

RACE AND INEQUALITY IN SCHOOL FUNDING ACROSS TEXAS

An Undergraduate Research Scholars Thesis

by

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This project did not require approval from the Texas A&M University Research Compliance & Biosafety office.

TABLE OF CONTENTS

	Page
ABSTRACT	1
DEDICATION.....	2
ACKNOWLEDGEMENTS.....	3
SECTIONS	
INTRODUCTION	4
Project Importance and Context	4
1. LITERATURE REVIEW	7
2. THEORETICAL ARGUMENT	10
3. DATA STRAGETY	12
3.1 District Level Analysis	12
3.2 School Level Analysis	18
4. RESULTS	20
4.1 District Level Results	20
4.2 School Level Results	23
CONCLUSION.....	25
REFERENCES	27

ABSTRACT

Race and Inequality in School Funding Across Texas

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Previous work has shown that there are differences in public school funding across the nation. It is less clear, however, how the racial and ethnic make-up of school districts affects average funding per student. In this study, I focus on how school funding in Texas differs with the racial and ethnic make up the school districts and schools. I find that districts with higher shares of minority students, on average spend less money per student, Moreover, even within the same school district, schools with more minority students have higher student-teacher ratios. These findings have important implications for debates about equity in the Texas' education system.

DEDICATION

To my friends, families, peers, and especially my instructors who supported me throughout the research process and made this possible.

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Contributors

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The materials analyzed for *Race and Inequality in School Funding Across Texas* were provided by Dr. Florian Hollenbach. The analyses depicted in *Race and Inequality in School Funding Across Texas* were conducted in part by the department of Political Science and were created in 2021.

All other work conducted for the thesis was completed by the student independently.

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INTRODUCTION

Education is one of the most important determinants of a child's future success. Yet, there is much inequality in the quality of education that is provided to American children. Public school districts are partly funded by the state and federal government, but more than half of the funding in Texas comes from local property tax revenue. In 2018, Texas spent an average of \$7,746 (Directing Dollars to School Districts, 2018). One district, however, spent an average of \$36,744 per student, while another spent only \$6,885 per student (Directing Dollars to School Districts, 2018).

In this study, I investigate how the racial make-up of a school district (and schools) affect public school funding. In this thesis I ask, do differences in racial makeup affect school funding between school districts? Further, do schools with different racial makeup within the same district receive different levels of resources? I contend that majority minority districts are underfunded compared to majority White districts. I investigate these questions using data on the state of Texas school districts and school specific data for the school year 2018-2019. Although the state of Texas guarantees that a certain amount of money needs to be given per each enrolled student, large differences remain. The issue is that "districts [are] commonly distribut[ing] different amounts of funding, even when schools serve the same types of students" (DeBurgomaster et al., 2007). Low-income children of color are being affected by school district budgets the most.

Project Importance and Context

In 1993, the Texas State Legislature passed Chapter 41 of the Texas Education Code to help make school funding more proportionate across school districts. This is also known as

“Robin Hood” law or recapture because wealthy school districts give up some of their collected property tax revenues, which is then redistributed to high-poverty school districts. The recapture program is controversial because the state leaves many school districts underfunded. And even the wealthy school districts who distribute their property taxes have been found to struggle to to the redistribution (Villanueva, 2018b). Although recapture is a positive step towards ensuring there is equal distribution of funding, the wealthy school districts also find themselves underfunded, especially at times when their district population grows rapidly.

Additionally, there are many instances where funding is arguably misallocated to the wrong places. Money should be spent where it is needed the most and where students would benefit most from it (Villanueva, 2018a). In 1984, the state of Texas created a program that was meant to tackle the issue of equity versus equality known as the system of “weights” or student-based funding. This program is used across 37 different states to adjust for low-income students on student-based needs. Texas was one of the first states to recognize this problem and implement a program at a very early stage (Villanueva, 2018a). The student-based funding program was implemented over 30 years ago to help place funding where it is specifically needed, but it has not been changed since. Every year, there is an increase in enrollment of high-poverty students but a lack of action from the legislature. In 2018, the Texas State Legislature began to reevaluate the finance system used to distribute funding to public school districts.

Due to local financing of schools, children who come from low-income households are often at a significant disadvantage when it comes to public school funding. Due to the relationship between race and income, in many instances children from low income families are children of color. The issue of racism has been determined by historical events to be “both directly and indirectly defined by the dominant culture and by the courts... a matter of racial

separation rather than racial subordination” (Vaught, 2009, p. 564). There is limited effort by the state to overcome racial separation in schools and equal school funding. In the early 2000s, the Jericho Public Schools, which consisted of about 60% children of color experienced a political scandal because there was a large achievement gap between White children and non-White children. The school district lost upwards of \$50 million dollars in funding that is meant to be given to schools within the district. The White male superintendent explained this gap to be due to disproportionate school district funding. These children should have been receiving more funding because their economic status qualified them to, but instead they received less (Vaught, 2009).

Many students of color receive less school funding due to living in high poverty school districts. Yet, it is unclear whether disparities exist independent of income levels. Do schools with high shares of students of color receive less funding on average than schools with more White students, even in districts with similar income levels? It is important to determine how race affects public school funding in Texas today. Differences in school funding has long term effects on children and their future. Previous research shows the large gaps in school funding across school districts in Texas, but the question of how race affects funding differences have not been studied sufficiently.

1. LITERATURE REVIEW

After the Great Recession began in 2007, public school districts found themselves losing funding due to a significant decline in property tax revenue. Property taxes were and still are the main source of income for public schools, not only in Texas, but across the country. For the next few years, the school districts were still struggling to keep afloat. This U.S. prides itself on creating opportunities for children through public education, but having each state create their own policies leads to a complicated system. A study done by Baker et al. (2014) analyzed whether the funding formula in each state was “fair”. They did this by using four measures: funding level, funding distribution, effort, and coverage, estimating a combination of descriptive statistical models. The authors were interested in whether states are making sufficient effort to provide a fair system to fund their public schools, and if they are delivering the necessary resources to help each child achieve academic success (Baker et al., 2014)? The authors found that when a state prioritizes education by providing proper funding, they attract high-quality teachers and are able to provide their students with better resources to lead them to success (Baker et al., 2014).

One of the main problems in the education system is funding inequality, which can have many negative outcomes such as high crime rates, low levels of achievement, and poor health (Boustan et al., 2013). In a 2013 study, Boustan et al. using empirical analyses, show a relationship between income inequality and changes in government funding at the municipal level. From the years 1970 to 2000, it was found that the rise in income inequality is tied to large increases in tax revenue and a rapid increase of public expenditure in local and public-school district levels which led to inequality in funding between school districts (Boustan et al., 2013).

Income inequality within public school district funding has been increasingly happening for a very long time and it is due to tax revenues.

A more recent step towards achieving more equality for children all across the country was the No Child Left Behind Act. The purpose was to reduce the disparities in the system which disadvantage low-income families and often children of color. Nearly half of all Latino and Black children grow up in poverty (Warren, 2014). The lower income has larger negative effects on children of color when it comes to in school achievement. Growing up in poverty often leads children to perform worse in school (Warren, 2014). In addition to lower school funding, students of color are found to be punished frequently, which leads to further disparities. A report from 2010 stated that 75% of Black children in the state of Texas were suspended between seventh to twelfth grade (Warren, 2014). Suspension for Black children not only makes it more likely that they will drop out, but it can also increase the likelihood that they end up in the criminal justice system. Two-thirds of Black young men without high school diplomas will end up in prison (Warren, 2014). Disparities in public schools can produce immediate inquiries but also have important downstream and long-term consequences.

A study done in 2007 by Bingham, Jones, and Jackson analyzed the formula used to distribute funds to public school districts. They found that the more the districts relied on local property taxes to fund their schools, the larger the disparities (Bingham et al., 2007). The authors also found that some poorer school districts may not be using their full funding because they are unable to access those funds (Bingham et al., 2007). In a more recent study in 2017, Knight asked whether high-poverty school districts suffered greater revenue losses in recessions (Knight, 2017). The author explored the gap experienced between low and high-poverty districts and found that the state is not taking strong enough measures to prevent increases in local

property taxes for high-poverty districts (Knight, 2017). While the Texas Supreme Court ruled the finance formula to be constitutional, the lawmakers have failed to prevent low-income communities from having their taxes raised to unsustainable levels, especially after a recession (Knight, 2017). The author concludes that the state needs to take bigger steps towards decreasing the gaps in funding across Texas. It is not clear, however, in what direction the legislature should go in order to improve its policies.

Rivera and Lopez use school districts across San Antonio to investigate disparities between school districts in Texas. Rivera and Lopez in 2019, found that constant research needs to be conducted on the specific funding across districts in order to make recommendations to the law makers on a yearly basis. They also found that the current policies in place can be inadequate, and they suggest policy makers need to address not only school finance formulas, but also fluctuations in school district capacity. The authors suggest that Texas lawmakers learn from other more successful states such as Massachusetts, New Jersey, and Ohio (Rivera and Lopez, 2019). This research has its weaknesses when it mentions that the state needs to give greater responsibility to local governments. Local, state, and federal governments need to work together to create a fair system for public schools in Texas.

2. THEORETICAL ARGUMENT

Local property taxes are disadvantaging children from high-poverty districts as the overall tax base is smaller. To compensate for the smaller tax based, the poor districts often have to increase tax rates. Larger differences in school district funding exist, even within the same city. It is not difficult to identify between high-poverty and low-poverty school districts. At what degree are schools and school districts with high shares of minority students further disadvantaged?

There have been substantial changes to the Texas finance formula used to fund school districts and limited research on the impact of these changes on public school funding. Therefore, there is a lot of new information to dissect. In this paper, I study whether children of color are being affected by disproportionately affected by disparities in school funding.

Studies have found a strong correlation between public-school budget and spending and the racial makeup of school districts. If there is low or unequal funding in public schools, it is most likely due to the fact that that school district or the school itself is in a low-income community. Although there are high-poverty school districts made up of both predominantly White students and predominantly minority students, the question is whether minority school districts are disadvantaged even after accounting for possible income effects.

Historically, schools with majority minorities have been underrepresented in funding, therefore it is expected that the high-minority school districts and schools will receive less funding. The primary hypothesis is that school districts (and schools) that are largely made up of Black and Hispanic children will have lower funding levels than school districts that are predominantly White, even after accounting for income differences. I expect to see lower school

spending in public schools that are majority Hispanic and Black students. Individuals who are from high-poverty communities will have higher tax rates, but the districts collect less revenue due to smaller tax bases. These disparities are reflected in their school district budget.

To investigate the hypothesis, I use data on average per student school funding and racial make-up at the school district level. The dependent variable in this first analyses is average funding per school district. The main independent variable is the percentage of students of color. I control for percentage of people living in poverty and size of school district.

In the second analysis, I use data at the school level. Here, the dependent variable is student to teacher ratio, i.e., the number of students for each full-time teacher in a school. This variable should proxy for funding levels at the school level. The main independent variable is again the percentage of Black and Hispanic students in a given school. To account for differences in income levels, I account for the share of students that receive free or reduced lunches. This analysis allows me to only analyze differences within school districts by adding school district fixed effects.

If the above voiced expectations about disparities in funding levels due to race/ethnicity are correct, we should observe negative and statistically significant coefficient on *percent students of color* in the school district analysis and a positive significant coefficient in the school level analysis. However, if the reason why minority school districts receive less funding is only because they are more likely to live in poverty, then the only coefficient on the percentage of people living in poverty should be statistically significant.

3. DATA STRAGETY

3.1 District Level Analysis

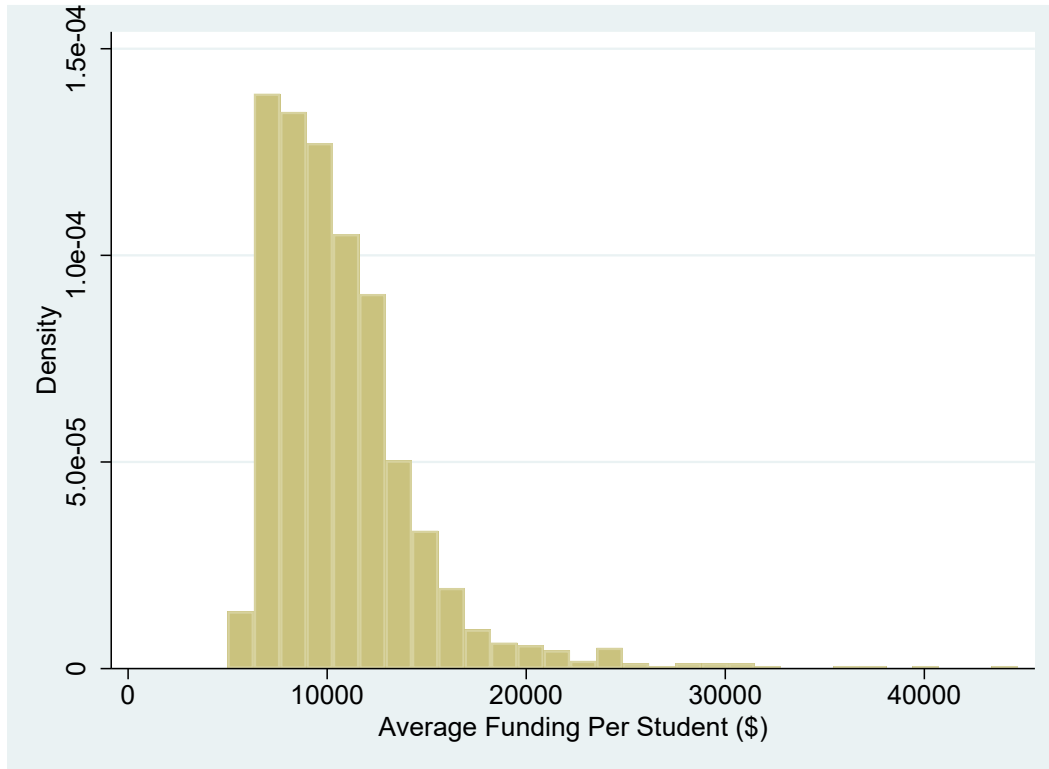


Figure 3.1: Average funding per student per school district in 2018.

Before presenting results, I first present the raw data variables. Figure 3.1 shows average school district funding per student in Texas from the school year 2017-2018. The x-axis represents average funding per student. Based on this data, about 51 percent of school districts in Texas receive \$10,000 or less per student on average, while about 1.1 percent of schools receive an average of over \$25,000 per student. Although there are much more school districts that are below or near \$10,000 per student per year, well-funded school districts still exist. This further provides evidence of the large discrepancies in school funding. In the statistical analysis presented below, I log the average student funding variable to account for skew in the data.

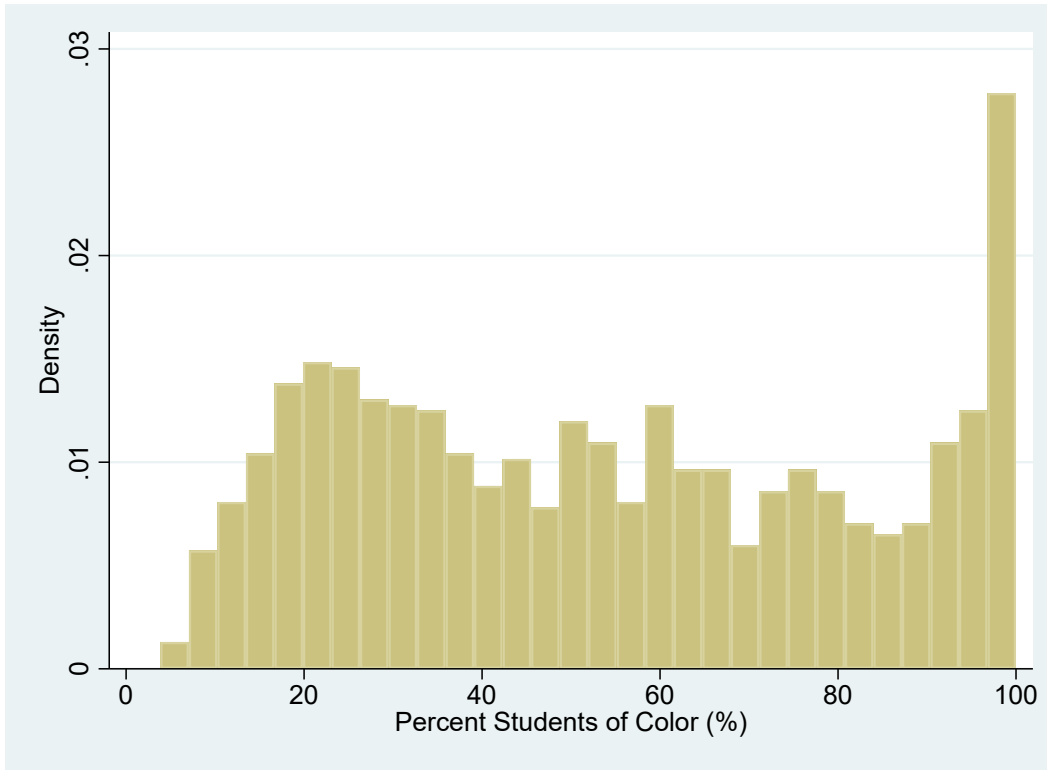


Figure 3.2: Percent students of Color per school district in 2018.

Figure 3.2 shows the percentage of students of color in each school district in 2018. There are no school districts with zero percent students of color. Many school districts have more than sixty percent students of color. This figure shows the large diversity of the student body across school districts in Texas. In some school districts all students are students of color, and many school districts have shares of students of color close to 100%. Figure 3.2 shows the importance of the questions investigated in this study. Do school districts with higher percentages of students of color have lower budgets due to the racial makeup of the school?

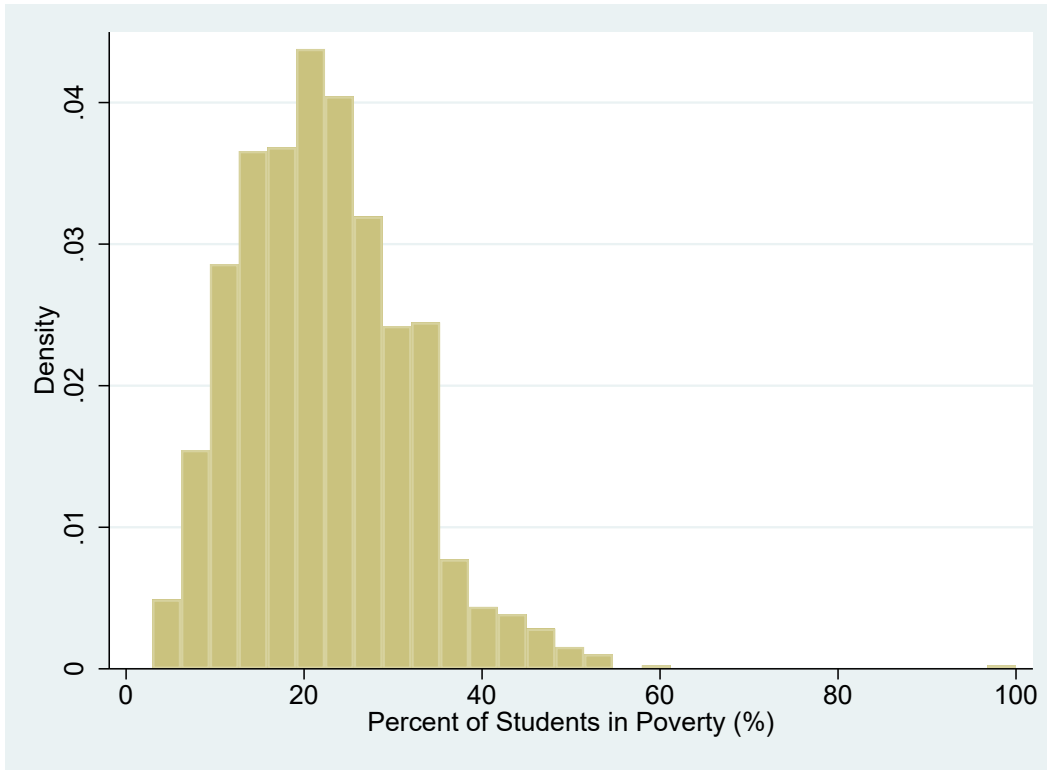


Figure 3.3: Percent of school districts in poverty in 2018.

Figure 3.3 shows the distribution of the percent of student living in poverty in school districts in Texas in 2018. There are few school districts with more than sixty percent of students in poverty, but there are few school districts where almost all students live in poverty. This means that the students enrolled in these school districts all come from poor households. The high share of districts with moderate to high poverty shares and high diversity in racial make-up shown in Figure 3.2 further shows the need to understand what creates disparities in school funding in Texas.

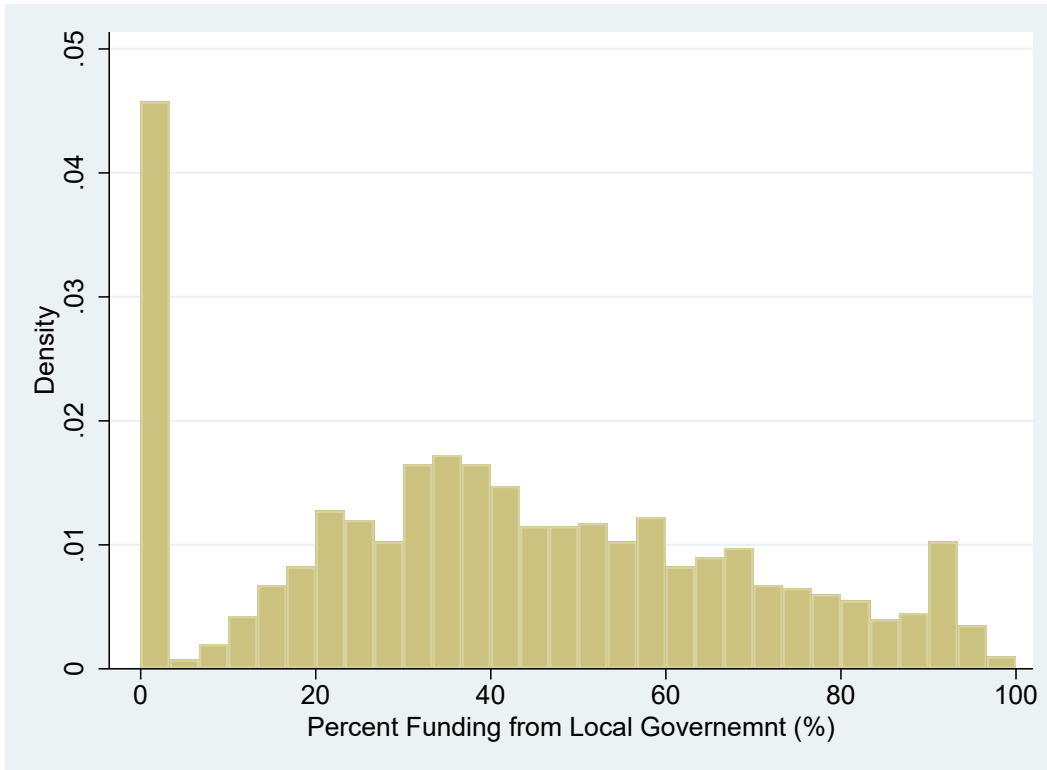


Figure 3.4: Percent funding that comes from local government in the school year 2018-2019.

Figure 3.4 represents the percent of the funding in public school districts that came from local government. Unlike most of the other figures, this one is fairly spread out. There are many school districts that receive funding from local government, while there are also other school districts that receive no funding from local government. This is an example of how disproportionate school funding can be. School districts can get their funding from different places, such as the state and federal government, therefore funding is likely to differ.

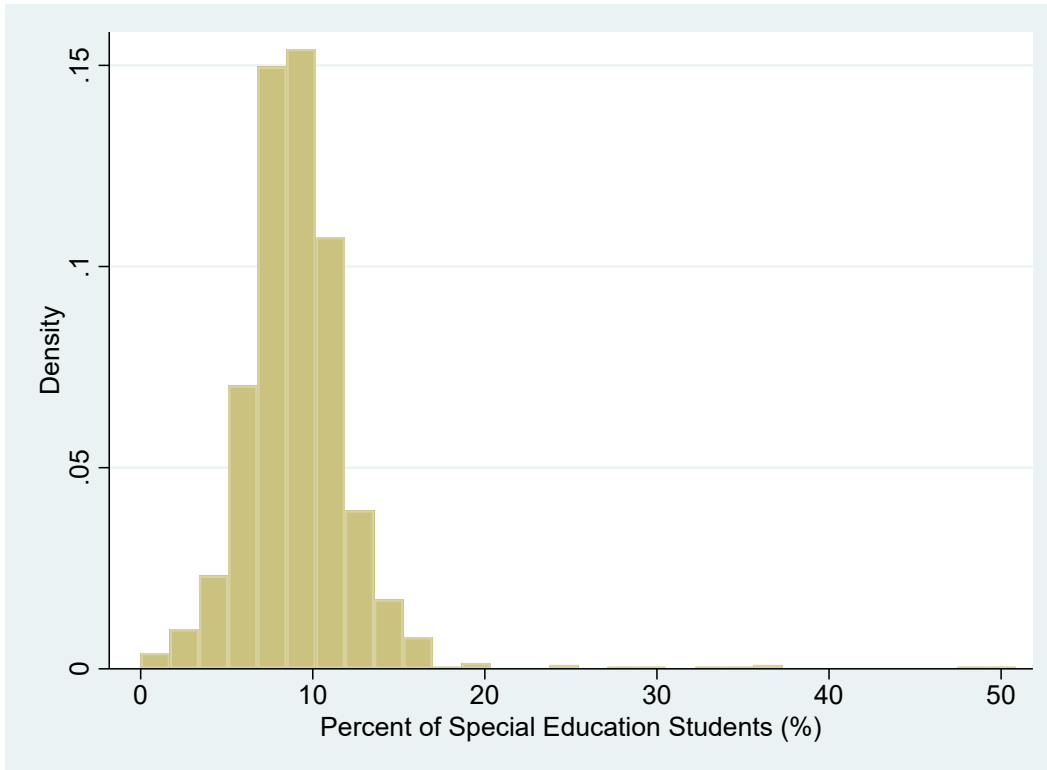


Figure 3.5: Percent of Special Education students enrolled in the 2018-2019 school year.

Figure 3.5 shows the percent of special education students enrolled in each school district for the 2018-2019 school year. There are many schools that have special education students, and very few that have none. There are much smaller percentages of special education students. This may be because it is an underfunded program and there are less resources available. But it is also true that many children go undiagnosed for mental disabilities. It is important to take special education into consideration because school districts may receive more funding in order to keep their programs running.

Figures 3.3-3.5 represent control variables. Although the percentage of students of color affects the average funding per student there are other variables that affect it. Additionally, rural and city school districts commonly differ in size and funding. Since school districts can vary in enrollment, the funding may change significantly. The variables poverty, rural/urban, English

Language Learners, special education students, and local government funding may affect to the amount of funding that is given to each school district. Variables such as English Language Learners and special education students affect the funding of a school district because these programs increase funding. Local government funding can differ based on property values near the school district. Most importantly, these variables might also be correlated with the racial make-up and could thus confound the observed relationship. Programs such as English Language Learners and special education present in school districts not only increase funding but can also be affected by race. Programs like English Language Learners are commonly filled with minority students who are struggling to learn English as a second language, or where never taught it at home. Poverty is used as a control variable because students that come from low-income households can often come from minority families. I therefore add these variables as controls, which should increase the accuracy of the results.

3.2 School Level Analysis

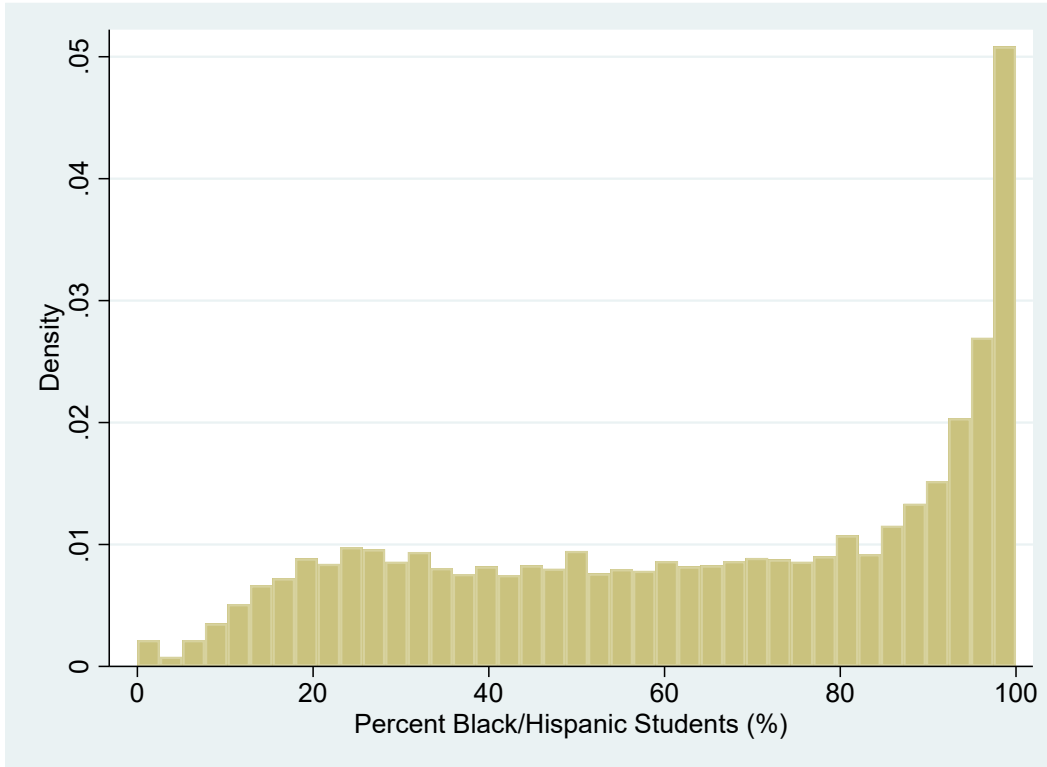


Figure 3.6: Percent of Hispanic and Black Students in the 2018-2019 school year.

The school level data is analyzing how the racial make-up of schools affects resources within the same school districts. This will help to determine whether schools within the same school district that are majority minority receive less funding than those who are majority White. Figure 3.6 represents the number of Black and Hispanic students enrolled per school. It shows that very few schools have low percentages of minority students, and large amounts of schools have all Black and/or Hispanic children enrolled. When looking at the raw data for school level minority enrollment, a larger percentage of minorities present in public schools still remains.

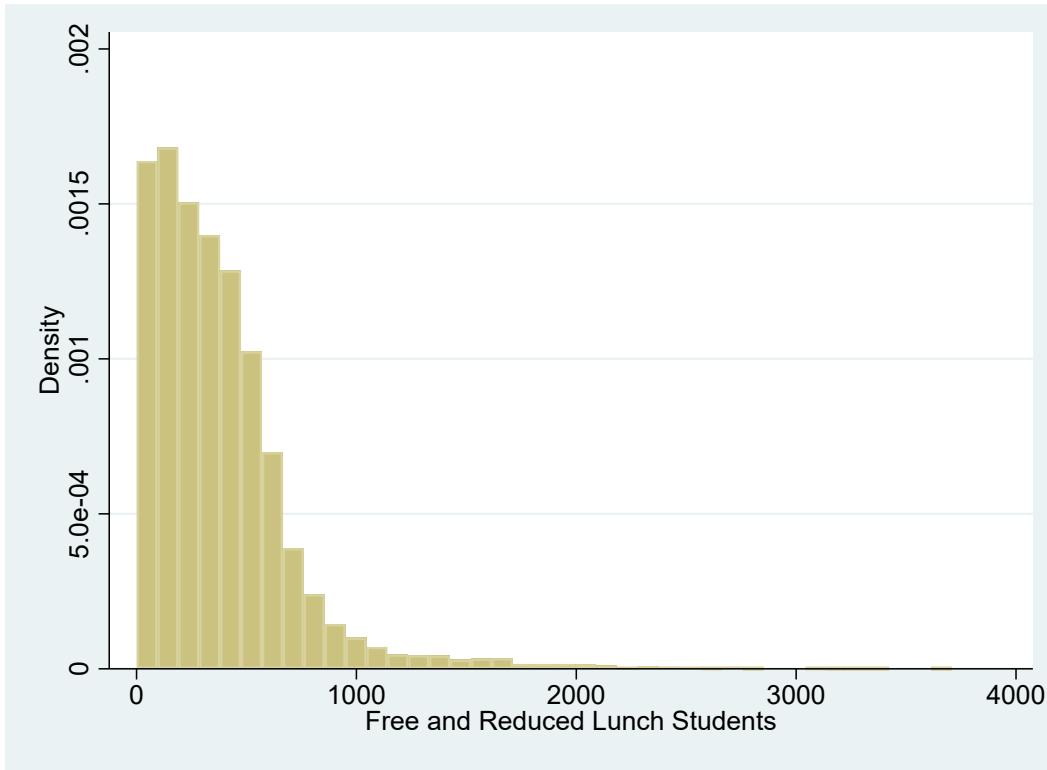


Figure 3.7: Percent of students who receive free or reduced lunch.

Figure 3.7 shows the number of students who receive free or reduced lunch per school. This is used as a control variable in order to control income. There are low numbers of students who receive free or reduced lunch. While most schools fall below the 1000 range, there are still many students that require assistance when paying for their food at school. This helps determine how many students are likely live-in poverty in each school.

4. RESULTS

4.1 District Level Results

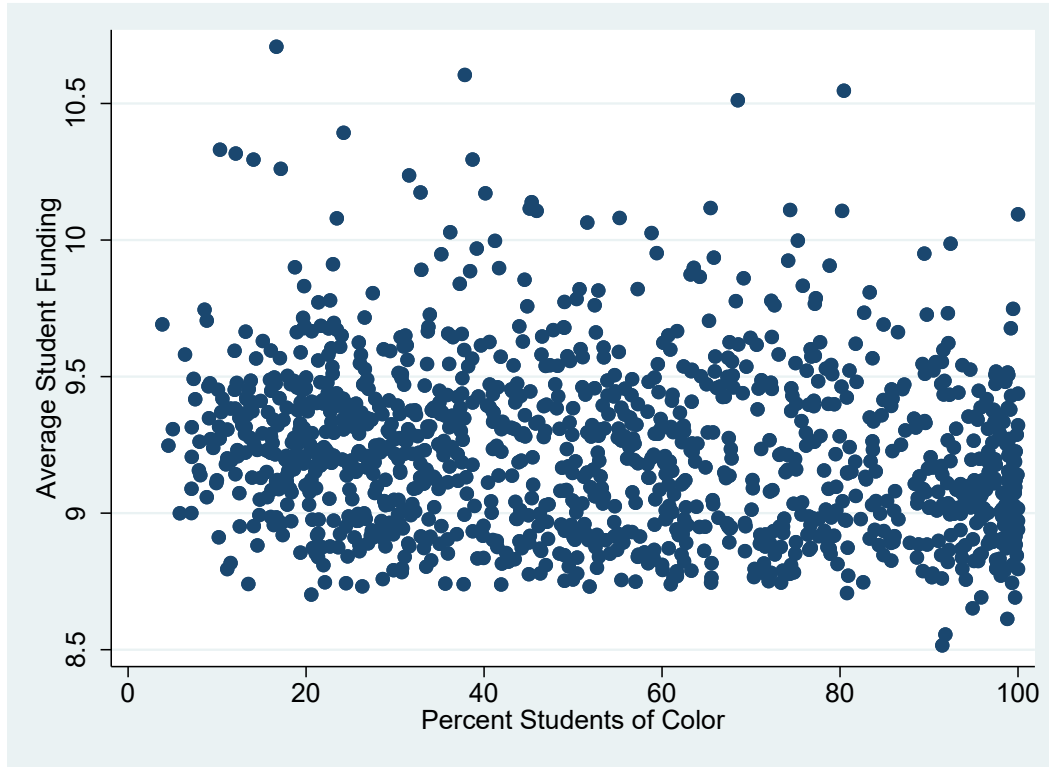


Figure 4.1: Scatter plot of percent students of color and average per student spending in 2018.

Figure 4.1 shows the relationship between students of color and logged average school funding. School districts with large budgets are still not many, but this shows that low percentages of students of color are more likely to get larger budgets. There is a larger cluster of school districts near the one hundred percent students of color, and below \$10,000 (9.2 logged scale above) per student spending. As noted above, most school districts actually fall within or below the average of \$10,000 per student spending.

Table 4.1: Regression model for dependent and independent variable including control variables.

	(1)	(2)
	Log(Average Student Funding)	Log(Average Student Funding)
% Students of Color	-0.002***	-0.002***
	(0.00)	(0.00)
% English Language Learners		-0.002*
		(0.00)
% Students in Poverty		0.011***
		(0.00)
% Special Education		0.012***
		(0.00)
% Funding from Local Government		0.002***
		(0.00)
Geography		-0.014
		(0.01)
cons	9.337***	8.965***
	(0.02)	(0.04)
R-squared	0.034	0.144
N. of cases	1197.000	1130.000

*indicates significance at $p < .05$

To move beyond the raw data, I estimate standard linear regression models to test my hypothesis. Tables 4.1 and 4.2 show the regression for the school district and school level analyses.

Table 4.1 presents the results with logged average students funding as the dependent variable and percent students of color as the main independent variable. Both of my variables are continuous; therefore, OLS regression is the appropriate model to estimate. Table 4.1 shows strong support for the hypothesis outlined above. The table shows the slope coefficient (beta) for percent students of color to be negative, and statistically significant. This means that as the percentage of students of color increases, the logged average funding per student decreases. Based on the data from 2018, the estimate suggests that as the percent of students of color increases by one, the average funding per student decreases by two percent. The estimated results do not change with the inclusion of the control variables.

Column in Table 4.1 also shows the estimated coefficients for the control variables. The results suggest that percent of students in poverty, percent of special education students, and percent funding from local government are all positively associated with school funding, while percent English Language Learners is also associated with lower funding. The r-squared value is positive and proves that average school spending is affected by the percentage of minority students.

The results in Table 4.1 provide support for the hypothesis stated above. As the percent of student of color increases, the average per student spending decreases. According to the data, children of color are being put at a disadvantage. They receive less funding than school districts with higher shares of White students. These findings raise additional questions about the equity of school funding in Texas that politicians can and should consider.

4.2 School Level Results

Table 4.2: Regression model for dependent and independent variable including control variable.

	Student-Teacher Ratio
% of Non-White Students	0.016***
	(0.00)
title1	-0.207
	(0.12)
% of Students with Free Lunch	-0.037***
High School	-1.170***
	(0.19)
Middle School	-0.202*
	(0.10)
Secondary School	-0.314
	(0.81)
cons	16.472***
	(0.24)
R-squared	0.942
N. of cases	7580.000

*indicates significance at $p < .05$

Table 4.2 shows the results from the school level analysis, which include district fixed effects, i.e., an indicator variable for each individual school district. The results for non-White students enrolled per school is statistically significant and positive. When looking only at variation within public school districts, I find that the percent of non-White students is associated with higher student to teacher ratio. Even when controlling for the share of students who receive free or reduced lunches and the type of school, a higher share of minority students in a school is associated with a higher student-to teacher ratio in the same school district. This suggests that even in the same school districts, minority students are often disadvantaged.

In addition, schools with higher shares of students receiving free lunch associated with lower student-teacher ratios. The results shown in Table 4.2 make it clear that race strongly affects student to teacher ratios. Schools that are majority non-White are seeing significantly

higher student to teacher ratios. Higher student to teacher ratios may be due to lack of investment in these schools. As the percent of non-White students increases, there are more students per teacher.

CONCLUSION

Throughout this study, the goal was to determine whether schools with high shares of minority students receive less funding than majority White students. I analyze data for all public schools in the state of Texas for the 2018-2019 academic year. The second data set included all title 1 public schools in the state of Texas for the 2018-2019 academic year. I find that as the percentage of minority students increases, the average student funding decreases. Within school districts, schools with higher shares of non-White students have higher student-teacher ratios, i.e., more students per full time teacher.

The results to this study have considerable implications for the study of education policy. First, they bring to light the importance of looking beyond public school district funding. In this study, along with testing public school district funding, I also investigate differences within school districts. Specifically, how are student to teacher ratios affected by the racial make-up of the school? This study aimed to investigate whether minority children are put at a disadvantage when it comes to public school funding. Both data analyses suggested that funding decreases as the percentage of minority students increases, putting minority students at a disadvantage.

The results have important implications due to the effects low funding can have on the education of a student. It is important that state leaders and politicians take steps towards creating equal funding for all students in the state of Texas. This study serves as a preliminary explanation of the current status of and disparities in public school funding in the state of Texas. A next step would be to further investigate the mechanism that leads to these differences in funding and how children of color are affected. What steps can we identify to remedy these issues

and provide more equitable school funding? The goal is to stop the disadvantage of minorities within public school districts.

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