Gibson
10. Giles
11. Hardeman
12. Haywood
13. Humboldt
14. Lake
15. Lauderdale
16. Madison
17. Maury
18. Milan
19. Montgomery
20. Shelby
21. Tipton
22. Trenton
23. Trousdale

Total School Districts in Tennessee – 136